Comprehensive assessment of the green and circular economy

Comprehensive assessment report

2023

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LIST OF ACRONYMS:

CE	Circular Economy
FRC	Financial Regulatory Commission
GCF	Green Climate Fund
GDP	Gross Domestic Product
GGGI	Global Green Growth Institute
GHG	Greenhouse Gases
GoM	Government of Mongolia
MoF	Ministry of Finance
MSFA	Mongolian Sustainable Finance Association
MSMEs	Micro, Small, and Medium Enterprises
NDCs	Nationally Determined Contributions
NDCs	Nationally Determined Contributions
NSO	National Statistics Office
SDGs	Sustainable Development Goals
SMEs	Small and Medium Enterprises
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
VAT	Value Added Tax
WB	World Bank

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CONTENTS

LIST OF FIGURE AND TABLE

1. CURRENT STATUS OF THE SECTOR AND NEEDS FOR IMPLEMENTATION OF CIRCULAR ECONOMY MODELS

1.1. Rationale

Scientists believe that five of the nine[1][2]; (nitrogen cycle; climate change; changes in the earth's surface) have already been exceeded or are close to being exceeded. Therefore, we are faced with the need to save our existing resources as much as possible and move to a circular economy (**CE**) by recirculating them in the socio-economic system. To properly plan this policy strategy, it is important to identify the gap between current readiness and the goal to be achieved and find a starting point.

By 2023, only **7.2%** of the world's economy is circular, and this figure is decreasing year by year following the needs of the society that is growing at a faster rate[3]. Interestingly, even if we have switched to renewable energy 100%, it has been estimated that we can only meet 70% of the world's needs[4]. According to the human development index and ecological footprint, the countries of the world are classified as "build" countries (dominated by agricultural activities), "grow" countries (rapidly industrializing countries), and "shift" countries (developed countries with high consumption)[5] and there is a need to determine where Mongolia is heading in terms of the state of energy efficiency.

Energy efficiency is the process of rejecting the linear economy in which products are produced and consumed from resources, and adopting a renewable circular model. Specifically, it is a solution that minimizes waste by reusing and recovering existing resources and energy sources. Going circular requires innovative materials and products with new designs and new technological manufacturing processes. The main principle of economic feasibility is to get the same or more efficiency with fewer resources than usual. For example, the method of replacing materials with high impact on the environment, such as concrete, with low impact and renewable resources will be used. But it's not just about the material. Adopting new technologies and innovations in new business and management models is a more important step. In other words, the entire value chain and material flow should be circular. The main strategies for their implementation are suggested by international experience as follows. It includes:

1. Increase resource efficiency
2. Extend the lifetime of products
3. Switching to service-based models
4. Recovery after disposal
5. Shift to circular supplies
6. Facilitate demand for circular products and services

[1]The Nine Planetary Boundaries, Stockholm Resilience Center https://www.stockholmresilience.org/research/planetary-boundaries/the-nine-planetary-boundaries.html

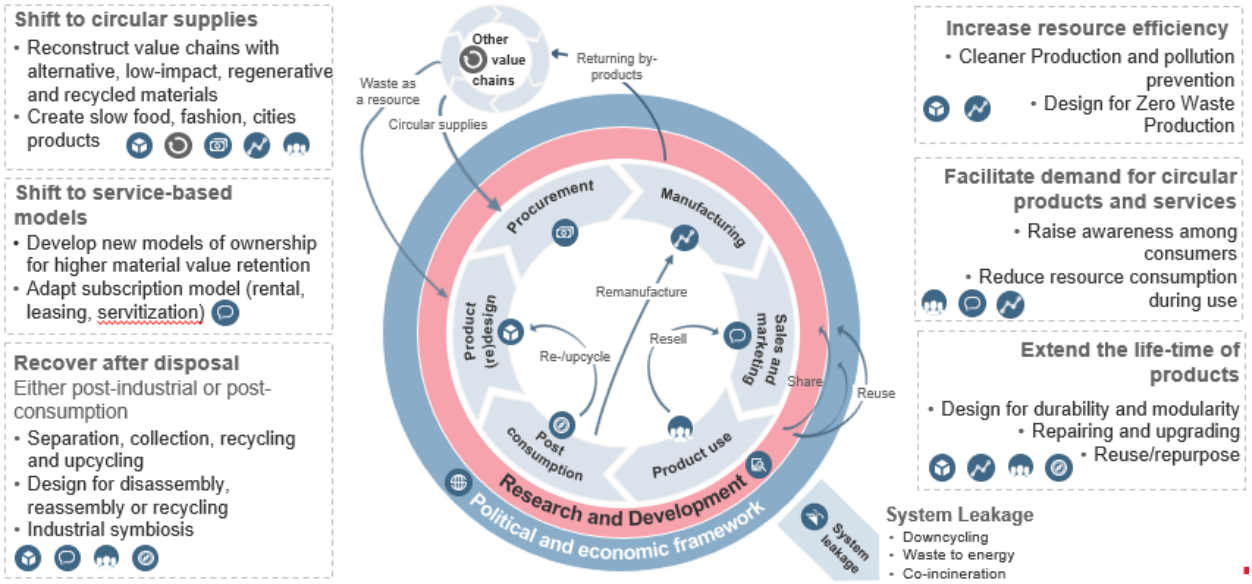
[2] Persson et al, "Outside the Safe Operating Space of the Planetary Boundary for Novel Entities" https://pubs.acs.org/doi/10.1021/acs.est.1c04158

[3]Global Circularity Gap Report 2023 https://assets.website-files.com/5e185aa4d27bcf348400ed82/63ecb3ad94e12d3e5599cf54_CGR%202023%20-%20Report.pdf

[4]Global Circularity Gap Report 2023 https://assets.website-files.com/5e185aa4d27bcf348400ed82/63ecb3ad94e12d3e5599cf54_CGR%202023%20-%20Report.pdf

[5]Global Circularity Gap Report 2023 https://assets.website-files.com/5e185aa4d27bcf348400ed82/63ecb3ad94e12d3e5599cf54_CGR%202023%20-%20Report.pdf

Figure 1. A comprehensive model of CE strategy and enabling policy instruments



(Source: Adelphi Survey GmbH)

First of all, one of the sectors that need to move to CE is the container, packaging and plastic market, and if the current pattern continues, it is estimated that the amount of plastic in the world will double in 20 years[6]. In addition to urban areas, reducing, collecting, transporting, and recycling waste, including plastic waste, has become one of the pressing issues in the tourism industry, which provides services such as food, accommodation, and cultural attractions in remote areas. The tourism sector is one of the main economic sectors of the countries of the world (it accounted for 10.4% of the global GDP before the COVID-19 pandemic), but energy and water consumption, waste, uncontrolled wastewater discharge, and greenhouse gas emissions (8% of total greenhouse gases) and the negative impact on the environment is increasing[7]. In the future, the consumption of natural resources (water, food, land, energy) in this sector will double in 25-45 years, and the amount of greenhouse gases emitted is expected to increase [8]by 131% by 2050.

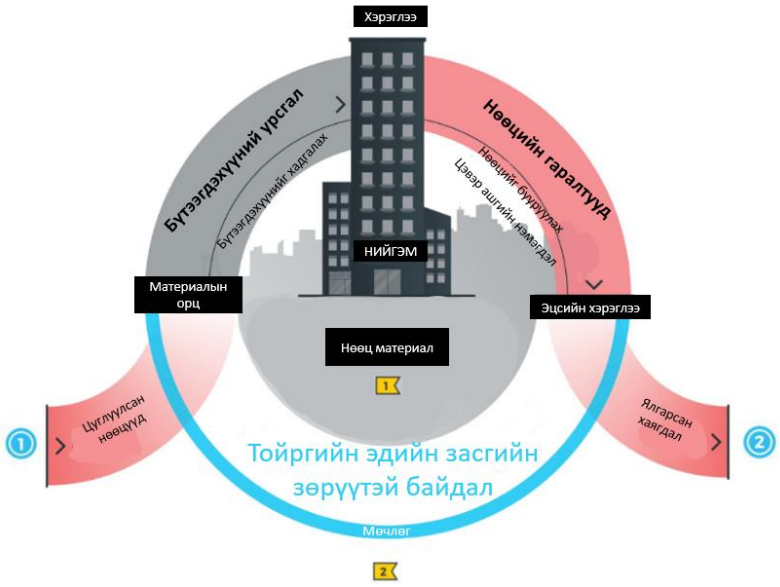
The purpose of this study is to determine the current experience and situation of the environmentally friendly and green economy of micro, small, and medium enterprises (MSMEs) that are producers and consumers of food, water, and packaging related to the tourism industry in Mongolia, and to identify differences and detect the situation, further, it is to study the policy, legal and institutional environment, stakeholders and their readiness for CE development, and to plan optimal policy recommendations and strategies. To assess the CE gap, it is important to identify the industry's supply and demand gap, or the need for CE adoption, based on the key elements that support it, and to propose optimal strategies to bridge the gap.

[6]Key Circular Economy Sectors: https://circularcitiesdeclaration.eu/cities-and-the-circular-economy/key-sectors

[7]"Applying principles of circular economy to sustainable tourism" ECE: https://unece.org/sites/default/files/2022-05/CEP-SS_Sustainable_Tourism.IP_.03.e.pdf

[8]"Applying principles of circular economy to sustainable tourism" ECE: https://unece.org/sites/default/files/2022-05/CEP-SS_Sustainable_Tourism.IP_.03.e.pdf

Figure 2. Discrepancy of feasibility studies



(Source: "Global Circularity Gap Report" 2018[9])

1.2. Outlook and trends in the tourism industry

The World Economic Forum has been conducting the "Tourism Competitiveness" survey since 2007, and international governments and business organizations are using the report as a key document to improve their competitiveness. It is an index that ranks the countries of the world according to a total of 112 indicators with 14 areas divided into 4 main groups: 1) Business environment, 2) Tourism law and regulation, 3) Tourism infrastructure, 4) Environment and cultural resources.

According to the report, Mongolia's competitiveness index has improved in recent years, moving from 102nd to 93rd place.

Table 1. Competitiveness of tourism

Years	Global position	Occupancy in the region	Sub-indexes							
			Competitiveness of the business environment		Competitiveness of the legal framework		Infrastructure competitiveness		Competitiveness of cultural and natural resources	
	Place	Place	Place	Point	Place	Point	Place	Point	Place	Point
2019	93 (140)	17 (22)	66	4.9	113	4.0	111	2.4	62	2.5
2017	102 (136)	20 (22)	67	4.87	92	3.7	115	2.57	70	2.29
2015	99 (141)	18 (23)	67	4.7	88	3.7	108	2.54	76	2.14

Source: World Economic Forum "The Travel & Tourism Competitiveness Report" 2015, 2017, 2019

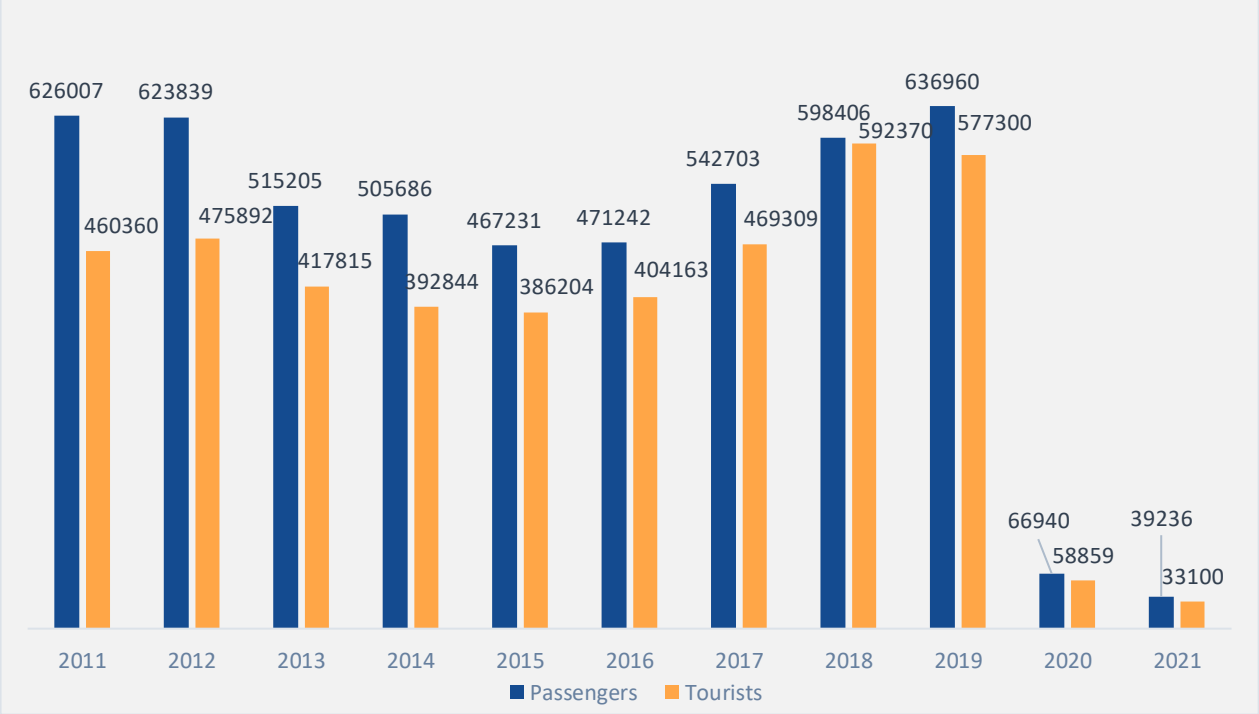
[9]Global Circularity Gap Report 2018 https://www.legacy.circularity-gap.world/2018-report

When broken down by sub-indices, the competitiveness of the business environment is relatively good, including price competitiveness. (Forum, The Travel&Tourism Competitiveness Report, 2015, 2017, 2019)

When the World Economic Forum published its Tourism Competitiveness Report 2019, the growth of the tourism industry was reaching new highs. But two years later, it looks completely different. This means that it is one of the sectors most affected by the COVID-19 pandemic. Industry analyses show that tourism has begun to recover, although not at the same pace around the world. However, there are still limitations, such as the war in Ukraine. In order to support this industry and avoid the aforementioned decline, based on the experience of the last 15 years of the World Economic Forum, the Tourism Competitiveness Index has been revised and defined as the "Tourism Development Index 2021". It includes 112 indicators with 17 directions divided into 5 main groups. According to this index, Mongolia ranks 84 out of 117 countries (Forum, The travel & Tourism Competitiveness Report, 2022).

Both the number of foreign nationals and tourists visiting Mongolia showed an upward trend from 2015 to 2019, but due to the epidemic, in 2021 and 2020, it dropped sharply to one-tenth of the 2019 figure.

Figure 3. Number of foreign passengers and tourists



Summarizing the results of the research conducted by JICA in 2021, as of 2019, China accounted for 30% and Russia for 25% of the foreign tourists who visited Mongolia, and citizens from these two countries bordering Mongolia together accounted for more than 50% of the total. If we add the tosurists from South Korea, which is in third place, these 3 countries together account for more than 70 percent of the total.

Regarding seasonal differences, by country, France, Korea, and Germany have a higher percentage of visitors for "leisure/travel" and a lower percentage of visitors for "business/work." On the contrary, there is little seasonality in the trips of Russian and Chinese citizens, who have few travellers for "on vacation/travel".

The period of foreign tourists' visit to Mongolia is highly dependent on the season, while the tourists who came in the 2nd (April-June) and 3rd quarter (July-September) of 2019 accounted for 70% of the total number of tourists, while the 30% came in the winter 1st (January-March), fourth quarter (October-December).

Comparing the results of the "Tourism Industry Situation Survey" organized by the Ulaanbaatar City Tourism Department in 2015, "SICA" LLC in 2018, and "Bank of Mongolia" in 2019, the majority of foreign passengers come for tourism and business purposes.

Table 2. Reason for coming to Mongolia, %

	Questions	Bank of Mongolia (2019)	SICA LLC (2018)	Ulaanbaatar City Tourism Department (2015)
1	Tourism purpose	72%	71.4%	85.3%
2	Officially	10%	19.6%	8.1%
3	Visit friends	6%	7.1%	9.4%
4	Studying at school	3%	1.8%	0.8%
5	Others	3%		3.8%

According to "Bank of Mongolia" research, 76% of all travellers stay in Mongolia for up to 14 days, and the remaining 24% for 14 or more days. According to the research of "SICA" LLC, foreign tourists spend an average of 17 days in Mongolia. Also, when determining the average days by region, it was estimated that an average of 6 days is spent in the Khuvsgul and Arkhangai regions.

Figure 4. Duration of the trip, %

In addition, tourists who book a trip through their own country's travel agent spend 2,187 US dollars, while tourists who contact a Mongolian travel agency pay an average of 2,048 US dollars. The cost includes cashmere goods, handicrafts and souvenirs purchased by the citizen. On the other hand, tourists who organized their trip without buying a travel package spent an average of 1,658 USD or less. It includes:

- 421 for transportation costs,
- 400 per apartment,
- 319 for the purchase of goods,
- **246 in food,**
- 272 US dollars were spent on other services.

From 1990 to the end of the third quarter of 2020, a total of 123 countries invested 28.8 billion US dollars in Mongolia. About 14,900 foreign-invested enterprises from 123 countries have been registered. Out of this, the investment in the tourism sector is 0.3% or 84 million US dollars (433 enterprises) (JICA, 2021).

1,691.7 billion MNT was invested in the tourism industry in 2017, which is 26.4% of the total investment (US$694.8 million). Although this rate decreased by 1.4% in 2018, it will increase by 4.6% in the next ten years and will reach 2,605.7 billion MNT (1,070.1 million US dollars) by 2028 (WTTC, 2018).

As of 2019, the tourism industry accounted for 6.7% of GDP and 7.2% of employment, with a total income of 1.8 trillion MNT (approximately 670 million US dollars), showing that it is an important sector of

Mongolia's economy[10]. Within the framework of the comprehensive ten-billion-dollar plan to intensify economic recovery after the COVID-19 pandemic, protect health, and restore the economy, the goal was to restore the tourism sector. In addition, Mongolia has declared 2023-2025 as the "Years to Visit Mongolia" and aims to increase the number of tourists to one million.

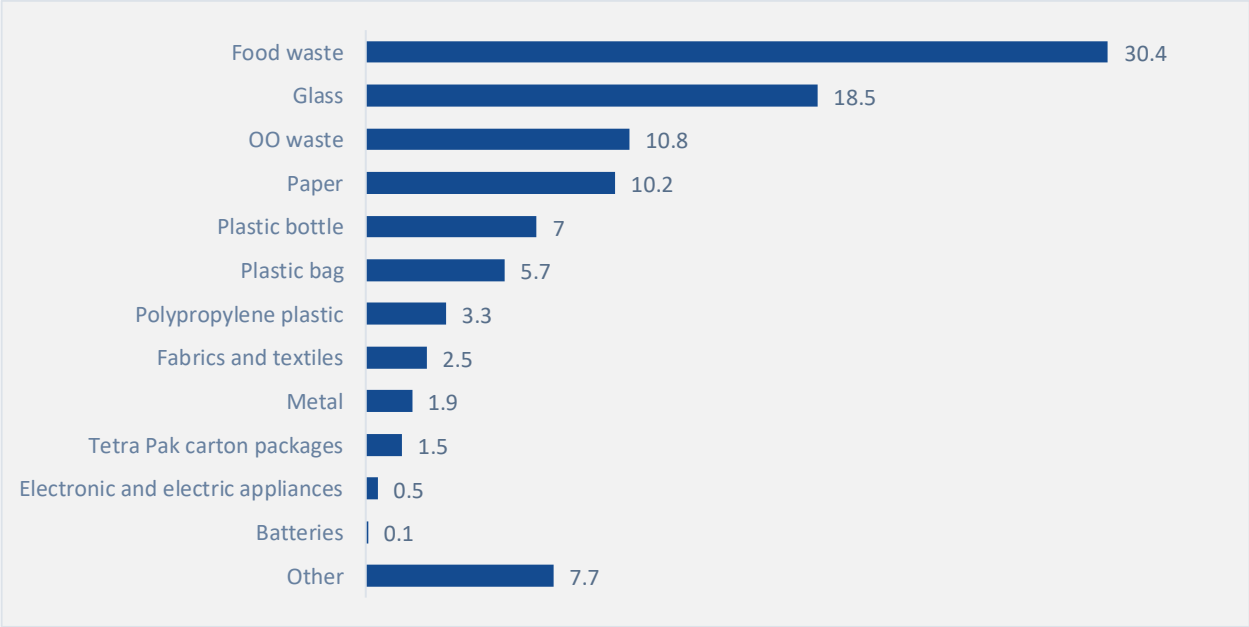
Along with revitalizing the sector and turning it into one of the main sectors of the economy, it is necessary to align it with the green development goals of the "New Revival Policy" and "Long Vision-2050" policy. Therefore, determining the environmental impact of the sector and intensifying the green recovery is consistent with the long-term development policy.

In line with this, the amount of waste generated by the tourism industry is estimated. For example, 1.4 million tons of the 2.2 million tons of secondary raw materials produced annually in the country are from Ulaanbaatar. 3-5 % of total waste, 8.9 % in Ulaanbaatar city is being recycled. However, 6% of plastic waste is recycled (Environmental Information Center, 2017).

As of 2021, there are 40 waste recycling plants, more than 160 separate processing points, and more than 1,500 employees. The recycling industry is statistically divided into two parts: plastics and plastic products, and the figures are aggregated. As of 2020, the production volume of the industry is 14.1 billion MNT, and the sales volume is 15.5 billion MNT, which is a double decrease from the previous year (Ministry of Agriculture, 2022).

58.2% of the total waste is generated locally and 41.8% from Ulaanbaatar. Considering the structure of waste emitted from the city, the following indicators can be seen.

Figure 5. Ulaanbaatar waste composition (excluding ashes), %



Source: Ulaanbaatar City Household Waste Composition Survey, 2019

According to the study of household waste composition in Ulaanbaatar city, a Mongolian person emits an average of 521 g /person/day in summer and 1,038 g /person/day of waste in winter. By calculating the number of domestic and foreign tourists who travelled to Mongolia in 2019, the average number of days of travel, and the amount of waste produced per person per day, the total amount of waste produced by

10 https://ikon.mn/n/2cf1

tourists in one year was determined. For example, it was estimated that domestic tourists generate **2,484.14 tons** of waste and foreign tourists generate **4,041.10 tons** of waste in a year.

Table 3. Calculated based on 2019 tourist information

No	Tourist types	Number of tourists	Average travel days	Waste generated per day (in kg)	Waste generated by tourists (in kg)	Waste generated by tourists (tons)
1	Domestic	636,960	7.8	0.5	2,484,144	2,484.14
2	Foreign	577,300	14	0.5	4,041,100	4,041.10

If we classify the amount of waste generated by tourists in one year by type, it is 1,983.7 tons of food, 1,207.17 tons of glass, 456.77 tons of plastic bottles, 371.94 tons of plastic bags, and 215.33 tons of polypropylene plastic. Out of this, Mongolia does not have the technology and industry for processing food waste and glass. On the other hand, 8.9% of plastic bottles, plastic bags and hard plastic bottles are being processed. Also, one of the most pressing problems in the tourism industry is waste, including plastic, glass, and plastic bags.

Table 4. The amount of waste produced by tourists during their trip was calculated based on the data of tourists in 2019

No	Waste composition	Percentage of waste composition, %	Waste generated by domestic tourists (tons)	Garbage generated by foreign tourists (tons)	Total	Percentage of recycling, %
1	**Food waste**	30.4	755.18	1,228.49	1,983.67	**0%**
2	**Glass**	18.5	459.57	747.60	1,207.17	**0%**
3	OO waste	10.8	268.29	436.44	704.73	
4	Paper	10.2	253.38	412.19	665.57	
5	**Plastic bottle**	7.0	173.89	282.88	456.77	**40.65 (8.9%)**
6	**Plastic bag**	5.7	141.60	230.34	371.94	**33.10 (8.9%)**
7	**Polypropylene plastic**	3.3	81.98	133.36	215.33	**19.16 (8.9%)**
8	Fabrics and textiles	2.5	62.10	101.03	163.13	
9	Metal	1.9	47.20	76.78	123.98	
10	Tetra Pak carton packages	1.5	37.26	60.62	97.88	
11	Electronics and electrical appliances	0.5	12.42	20.21	32.63	
12	Batteries	0.1	2.48	4.04	6.53	
13	Others	7.7	191.28	311.16	502.44	
Total		**100**	**2,486.63**	**4,045.14**	**6,531.77**	

According to the survey of domestic travelers conducted by "MIRIM Consultant" LLC in 2022, 98.7% of all travellers are travelling between 6-8 months. The existing infrastructure and tourism service providers are not fully equipped to handle the travellers during this peak season. This situation is the cause of overloading and negative impact on the environment. Also, most domestic travellers **travel by private car, stay in tents**, and camp in non-designated areas, which is one of the main causes of waste generation.

1.3. The current situation of CE in the tourism sector of Mongolia

In this context, the current state of supply of CE for tourism, food, beverage and packaging industries is defined. In doing so, it is based on background information on how MSME policies and strategies, internal organization, and technology of these sectors incorporate CE concepts and principles, and how environmentally friendly solutions are implemented and adopted.

For example, according to the survey conducted among a total of 742 MSME entrepreneurs who provide food production, beekeeping, agriculture, retail, transportation, storage, and warehouse services[11], the experience of CE in Mongolia's agriculture, food and water industry sectors is mapped as follows.

- Food and beverage manufacturers lack experience in environmentally friendly activities, there are no goals, plans, and budgets for introducing this type of method, and key indicators for measuring CE have not been introduced.
- Among the MSME entrepreneurs in these sectors, there is a relative tendency to reject unnecessary, less economical, and environmentally negative purchases by placing specific requirements on the suppliers of raw materials and ingredients.
- Good internal implementation of maintenance and routine cleaning at appropriate levels.
- The technological ability to reduce the negative impact on the environment and society is weak, and the experience of redesigning and rethinking products is insufficient, especially among MSME entrepreneurs.
- Lack of experience in reuse, repurposing and manufacturing.
- Beekeeping is the most involved in waste collection, sorting and recycling system training and consulting services, followed by food and water and beverage manufacturers.

Thus, due to the lack of understanding of CE and lack of human resources, funding, and technological capacity to implement the principles of CE, companies that supply food, water, and packaging in the tourism industry, waste inevitably continue to come out of the services of this industry. Therefore, according to the current situation, the main strategy for waste reduction is the recycling of once-generated waste, which is the last step of the CE process, but it is not enough to sort, transport and dispose of waste in remote areas. Some of the tourist camps located far away from the soum center, under the supervision of a professional organization, dig deep pits in designated areas and dump their wastewater and waste there. However, it is common for solid wastes to be transported to provincial and sum centers without classification[12].

In the sense that tourism provides nature-based services, suppliers in this sector are more environmentally friendly than other sectors and aim to implement CE principles to some extent. Tourist camps in particular are constantly looking for environmentally friendly, low-waste and resource-efficient solutions. For example, some tourist camps buy from suppliers who recall water and beverage bottles on the principle of "rethinking" at the level of purchase. Also, at the beginning of the tourist season, travel agencies and companies that provide food and accommodation services conduct waste management training for all employees. On the other hand, the problem of waste depends on the behaviour of travellers and tourists, so awareness raising among the public is crucial. For example, the Ecological Police Service and the Japan International Cooperation Organization (JICA) jointly organized the "Arrival-Departure-Clean" campaign, which encouraged domestic travellers to travel without waste.

[11] "A detailed study of the agriculture, food and water industry sectors" 2022, Switch Asia & People in Need

[12] "Sustainable Tourism Development Research" 2021, JICA

1.4. Challenges in the tourism industry

According to the Ministry of Environment and Tourism's "Impact of the COVID-19 Pandemic on Business Sectors 2020-2021", Mongolia's tourism industry, especially the hotel and catering industry, has been affected the most, by 83%[13]. However, according to the research conducted by the Mongolian National Chamber of Commerce and Industry, during the pandemic, the income of tourism organizations decreased by 80%, hotels by 63%, tourist camps by 84%, and restaurants by 51%. As a result, the service provider has been burdened with many types of tax debt (real estate, personal income tax, business unit income tax, land payment, etc.). According to the Ministry of Environment and Tourism, about 70% of the sector is accounted for by MSMEEs, which indicates that they are facing certain difficulties in reviving their activities with their resources[14].

According to the "World Sustainable Travel and Tourism Council", Mongolia's tourism industry is expected to gradually recover in the coming years, with an annual growth rate of 5.5% from 2021 to 2030 [15]. However, the results of many studies have shown that following the changes in nature and climate, there are certain changes in the interests and attitudes of tourists. The impact of this change has been accelerated by the COVID-19 pandemic. For example, in the Sustainable Tourism Development Report, the forecast of the spread of COVID-19 shows that this situation will continue for some time and may have a positive impact on people's travel habits in the future [16]. It further mentions that the industry is connected with concepts such as eco-labels and sustainability, and tourists are also becoming more important to them.

However, as mentioned above, most of the entrepreneurs in this sector are not only small and medium-sized enterprises but also face certain challenges in introducing the possibilities of CE to meet such future needs and interests of tourists.

As a result of the readiness assessment research conducted within the framework of this consulting service for empowering micro, small and medium enterprises in the direction of CE and green business, it was found that the following problems are the most faced by entrepreneurs in adopting CE.

Table 5. The most common challenges in implementing CE in business

No	Barriers to implementing CE in business	Percentage
1	Lack of economic and financial resources and limited access to support	59.0%
2	Lack of investment	52.0%
3	Availability of information related to recent developments in eco-friendly technologies and global, regional and national trends in CE is limited	49.5%
4	the feasibility study, design, strategy and solutions for its implementation	46.3%
5	Information related to CE, its implementation design, strategies and solutions are very poor	44.0%

Source: 2023 research to determine the needs of small and medium-sized enterprises in the direction of energy efficiency and green business

[13] STRATEGIC PLAN FOR THE RECOVERY OF TOURISM Inbound Tourism 2022-2024

[14] Mongolia Data Collection Survey on Sustainable Tourism Development in Mongolia Final report

[15] STRATEGIC PLAN FOR THE RECOVERY OF TOURISM Inbound travel tourism 2022-2024

[16] Sustainable tourism development desk review, 2020, Mongolian sustainable finance association

Among the top 5 most pressing problems, i) related to finance and investment, ii) poor access to knowledge and information about CE, and iii) related to the policy environment can be summarized. This is consistent with the results of research such as "Detailed study of the agricultural food and water and beverage industry" conducted within the framework of the Switching on the Green Economy (SOGE) project, which has been funded by the European Union through its SWITCH-Asia programme. The following diagram shows this group of problems in detail.

Lack of finance and investment:

According to Resolution No. 113 of 2020 of the Government of Mongolia on "granting low-interest loans to MSME entrepreneurs from the MSME support fund", low-interest loans are provided from the fund of 50 billion MNTs. The Ministry of Food, Agriculture, and Light Industry approved the general requirements for MSMEs who can get low-interest loans in 2022 and selected projects through the MSME development fund and the provincial Department of Food and Agriculture. At present, loans with a three-percent interest rate totalling 12.2 billion MNT are granted. In addition, the Ministry of Food, Agriculture, and Light Industry provides discounts, subsidies, VAT, customs tax, and certain percentage exemptions from income tax mainly to grain, vegetable farming, and animal husbandry sectors. On the other hand, relatively small discounts and incentives were approved in the packaging and food industry.

Also, Mongolia's long-term development policy document "Vision-2050", "2020-2024 Action Program of the Government", and the "National Program for Reducing Air and Environmental Pollution" stipulates the introduction of environmentally friendly green loans, financing products and services, the support of efficient and advanced green technologies with economic incentives, and the creation of a system for granting loans to green entrepreneurs on preferential terms. Within the framework of this policy, the "National Committee for Environmental Pollution Reduction" has been working with some commercial banks to "support the creation of green loan products and provide subsidies to reduce loan interest costs" since 2019. Within the framework of the program, in 2022, a total of 34 types of green loan products have been issued to citizens and enterprises at an annual interest rate of 2-3% for citizens and 8% for enterprises through contracted banks. The impact of these financing policy instruments on promoting a green recovery needs to be further explored.

Lack of knowledge and information about CE

According to the survey, only 6.5% of business owners in the target sector "know well about CE" and 8% "heard about it", and most of them have a limited understanding of waste management. Although the results of the survey show that business owners have a high interest in implementing CE in their business operations, they do not know where and how to start due to a lack of understanding and knowledge about it. Also, it is affected by the notion that it requires a lot of financial resources and current expenses, which hinders taking concrete steps.

In addition, although there is a high interest in applying internal and external best practices and opportunities to their work to get a more realistic understanding of the CE model, the sources of knowledge and information about this are not clear and accessible. For example, more than 3,000 people work in more than 57 factories active in the field of packaging throughout Mongolia, and they produce goods worth about 150 billion MNT per year. It accounts for about 60% of the total domestic production market. It is estimated that Mongolia needs 520 billion MNT of packaging per year. However, 70 percent of packaging needs are met by imports and 30 percent by domestic production [17]. Also, 20 waste collection and recycling

[17] https://www.mofa.gov.mn/home

factories are operating. However, due to the lack of information about these productions and services, there are limited opportunities for cooperation and improvement of waste management with business owners in other sectors operating in this field (except for food and liquid food, especially in the tourism sector).

Weak policy environment to support CE

Mongolia plans to reduce greenhouse gas emissions by 22.7% by 2030 and by 12.3% in the near term in its national contribution target for the implementation of the Paris Agreement. In addition, the "Vision 2050" and medium-term policy documents issued in connection with this policy document include specific CE-related provisions and activities.

Although these goals and activities can be used as a tool to support CE, the indicators are currently unclear and the regulatory environment has not yet been formed, indicating that there are issues for further improvement and attention.

According to Resolution No. 290 of the Government of MU, dated September 27, 2017, "Procedures for rewarding citizens, enterprises, and organizations that have introduced environmentally friendly and advanced methods and technologies" were approved, thereby increasing sales, cooperation, and financial resources. It is stipulated to issue "Eco badge" and "Green certificate" to business enterprises operating in the field of environment-friendly and reducing the negative impact of sources. Following the above resolution, by the end of 2021, 54 billion MNT taxable income has been granted to 16 enterprises. This list is dominated by renewable energy equipment and includes equipment for air exchange and heating purposes, and 1 equipment directly related to the target industry, which is a complete incinerator for waste at a temperature above 10,000 degrees Celsius.

In addition, the "Law on Support of Small and Medium-sized Enterprises and Services"[18] stipulates that SMEs and service providers should be deregistered if they are found to have used technologies and materials harmful to the environment or caused ecological damage. It also stipulates that the government should support the transfer and localization of technical and technological progress, and the introduction of scientific and technological research results into production, taking into account the scale, stage of development, the impact on regional development, and the ability to access foreign markets.

In conclusion, it can be observed that few provisions and tools to support CE are mentioned in the policies of SMEs and service providers. In the "National Voluntary Report" that Mongolia submits to the United Nations, it is mentioned that no progress has been made in recent years in terms of reducing the negative impact of production and activities on the environment. Furthermore, the provisions to support CE were not included in the MSMEs Support Policy and its requirements.

There are no special tax exemptions or incentives from the government for activities such as waste collection, transportation, and recycling. Problems such as weak coordination and cooperative management between government agencies, the private sector, and professional organizations can be mentioned in terms of waste generation reduction areas.

The following chapters of the study will elaborate on these issues.

[18] Law on Support of Small and Medium Enterprises and Services. Link: https://legalinfo.mn/mn/detail/14525

2. POLICY ANALYSIS

The primary goal of the policy analysis is to determine the alignment of the government's policies and development goals in the tourism sector, especially the food and packaging sectors, with the CE approaches and to provide general information to decision-makers by identifying and studying CE enabling policy instruments. Additionally, the report will highlight issues overlooked in the policy documents and will serve as foundation for the further project activities, such as the recommendation for circular development of the target sectors and National level policy dialogue, which will be performed on Component 3 of the project.

Table 6. CE framework for policy analysis

№	Criteria		Detailed range
1	Shift to circular supplies	**Resource efficiency**	1. Provisions requiring, encouraging and supporting the selection and use of low-impact, reusable (clean, non-toxic, long-lasting, durable) raw materials that meet CE principles. 2. Whether the norms and scope have been established to prevent environmental pollution by reducing organic and chemical substances, waste, water waste, electricity, raw materials, etc. per unit (cubic meter, size, product, and sales income). 3. Dedication to resource efficiency. For example: presence of enterprises, related rules and requirements in the target sector from 200 energy conservation designated consumers.
2	Increase resource efficiency		
3	Extend the life-time of the product		1. Provisions, clauses, and regulations for the prohibition, restriction, and taxation of utilities, materials, and products characterized by their short-term, single-use, significant non-biodegradable waste generation. Conversely, implementing comprehensive and well-conceived policies aimed at encouraging the multiple uses (of packaging, insoles, and household products, etc.) 2. Presence of initiatives and supports for reusing efforts. 3. Suggestions for extending the durability of objects (e.g. evaluating heat loss in buildings within the specific sector and enhancing their longevity through insulation and maintenance.) 4. Presence of a legal framework endorsing collaborative ownership, ordering, and leasing models (e.g., rentals, leases, services) in various sectors. For instance, evaluating the feasibility of collective ownership of electric transformers as a cost-effective and resource-efficient alternative to connecting to centralized power lines. Additionally, exploring plans for establishing robust renewable energy infrastructure connecting different facilities.
4	Shifting to service-based model		
5	Recovering after disposal	**Pollution control**	1. Support for minimizing processing and operational waste while promoting environmentally friendly production practices: - The existence of enterprises operating in the target sector that necessitates the building of pre-treatment plant for water before sending it to the central treatment plant, as well as the applicable norms and criteria - The existence of enterprises operating in the target sector that cause high levels of air pollution, as well as the applicable norms and criteria 2. The conduct of assessments and comparisons concerning the preservation of natural wilderness. 3. Policy provisions aimed at bolstering and incentivizing waste recycling initiatives within the target sector, encompassing tax benefits and logistical infrastructure support. For instance, endorsing comprehensive logistics for recycling facilities handling glass, cans, and plastic waste, alongside appropriate tax credits and incentives for recycling infrastructure and equipment. 4. Mandates and incentives promoting the implementation of efficient separation and collection systems for food, as well as food and packaging waste.

6	Facilitate demand for the circular products and services	**Green Transformation**	Increase demand 1. Green public procurement 2. Improvement of the understanding and knowledge of the stakeholders of the target sector and general public about the CE 3. Green financing policy supporting the CE 4. A policy mandating regular reporting of environmental impacts 5. Policies related to CE principles measurement, results and impact reporting Increasing supply 1. Foster innovative technologies, methods, industrial patents, products, business models, and startups that enhance waste enrichment, reuse, and minimize the flow of waste reaching its final disposal point.

Development and policy objectives

Having gained approval in Resolution No. 52 of the general session of the Great Khural of Mongolia on May 13, 2020, "Vision -2050" became the long-term development policy of Mongolia. The document provisioned activities in key sectors such as tourism, food and agriculture in line with the Sustainable Development Goals (SDGs). Within the policy framework defining the Mongolian vision of becoming one of the leading countries in Asia in terms of social development, economic growth, and the quality of life of its citizens by 2050, the Mongolia's five-year development guidelines for 2021-2025 was approved by Resolution No. 23 of 2020 of the Great Khural of Mongolia. Accordingly, the Action Plan of the Government of Mongolia for 2020-2024 was approved by Resolution No. 24 on August 28, 2020. The contents of green development and CE included in these policies and planning documents scheduled for implementation from 2021 to 2030 are summarized below, grouped by target sectors.

Table 7. Key objectives and actions related to green development and CE in development policy documents

Key objectives and activities related to green development and CE			
Development policies	**Vision 2050**	**Mongolia`s 5-year Development Guidelines for 2021-2025**	**Action Plan of the Government of Mongolia for 2020-2024**
Actions and objectives regards to Resource efficiency	Action 6.1.1. Improve regulations for the valuing of ecosystem services, update their ecological-economic values, and educate the public about ecosystem services, their value and importance. Action 6.3.1. Complete metering of water consumption and improve the efficiency and economy of water use. Action 6.3.4. Support the development of wastewater treatment and reuse of treated water.	6.4.4. To reduce GHG emissions by 12.3%.	Objective 5.1. Ensure a healthy living environment for citizens through environmental protection, appropriate use of natural resources, introduction of advanced techniques and technologies, and reduction of environmental pollution and degradation 5.1.12. Reduce GHG emission by 12.3% by implementing climate change mitigation, adaptation, efficient and inclusive green development policy. 5.1.3. Exercise integrated management practices to prevent pollution and depletion of water sources, fully resolve the issue of drinking water supply in the capital city and use treated and gray water for industrial purposes.

Actions and objectives regards to pollution prevention and reduction	Action 6.1.5. Strengthen the infrastructure and material base of protected areas and implement appropriate protection management. Action 6.4.22. Extend and newly build wastewater treatment plants and increase the number of people provided with sanitary facilities that meet the requirements of standards.		5.1.2. Carry out a risk assessment of the pollution of Khuvsgul lake ecosystem and pullout vehicles and machineries submerged in the lake with the support of international organizations. 5.1.4. Reduce soil pollution in ger districts and tourism regionsthrough implementation of "Eco Toilet" program. 5.1.9. Promote environmentally friendly and efficient consumption and production and establish recycling plants for solid waste, energy generation and recycling of hazardous waste.
Green transition	Action 6.4.1&4. Promote environmentally friendly, efficient use and advanced green technology through economic incentives. Introduce resource efficient, environmentally friendly and advanced techniques and technologies to reduce pollution and waste, and support cleaner production and sustainable consumption through economic incentives. Action 6.4.6. Shift gradually public procurement to green procurement and create a private sector support system.	6.4.5. To increase the share of government green procurement to 20%.	
Key objectives and activities related to the CE in the food and packaging sector			
Green transition	Objective 1. Comply to the principles of green economy in agricultural production, strengthen capacity to adapt to climate changes and risks, and develop smart systems based on insurance, registration and information. Action 6.4.5. Introduce MNS ISO14000 family standards of environmental management, maintain and strengthen the green certification system, and prove good practices of production and consumption.		3.3.15. Increase financing for environmentally friendly and low emission green projects based on public-private partnerships
Key objectives and activities related to the CE in the waste sector			
Development policies	**Vision 2050**	**Mongolia`s 5-year Development Guidelines for 2021-2025**	**Action Plan of the Government of Mongolia for 2020-2024**
Prevention and reduction of	6.4.2. Establish and mplement legal environment on eco-payments aimed at reducing waste	6.4.6. To increase waste recycling to 27%.	6.1.9. Upgrade solid waste management, provide households in ger districts with bins designed for ash storage and

waste and pollution	generation and recycling it for commercial purposes. 6.4.19. Develop waste egregation at the source and establish environmentally friendly waste recycling and waste-to-energy plants. 9.2.29. Carry out technological innovations in services of sorting, collection and transportation of waste, develop appropriate standards, transfer to recycling plants, clean and rehabilitate centralized waste disposal sites. 9.2.31. Diversification of small and medium-sized industries recycling raw materials, technological innovation and development, production with zero-waste technology will be created.	6.4.7. To resolve the problem of solid waste in aimag centers and build waste recycling factories 9.2.2. To introduce technological innovations in waste sorting, collection and transportation services and create a system to support low-emission and waste-free consumption.	establish recycling plants for all types of waste. 6.2.10 Resolve the solid waste issues at aimag and soum centers and establish recycling plants stage by-stage.
Key objectives and activities related to the CE in the tourism sector			
REsource efficiency	8.2.3. Establish recreation and recovery tourist complexes based on paleontology and rare animal parks, historical, religious and cultural heritages, natural landscape and spa resort in the Gobi aimags. 6.1.8. Develop eco-tourism based on the resources and capacity of protected areas.		
Actions and objectives regards to green transition		8.2.3. . To increase income of citizens and enterprises by implementing sustainable tourism projects in Khuvsgul, Khentii, Arkhangai, Bayan-Ulgii, Uvs, Khovd and Zavkhan aimags.	3.4.1. Implement "Sustainable Tourism Development-I" project in Khuvsgul and Khentii aimags and "Sustainable Tourism Development-II" project in Arkhangai, Bayan-Ulgii, Uvurkhangai, Uvs and Khovd aimags within the framework of state policy of tourism development and increase incomes of local community and enterprises. 3.4.4. Increase the number of citizens and tourists to one million by improving tourism products, services, quality and standards, and increasing its competitiveness. 3.4.6. Develop tourism infrastructure in Bayan-Ulgii, Uvs, Khovd, Uvurkhangai, Arkhangai, Bayankhongor, Umnugovi, Dornod and Zavkhan aimags and set up service areas and complexes along the auto roads. Develop tourism in the Gobi region.

Key objectives and activities related to the CE in the MSME sector			
Development policies	**Vision 2050**	**Mongolia`s 5-year Development Guidelines for 2021-2025**	**Action Plan of the Government of Mongolia for 2020-2024**
Actions and objectives regards to green transition	4.5.5. Support and create a favorable investment environment for SMEs for them to create nature-friendly organic goods production based on nano, bio and green technologies and human intelligence. 3.3.17. Support MSMEs through state purchases, provide them with required raw materials and equipment, ensure human resources reserves, and create professional workers' database. 3.3.20. Increase financial remuneration and support for MSMEs and create an enabling legal environment. (Factoring etc)	Objective 4.5. To develop MSMEs through innovation and increase their productivity: 4.5.2. To create an environment for the cluster development of supply-and-sales chain for MSMEs	3.3.13. Introduce modern forms of financing for SMEs, and implement a policy to nurture and expand SMEs through business incubation services. 6.2.14. Create the most favorable business environment by setting up an infrastructure that supports trading and sales of local SMEs and enterprises

2.1.1 Data Collection and Monitoring, Analysis and Evaluation

To date, the release of official integrated reports and statistics pertaining to the execution of the 'Vision-2050' long-term development policy document has not been commenced. Below is the target level and the indicators of the policy document that directly aligned with the CE.

Table 8. Indicators directly related to the CE on Vision-2050

№	Indicators	Measuring unit	Base level (2018)	Target level		
				2025	2030	2050
1	Percentage of recycled waste	%	7.6	27	40	50
2	Percentage of waste regularly collected and properly disposed of in urban areas	%	25.6	52	64	90
3	Percentage of the government green procurement	%	-	10	20	50
4	Domestic material consumption per USD in GDP	kg/USD	15	10	6	3

The baseline and target levels of the 20 main indicators that represent the results of the medium-term policy document of Mongolia's Sustainable Development Concept-2030, approved in 2016 and repealed in 2020, are defined. In line with this, the National Statistics Committee prepared the possible indicators from these 20 basic indicators in 2015, 2016, and 2017 and made them publicly available. In a similar way, although there is no regulation to regularly measure and monitor the progress of the implementation of the Vision 2050 policy goals, the indicators of the Vision 2050 document 1 and some indicators of the SDGs calculated from the National Statistics Committee's environmental and economic account system are as follows for 2015-2021 reported.

Implementing the principles of the CE is one way to achieve the SDGs and research into which SDGs' goals are best addressed by CE practices found that SDG 6 (Clean Water and Sanitation), SDG 7 (Clean Energy power), SDG 8 (Decent Work and Economic Growth) and SDG 12 (Responsible Consumption and Production) mention that the SDGs can be achieved by localizing sustainable development practices.

Therefore, the indicators related to SDGs 7, 8, and 12 are left below and the macroeconomic situation of the SDGs is shown.

Table 9. Vision 2050, SDGs indicators measurement

Classifications	2015	2016	2017	2018	2019	2020	2021
SDG 7.2.1 Percentage of renewable energy in total final energy consumption	0.14	0.11	0.08	0.08	0.08	0.18	0.18
SDG 7.3.1 GDP, Energy efficiency measured by primary energy, GJ/million MNT	32.6	43.5	56.4	55	57.3	43.7	38.5
SDG 8.4.2 Domestic consumption of materials per GDP, kg/million MNT	9.6	10.1	9.6	8.9	8.6	9	9
SDG 12.2.2 Domestic consumption of materials per capita, tons	74.3	77.6	76	74.4	74.9	74	74.6
Energy capacity, GJ/million MNT	9.96	9.99	10.5	11.11	11	10.89	11.38
SDG 8.4.2 Domestic consumption of materials per capita, tons	74.3	77.6	76	74.4	74.9	74	74.6
SDG 8.4.2 Domestic consumption of materials, million tons	220.2	234.7	235.4	234.9	239.2	238.7	245
SDG 12.2.2 Domestic consumption of materials per GDP, kg/million MNT	9.6	10.1	9.6	8.9	8.6	9	9
SDG 12.2.2 Domestic consumption of materials, million tons	220.2	234.7	235.4	234.9	239.2	238.7	245
Vision 2050: Domestic consumption of materials per unit of GDP in USD, kg/USD	18.9	21.1	20.5	17.8	16.8	17.9	16

Furthermore, a comprehensive report regarding the execution of Mongolia`s 5-year Development Guidelines for 2021-2025 and the progress of Action Plan of the Government of Mongolia for 2020-2024, has not been developed. The MoF, MED and other relevant government agencies have provided assessments and feedback on the advancement of this year's objectives and initiatives within their respective domains.

Highlight 1. Green development policy

Within the framework of the Mongolia's five-year development guidelines for 2021 to 2025, there are green development policy which contains 20 projects and measures that was monitored and evaluated for the implementation and scored 67.0 percent. Also, in accordance to section 6.2.3.3 of the "Common procedures for monitoring and evaluating the implementation of policy documents and the activities of administrative organizations" highlighted that it is "necessary to intensify" the implementation.

2022 Monitoring and Evaluation and Internal Audit Report of the MED

2.2. CE enabling legal, policy, and regulatory environment and instruments

2.2.1. Intersectoral policy environment

2.2.1.1. Desk review

A comprehensive ten-trillion plan to protect health and restore the economy and Green Procurement

On February 17, 2021, the Government of Mongolia issued a 10-billion comprehensive plan to protect health and restore the economy in order to prevent and fight the spread of the COVID-19 epidemic and reduce the negative impact on society and the economy. The plan sets forth a total of 56 goals with 2 sub-

groups: protection of citizens' health and economic recovery. The document is summarized under the goals and implementation measures that correspond to the project target sectors as following:

Sector	Tourism	MSME	Green procurement
Objective	Entrepreneurs' financial challenges will be alleviated, fostering stability in their operations. Additionally, efforts will be made to enhance the human resource capabilities within the hospitality sector, leading to improved service quality and diversity. Intensified promotional campaigns for Mongolia on the international stage will be pursued, accompanied by in-depth market research. Furthermore, the development of value-added products and services for the tourism industry will be a priority.	The aim is to extend concessional loans to over 1,000 individuals and businesses, including self-employed individuals, micro-industry players, and service providers. Notably, it is intended that at least 50 percent of the borrowers will be women.	The increase in the total procurement of domestic goods and environmentally-friendly products.
Action plance	A 55.0 billion MNT loan will be granted to the operators in the sector for a period of 2 years from commercial bank sources, and the government will pay 7.0 percent of the total interest on the loan.	In the first 6 months of the pandemic, up to 20.0 million MNT will be provided from the Employment Support Fund, and a total of 7.4 billion MNT from the World Bank project at an annual interest rate of 7.56 percent until 2024. In the future, 24-month loan will be granted at 11% annual interest rate.	Actions will be implemented to promote domestically-produced goods that meet quality standards and possess conformity assurances through government procurement processes.

According to "Vision-2050," there is a gradual transition towards green procurement in government practices. As part of the Mongolia's five-year development plan from 2021 to 2025, a specific target has been set to raise the proportion of government green procurement to 20%.

Government procurement is regulated by the "Law on procurement of goods, works and services with state and local property assets". Also, this law consists of the Constitution of Mongolia, the Civil Code, the Law on Information Transparency and the Right to Information, the Law on Glass Accounts, and other legislative acts issued in accordance with this law.

Accordingly, the amendment of the law approved in March 2019 defines the concept of green procurement as follows.

> 5.1.28. "green procurement" means goods aimed at ensuring the stability of economical and efficient use of energy and natural resources, having no negative impact on the environment and human health, low GHG emissions and waste, adapting to climate change, and creating a green environment.

Also, when preparing the technical specifications or specifications of the goods, works, and services to be purchased, the customer must meet the following requirements.

11.1.1. The criteria for green procurement is to be based upon considerations such as energy and natural resource efficiency, economic viability, product quality, technical specifications, absence of adverse environmental and human health effects, minimal GHG emissions, and waste reduction;

Highlight 2. Green procurement

The MoF and MET implemented a Sustainable Procurement project with the support of the PAGE. Within the framework of the project, evaluation of the current state of the Government's procurement activities, preparation of proposals for amendments to the law, research of the main products, and an action plan for the implementation of sustainable procurement of the Government were developed. However this plan and recommendations were not approved.

Mongolia's sustainable consumption assessment report , Switch Asia Programme

Although the environment for green procurement is in place to some extent, the strategic plan of the Public Procurement Office published in 2022 does not include objectives and operational strategies related to sustainable and green procurement.

In addition, the MoF's development policy and planning document report did not measure and report the indicator to reach the 20% green procurement, however writing paper, printer ink and lightweight concrete blocks green procurement criterias are told to have made available to public on online. Yet, these criteria were not found in the electronic system of public procurement. Furthermore, the report state that "In 2022, information related to the implementation of green procurement will be released based on the ministries procurement activities reports."

Lastly, Procurement Department of the MoF is in progress of issuing green criteria for 11 products to support green government procurement, however the detailed information are unavailable as the regulations have not been approved. Therefore, the policy has the potential to be a CE enabling policy instrument, unless the criteria are not yet clear and the regulatory environment is not yet in place.

Environmental Target Program

The Law on Development Policy, Planning, and Its Management approved by the Parliament of Mongolia in 2020 indicates that there will be 7 development target programs to be implemented in the medium term or 10 years, one of which is the Environmental Target Program. According to the order No. A/38 of the Minister of Economy and Development, dated May 13, 2022, a sub-working group responsible for drafting the environmental target program was established, and on July 4, 7 target development programs were submitted to the Parliament. This target program is fully consistent with the 3 basic principles of the Economic Development Plan and is currently expected to be submitted after coordination and improvement with other target programs from the MED.

Table 10. Environmental Target Program objectives

Objectives	Funding needed (million MNT)	Criteria	Measuring unit	Base	Target level	
				2022	2025	2030
1. Maintain the balance of primary ecosystems and increase productivity.	177,273.0	Environmental Performance Index	Scoring	29.6	58.0	59.0
		Protected area yield/year	Billion MNT	289,000	372,000	413,000
2. Natural resources will be	8,949,139.8	Proportion of area covered by forests	%	7.9	8.7	9.0

restored and depletion will be reduced and appropriate use will be established.		Proportion of land affected by very strong and severe degrees of desertification in the total area	%	23.3	22.5	21.3
3. Protect water resources and increase economical and efficient use.	132,555.0	Amount of water used	Million cube meter	594.8	600.0	650.0
		Amount of the re-used water	%	10.0	15.0	30.0
4. Reduce air, water and soil pollution.	7,360,747.3	Urban areas with pollution exceeding air quality standards	Number	8.0	6.0	0.0
		The point is classified as very dirty and dirty according to the water quality index	Number	3.0	2.0	1.0
		A site with heavy metal contamination exceeding soil quality standards	Number	10.0	3.0	0.0
5. Contribute to international efforts to mitigate and adapt to climate change.	8,471,727.9	Reduction of GHG emissions	Million tonnes CO2e	25,800.0	12,300.0	22,000.0

Source: The Law on Development Policy

Table 11. CE enabling policy instrument -Government Green Procurement

"Procedures for rewarding individuals, enterprises, and organizations that introduce environmentally friendly advanced methods and technologies" has been approved by the Resolution No. 290 of the Government of Mongolia on dated September 27, 2017. Following the procedure, a list of 15 devices, such as air purifiers, energy-efficient heaters, etc., are exempted from taxes and value-added taxes,which was approved in 2018. Also, 18 enterprises that introduced environmentally friendly and advanced methods and technologies were awarded "Green Certificate" incentives by the MET. "Eco label" are awarded to the products and services of enterprises and organizations that have conducted activities aimed at reducing the negative impact on the environment, and "Green certificate" are awarded to citizens, enterprises and organizations that have introduced environmentally friendly advanced methods and technologies. As of now, there are no products with the Eco label. The policy also mentioned that citizens, enterprises and organizations that have received this label and certificate will be supported and encouraged as follows.

1.1. promotion of environmentally friendly advanced methods and technologies in the media, participation in domestic and international exhibitions;

8.1.2. nomination for national and international environmental awards;

8.1.3. financing through green credit fund and other local and foreign subsidized loans and investments;

8.1.4. Preferential participation in the purchase of goods, works, and services with state and local property funds;

8.8.1.5. Mediate cooperation with international institutions with similar advanced technologies;

8.1.7. Inclusion in the list of environmentally friendly techniques and equipment;

In coordination with the above-mentioned resolution, "List of environmentally friendly techniques and equipment for efficient use of natural resources, reduction of environmental pollution and waste" was approved by Resolution No. 468 of December 25, 2019 of the Government of Mongolia. As of the end of 2021, 54 billion MNT taxable income has been exempted from tax to 16 enterprises that was on the list. In detail, the list is dominated by renewable energy equipment, and includes insulation and heating equipment. Only one equipment directly related to the target

sector, a complete incinerator for waste at a temperature above 10,000C is included. Consequently, the policy is determined as CE enabling policy instrument supporting the green transformation.

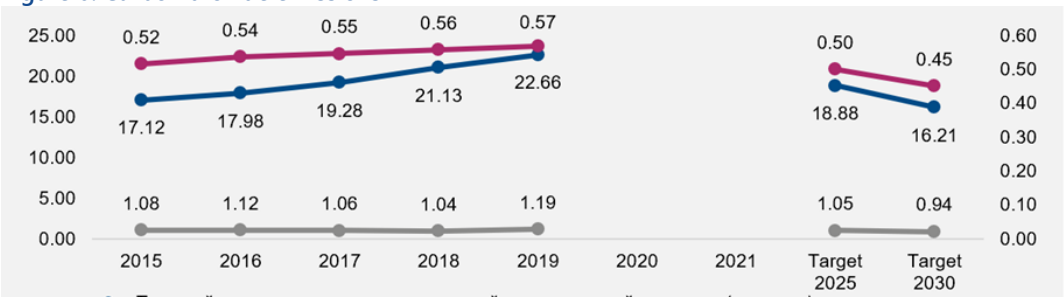
SME sector policy environment

Under the common Procedure for conducting trade and services, when establishing a market or shopping center in the capital, entities must assess their overall environmental impact. The procedure also states to support entities through policies and incentives if they have introduced environmentally friendly technologies and innovations in sales and services.

Under the Law on support of SME states to exclude SME from the register if they employ harmful technologies and materials for the environment or have caused ecological damage. The Law also stipulates that the governmental will support the transfer and localization of technical and technological advances, and the integration of scientific results and technological research in production, considering the scale, stage of development, the impact on regional development, and the ability to access foreign markets.

Consequently, the SME policies lack CE integration. In the "National Voluntary Report" that Mongolia reports to the UN, it is stated that no progress has been made in recent years in terms of mitigating the industrial and activity-driven environmental impact. When measuring the impact of economic and business activities on the environment by three indicators: carbon dioxide emissions per unit of GDP (million.tonnes) (blue), carbon dioxide emissions per production value (CO2 kg per 2015's dollar) (grey) , and carbon dioxide emissions from fuel combustion (CO2 kg per 2017's dollar) (pink), all three indicators have increased since 2015, signifying heightened adverse effects on nature and weather.

Figure 6. Carbon dioxide emissions



Source: International Energy agency

SME financing

In order to enhance exports, foster import substitution, improve competitiveness, drive innovation, stimulate entrepreneurship, and create employment, SMEs are eligible to secure loans from the Small and Medium Enterprises Development Fund directly or through commercial banks at 3% interest with duration up to 5 years, ranging from 100 million to 2.5 billion MNT depending on the type of organization. As of 2022, 156 loans with a total value of over 20 billion MNT were granted and 1,043 jobs were created, which is 2 times less than in 2019.

This MSME support policy and requirements do not include provisions to support CE.

2.2.1.2. Regional and national initiatives and projects

National Air Pollution Reduction Program

In 2017, Government Resolution No. 98 sanctioned the National Program for Reducing Air and Environmental Pollution, aligning with the Government's commitment to "reduce air, water, and soil pollution in cities and towns and implement proper waste management." Within the program framework, measures related to the reduction of air pollution, soil pollution, and waste pollution are to be implemented.

Also, the program operates in accordance with a two-stage evaluation proces. The program's initiatives are organized into three primary segments based on their focus on addressing air pollution, soil pollution, and waste management. Despite its national scope, most of the activities are planned to be implemented at the urban and household levels. The activities included in the measures related to the target sectors and enterprises are summarized below:

A significant portion of the total budget is spent on measures related to **air pollution**. The scope of the study was concluded because the permit holder for the use of a large stationary source of air pollution with high levels of air pollution was independent of the organizations in the target sector of this study.

Among the provisions related to **soil pollution,** there are no provisions directly related to the activities of enterprises. However, enterprises can access loans related to soil pollution reduction through the program's discounted green loan fund.

In relation to **waste** (4.2.11), waste producers, importers and distributors are responsible for reclaiming items such as containers, packaging, batteries, accumulators, daylight glass, worn tires, and used oil and entities recycling those reclaimed wastes are to be incentivized. Additionally, (4.2.14.) entails the provision of setting and implementing new standards aimed at reducing environmental pollution and waste from production and services. This involves the integration of environmentally friendly and advanced techniques and technologies, and economical and efficient utilization of natural resources.

Within the framework of the program, the annual action plan is approved by the resolution of the National Committee on Reducing Air and Environmental Pollution (NCRAE) and the committee itself is responsible for managing and monitoring the implementation, and it is stipulated that the annual implementation report will be submitted to the government.

In the publicly accessible 2019 plan of the NCRAE, a budget of 73 billion MNT was allocated for air pollution reduction, which constitutes a significant portion of the total budget of 77 billion MNT. Comparatively, limited efforts were directed towards addressing environmental pollution stemming from soil and waste. An internal audit conducted by the MET's monitoring and evaluation department on the work performance of 2021, reported that approximately 51.5 billion MNT was expended on air pollution mitigation initiatives including discounted electricity night tariffs, support for enhanced fuel production, and the installation of smoke filters in thermal plants and low-pressure furnaces. Conversely, 1 billion and 5.3 billion MNT were designated for efforts targeting soil pollution and waste respectively and these were the construction of storage buildings for temporary storage of hazardous waste in 6 provinces and the renovation of 2,850 pit latrines with improved sanitary facilities that do not penetrate the soil.

Table 12. CE enabling policy instrument - Green Loan Fund

This program is crucial to CE in which the "Green Loan Fund" specified in Section 4.2.17 is greatly accessible to MSMEs and offers low-interest loan products that are environmentally friendly, reducing air and environmental pollution and heat loss, and supporting the purchase of energy-efficient products and electric heaters to individuals, private sector enterprises. On the other hand, it can be considered as an important step to meet the need for suitable financial solution to combat air pollution.

When choosing a financial institution to grant a discounted loan, the Bank of Mongolia and the working group of the air pollution reduction program work together. Agreements are established with Khan Bank, Xac Bank, and the State Bank, encompassing the determined the list of products to be granted with green loans and the amount of interest to be discounted or paid from the budget. The subsidy agreement has a term of 1 year and expires in November-December of each year. After the termination of the contract, according to the law on the budget, the subsidy is withdrawn to the state treasury within December, and the contract extension process begins in January of the following year. In 2021, the subsidized period spanned for 5months (April-May, August-October), and in 2022, funding spanned for 7 months from June till December.

In terms of budget allocation, the program assigned 3 billion MNT in 2019 and 2 billion MNT in 2021 from the state budget. Up to 2022, the program has consistently provided 12 types of loan products for citizens and 22 types of loans for enterprises have been offered for 4 consecutive years.

For loans dedicated to soil pollution reduction endeavors like bio-toilets and small-scale treatment facilities, the annual interest rate stands at 2%. By 2022, 24 citizens and 1 enterprise have received loans for small-scale treatment facilities, with an additional 13 citizens obtaining loans for bio-toilets. Other loans extend 8% annual interest for enterprises and 3% for citizens. Notably, comprehensive information regarding the number and outcomes of granted loans has not been aggregated and reported. The performance of the green loan fund in 2021 was as follows.

Table 13. Green loan program result for 2021

Results of the 2021 green loan program	
Total loan amount (million tugrug)	4,823
Number of borrowers	353
Interest subsidy amount (million tugrug)	1,140
Average loan amount (million tugrug)	56

The green loan discounted interest rate is an economic policy instrument enabling CE green transformation policy.

2.2.1.3. Analysis

Strength	Weakness
The initiative to award Green Certificates and Eco-labels was implemented and certain results have been achieved by approving Procedures for recognizing individuals, enterprises that have adopted environmentally friendly advanced methods and technologies. A list of 59 techniques and equipment that are eco-friendly, efficient use of natural resources, and reducing environmental pollution and waste, is approved and is benefitting tax discount.	To foster business growth and employment, the long-term and medium-term documents do not include special provisions supporting green development policies, but include subsidized loans and support for innovation and environmentally friendly advanced techniques and technologies.
Policy gap identified	

The environmental target program has effectively integrated comprehensive CE components, yet the fact that it has not been approved so far is delaying the activities of the industry supporting CE.

Transparency is lacking concerning the operations of the NCRAE (the 2020-23 plan, the implementation report reported to the government and the implementation evaluation report of the 1st phase completed in 2019, etc.)

While policies aimed at supporting SMEs and economic instruments like discounted loans are being effectively implemented, there appears to be a gap in providing incentives to encourage the adoption of CE practices in a progressive manner (green production, waste management, etc.).

2.2.1.4 Recommendations

In this section of the report, the intersectorial policy and legal environment and regulatory procedures that can be linked to CE, green development are considered.

- Ensure transparent reporting of the results and statistics of subsidized green loan fund's green loan impact under the NCRAE's framework; Enhance the green loan accessibiliy, boost competition by including more commercial banks and explore the potential of extending green loans through a few NBFIs; Ensure the sustainable operation of the green loan subsidy fund and exploring the feasibility of diversifying funding sources to increase the amount of financing;
- Direct efforts achieve the goal of 20% green procurement objective included in the development documents by developing green product criteria for green procurement guidelines, procedures, or services and small procurement documents, with the participation of industry experts, civil society and the private sector;
- Collaborate with the private sector, professional associations, and citizens to create a green labeling ecosystem that conforms to market principles. Develop the ecosystem in accordance with both national and international standards, ensuring it gains recognition among industry participants, and is transparently evaluated and reported.

2.2.2. Tourism policy environment

2.2.2.1. Desk research

The Government of Mongolia has announced 2023-2024 as the "Year to Visit Mongolia" with the aim of promoting Mongolia abroad, reviving cultural and tourism activities, improving the economy, and increasing foreign investment. Various policy mesures are being taken, such as identifying tourism as one of the economic priorities of the sector, amending the tourism package law, and implementing sustainable tourism development projects. The policy document for the development of toursim was developed and approved by the Government of Mongolia in 2019 by Resolution No. 333, it contains a few content related to the CE, such as the creation of low-interest "Green Loans" to support tourism operators to engage in environmentally friendly activities, and there is currently no green loan program specifically for the sector. As the validity of this document is unclear, a review was conducted to determine whether the applicable industry documents and other regulatory frameworks directly or indirectly directed or regulated circular economic practices.

Objectives and results set in the direction of nature protection, and pollution prevention and its reduction

There are non-binding or non-mandatory clauses on rights of the organization of the law on tourism, which aims to regulate relations between the state, citizens, enterprises, and organizations in connection with promoting tourism, conducting tourism activities, providing tourist services, taking necessary measures to protect the natural, historical, and cultural rare items, and notifying relevant authorities about violations. In the same way, governers of the provinces and capital cities can obtain assistance and take corrective actions

from tourism organizations and individuals in their territories. While the rights and duties are regulated in this way, the policy planning documents stipulate that the most pressing issues of sanitation and waste in the tourism sector should be addressed as a matter of priority as below:

- To meet the standards of sanitary facilities in tourist camps and service retailers;
- To create camping sites with infrastracture for travelers to relax in a safe and environmentally friendly manner.

Implementation

According to the report on implementation in 2021 the government's action program for 2020~2024, 5 camping sites with public toilets with treatment plants, sunshade, parking, lighting and sports fields were established at Uvs lake in Uvs province, Khar Termis and Khetsuu khad in Khyargas lake, Ugii lake in Arkhangai province, a national protected area of Khar-Us lake in Khovd province, and Gurvan Tsenkher's Cave. Also, 6 portable toilets with 2 doors and 1.5 m3 sewage tanks that can be moved to the recreation area along the banks of the Tuul river, and Eco public toilets were built at the Dragon parking lot in Songinokhairkhan district. Additionally, it is stated that standards projects for the "General requirements for the use of domestic sewage sludge", "General requirements for the release, transportation and processing of thick sludge" and "Strategic plan for sustainable management of water supply and sanitation" were developed, approved, and implemented.

Funding and incentives

It has been approved to provide financing for the "consessional loan to support the tourism sector" included in the "MNT 10 trillion Comprehensive Plan for Health Protection and Economic Recovery" approved by the Government Resolution No. 42 of 2021. This loan duration is until December 31, 2021, for a period of 2 years, and the government will pay 7.0 percent of the total interest on the loan. It is planned to provide a loan of up to MNT 55 billion through commercial banks. Loan agreements to support the tourism industry had not been signed with commercial banks as of this reporting date, and the conditions below were predetermined, but other detailed requirements (For example: related to the environment and CE practices) were not known.

- If the loan is used for a different purpose, the interes rate support is to be cancelled and loan will be classified as business loan without interest support;
- Information will be retrieved from MET for service retailers in the field of tourism in accordance to the relevant law;
- Requirements to customers will be taken within the framework of bank loan operation procedures and instructions;
- Either registered as value-added tax (VAT) agent or exempt from VAT;

Table 14. Policy instruments supporting CE 3. Standard for Tourism in Tourist Camp

There are a total of 15 MNS Standards that tourist camps and resorts must follow depending on their features and service types, and the following 2 standards, which contain the most content of the CE, are highlighted. General requirements for resorts and tourist camps (MNS 6043 : 2019); • The standard establishes general requirements for resorts and tourist camps with a capacity of more than 20 people per stay. Enterprises engaged in the services of resorts and tourist camps shall follow this standard; • Located at a distance of 3 km from natural and cultural heritage sites; • Should be located 200 meters away from the protection zone of the river flow, source of water for springs and forest reserve;

- Activities that do not have a negative impact on the environment and do not damage the untouched nature will be carried out;
- At least 20 percent of energy consumption will be provided by renewable energy;

Housing for eco-tourism in a protected area. General service requirements (MNS 6426 : 2013);

- Organizations and citizens providing tourist services in specially protected areas shall follow this standard;
- The tourist service organization, which can accommodate more than 100 people at a time, will install equipment such as a micro-system for generating heat through the combustion of waste, a gas engine, and cogeneration;
- At least 30 percent of energy consumption will be provided by renewable energy;
- Use energy-efficient electrical appliances;
- For short trips, usual means of transport such as bicycles and carts will be used;
- Avoid single-use items and use reusable items;
- Use environmentally friendly technology based on innovation with word "green";
- Distribute warnings and promotional materials about saving water and electricity, reducing waste, and recycling gray water;
- Waste collection point /doesn't seep into the soil/, should be separated into 3-4 types;

Implementation. These standards have a mandatory status and the General Agency for Specialized Inspection is responsible for monitoring according to the checklist attached to the standards through planned inspections. Organizations are also responsible for preparing their internal control over the implementation of standards and submitting annual reports to the provincial and district professional offices. However, enforcement and monitoring of these standards are not always included in scheduled inspections. For example: In the 2022 inspection plan approved by the General Agency for Specialized Inspection, there is no inspection in the field of hospitality services.

Also, according to Resolution No. 417 of Mongolian Government dated November 23, 2022, it was decided to dissolve General Agency for Specialized Inspection on December 31, 2022. Control functions have been transferred to related ministries and their affiliated organizations, and currently, environmental control functions have been transferred to the Ministry of Environment and Tourism.

The mandatory standards are monitoring and regulatory policy tool to support CE.

Strategic plan for the recovery of tourism, 2022-2024

In accordance with the development policy documents of the MET and the "Procedures for the Development and Implementation of Strategic Plans" approved by the Government of Mongolia Resolution No. 216 of 2020, a plan has been developed to support the development and recovery of the tourism industry. The plan includes the goal of supporting sustainable development and cooperation and developing tourism according to the principles of sustainable development, and the implementation of the goal will be measured by the following results in 2024.

- Increase the number of tourists to 577,000
- The income of the tourism sector is 700 million US dollars. deliver to the dollar
- To be ranked 90th, increasing its position by 3 places on global tourism competitiveness index

Measures for implementation are defined within the framework of 9 goals, and the measures that are directly or indirectly related to the CE include:

- To provide mandatory social health insurance concessions until the end of 2024 to enterprises that created new jobs in the tourism sector
- Tax concessions and exemptions for business enterprises until the end of 2024 (Corporate tax, land, real estate tax, etc.)
- Establishment of parking places with toilets and parking lots at tourist destinations
- To develop tourism infrastructure to meet the demands of local people and tourists without harming the environment

- Support the development of environmentally friendly means of transport and types of buildings
- Measures include the introduction of green certification based on tourism environmental standards.

However, this plan has not been officially approved by a government decree or an order of the minister in charge of the sector, and no official reports or monitoring and evaluation reports related to the plan and its implementation are publicly available.

Highlight 3. Green hotel eco-label

The procedure for granting the right to use the "Green Hotel" eco-label was approved by the order No. 18 of the head of the Mongolian chamber of commerce dated January 16, 2012. Enterprises have the right to use the "Green Hotel" 1 star eco-label by meeting the maximum 6 criteria, 2 star label by meeting 8 criteria and star 5 eco-labels by meeting 14 criteria. As of now about 5 hotels obtained this green hotel label.

2.2.2.2. Regional and national initiatives and projects

Sustainable tourism development project -I (2019-24)

Funded by the ADB, the project implemented in the Khuvsgul Lake Natural Complex in Khuvsgul Province, Northern Region of Mongolia, has planned and is implementing the following main activities.

- Development of eco-tourism plan (Currently, sustainability integrated planning for tourism development has not been carried out)
- Development of a design for the construction of the road within the sub-project in order to solve the problem of not being connected to electricity and other basic services (Currently, the roads of the complex are not paved, disturbing the coastal area and soil)
- The construction of landfill facility, wastewater treatment facilities, 22 temporary accommodation points and 29 sanitary facilities in parking lots in Khatgal, Khanh, and Dadal Sum. (Currently, the waste management of the scenic area is weak, tourist groups throw their liquid waste into open pits, and it is absorbed into the soil, and due to the lack of solid waste collection and burial areas, and insufficient service of the complex, solid waste landfill facilities)

Resolution on "Development of the area around Khuvsgul Lake into an eco-tourism and tourist area"

The government approved the development of the plan for the eco-tourism zone and in addition to measures for the development of tourism, 19 activities in the direction of environmental protection were planned. The segregated activities to be financed and implemented by the ADB Sustainable Tourism Development Project and the state budget were determined on the resolution. In the area of environmental protection, provisions related to the preservation of biological diversity were usually dominant, and the provisions related to the CE are mentioned below.

- Monitoring the implementation of the environmental impact assessment and environmental management plan of enterprises operating in the vicinity of Khuvsgul Lake, and taking the necessary measures
- Develop criteria for sustainable tourism and issue green certificates to enterprises
- To perform environmental assessment of the Khuvsgul Lake, to protect and restore the ecosystem, and to carry out a comprehensive project to clean up hazardous waste from the bottom of the lake
- Removal and disposal of hazardous waste from the depths of the lake

Highlight 4. Pollution in Khuvsgul Lake

The ship "Sukhbaatar" sunk in Khuvsgul Lake in 1985 was successfully pulled out of the lake. The plane sank 110-120 meters from the shore of the lake and 12-16 meters deep.

2021 M&E Report of the Government's 2020-2024 Action Program

Sustainable tourism development project -II (2022-27)

The ADB has approved its second sustainable tourism project in Mongolia. The project aims to support the development of tourism in three provinces in the western region of Mongolia. Project activities will focus on improving recovery and resilience after the COVID-19 pandemic. As a result of the project, it is estimated that 16,296 local citizens will improve their ability to benefit from tourism and increase their income. As part of the project, nine markets for local industrial products will be created near the natural parks, with a special focus on the participation of women. It is emphasized that a pilot program of tourism development for local citizens and MSMEs will be implemented. The program will support local structures such as vocational training, microcredit revolving funds, and incubators for young entrepreneurs.

2.2.2.3. Analysis

Strength	Weakness
Within the framework and initiative of "Welcome to Mongolia", comprehensive cultural, tourism and economic events have been planned, in which goals are being set for the development of sustainable tourism.	The number of enterprises that received the "Green Hotel" eco-label is few and the labeling is not recognized in the market, and the relevant incentive mechanism has not been established. Mandatory environmental impact assessment made on camps operating in natural parks, however, the M&E of such environmental management plan is being weak.
Policy gap identified	
1. The definition, standards and detailed criteria for sustainable tourism are unclear. 2. There is a lack of training and awareness raising on sustainable tourism and CE practices, and no state budgets approved on such activities. 3. The environmental impact studies are made, but there is a lack of coordination with the regional and local planning and weak control over implementation. For example, if the permit on tourism activity is not aligned with the capacity and is not planned, it has a negative impact on the environment, such as overloading the capacity of the area and increasing waste.	

2.2.2.4. Recommendations

After analyzing the policy environment supporting CE in the policy and regulatory environment of the tourism industry, below suggestions are presented.

- Establish sustainable tourism standards, detailed indicators, and implementation practices for each area of activity, conduct training, provide information, and strengthen reporting in cooperation with professional associations and NGOs.
- In the report "Strategic plan for the recovery of tourism and inbound tourism (2022-2024)" in the SWOT analysis of the tourism industry, "Environmental degradation" is identified as a threat that the industry may face. Thus, at the level of policy regulation and implementation, environmental protection, pollution prevention, appropriate use of resources, waste management and circular practices should be included to decrease the threat identified.
- To add the circularity related clause in the requirements for providing concessional loans and financing to support the tourism industry and present the implementation results and impact assessment to the public, the clause could be such as implementating key environmental and CE practices during the loan period.

2.2.3. Policy Environment of food sector

2.2.3.1. Desk research

Strategic Plan For Food, Agriculture and Light Industry (2021-2024)

The Plan includes the following provisions related to CE:

1. To take measures to increase jobs by financing environmentally friendly and green projects with low GHG emissions
2. To develop, organize and coordinate implementation of policies to ensure sustainable development and intensification by introducing environmentally friendly techniques and technologies in agricultural production
3. To protect, prevent and reduce the risk of agricultural production from unexpected natural hazards and the effects of climate change
4. To Introduce and localize new technical innovations, advanced solutions and innovations in the processing and manufacturing

Table 15. CE enabling policy instrument, GAP labelling

As reviewing the above documents, the policies of the food sector contain few provisions on economic development and green development. However, the following are identified when reviewing the circularity and environment related clauses on key agri food sector laws and regulations, such as the Food Act and the Food Safety Act.

- In order to engage in food activities, the entities is required to have an environmental impact assessment done in accordance with the law before starting the activity.
- A food business operator shall adopt good practices depending on the nature of their businesses. Specifically, good agricultural practices (GAP) will be introduced in primary agricultural processing, and good manufacturing practices will be introduced in the production stage of food raw materials and products. Good manufacturing practice refers to the conditions, controls, and activities required to ensure the safety of raw materials and products at all stages of production.
- Organizing training on the introduction of good practices in the food chain, establishing the maximum allowable levels of veterinary drugs, biopreparations and pesticides in food raw materials and products in accordance with international standards, introducing good practices and overseeing records for tracking the traces of food raw materials and products and stated that the Central State Administrative Organization in charge of food issues, or MoFALI, is responsible for ensuring the safety of food, raw materials and products.

In 2019, the MoFALI and the MoH approved the "Instructions for the simplification of Global GAP for Fruits and Vegetables production", and the Ministry of Agriculture and Food approved the certification label for products produced with appropriate agricultural practices, and intellectual property registered in the organization. Thus, the customs standard is a control and regulation tool to support the prevention and reduction of pollution and waste in the CE, and the labeling scheme of the GAP will be an information communication tool to support the green transition of the CE.

Table 16. CE enabling policy instrument -Standards for organic food production

Organic Food Act

The MoFALI has set a target of 5% of the total agricultural production to be organic production by 2030, and Article 5.1 of the Organic Food Law, which was approved in April 2016 and has been implemented since 2017, states that the following principles will be followed in organic production.

- To protect the health and safety of the existence of soil, water, air, plants, animals, and the population;
- Organic production does not have a negative impact on the ecosystem and preserves ecological stability;

- To protect the environment, the health and well-being of the present and future generations, and to engage in production using responsible methods and technologies aimed at preserving the organic and natural nature of products.
- Food, nutrition and fertilizer with 90 percent or more of the ingredients are considered organic.

As of April 2023, 277 domestic products of agricultural and animal husbandry origin have received the transition and certification label of organic products, On the other hand, 69 types of imported products are supplied on the market with an organic label.

Highlight 5. Understanding of organic

"Organic production itself is waste-free. Waste is recycled and used as raw materials. It is an important element of the CE and organic production also includes the protection of health etc. The Ministry of Environment and Tourism does not support the organic direction. Tourists can start buying organic products. Organic production is environment friendly, also critical for climate change issues. So, we want to cooperate with the MET.

Tungalag, Senior Expert in charge of organic food and food packaging of Food Industry Policy Implementation Coordination Department, MoFALI

In March 2023, the revised version of this law was submitted, and the draft law provides for the integrated management and organization of the activities of the electronic database of organic food registration information, defines the functions of government institutions, creates a system for certifying national organic products that replace imports, and provides raw material resources for factories. Increase support and incentives for organic producers, control and responsibility system for organic production and products are described in detail. Article 15 of the draft law specifies the monetary and non-monetary support for organic producers as follows.

Table 17. Monetary and non-monetary support for organic producers

Monetary support	Non-monetary support
- Transitional certification costs - the cost of exhibiting certified organic products at international trade fairs. - First 3-year cost of purchasing organic fertilizers for primary organic farmers who use domestically produced organic fertilizers in their fields and greenhouses.	- Development of organic auxiliary farming at pre-school and general education schools; - In the case of export of organic products, to provide interest support for at least 50% of loans obtained from commercial banks for the investment of the producer; - In the event that new types of organic products are produced and supplied for public use by introducing advanced methods and technologies, providing one-time support from the state budget of up to 75 percent of the costs spent on research and development; - Provide tax incentives and exemptions to organic producers; - Funding information, training and advertising related to organic products from the state budget

Source : Law on organic production /Draft/ (parliament.mn)

According to the expert in charge of the Ministry of Agriculture and Forestry, "with regard to the tax exemption within the framework of the draft law, as part of the incentive to support the transition to organic production, 80-90 percent will be exempted by amending the tax law related to three types of taxes: VAT, CIT, and personal income tax, as well as state "In the purchase law, a bill has been included to reduce the price of organic products by 20 percent." It can be seen that these contents are included in the proposed law with the general content of "Providing tax discounts and exemptions to organic producers", and the law is currently in the process of receiving opinions.

Therefore, within the framework of the Organic Food Policy, the organic food production standard is a monitoring and regulatory tool to support the prevention and reduction of waste, and the certification and labeling of organic products is an information communication tool to increase the supply of green transition. On the other hand, incentives for organic producers can be an economic tool supporting the green transition of energy production.

2.2.3.2.Regional and national initiatives and projects

Incentives and discounts within the framework of the national movement "Food Supply and Security" or Food Revolution

According to Resolution No.36 of the National Assembly dated June 17, 2022, within the framework of the "Food Supply and Security" national movement i) improving the legal environment of the food, agriculture and light industry sectors ii) Providing management and organization iii- V) Actions to be taken in the direction of agriculture, animal husbandry, and food processing industry have been defined and plans related to them have been approved.

The movement provides for the conservation of water resources, which is directly related to energy efficiency, and the introduction of advanced irrigation technologies that are ecologically friendly and use water properly. However, the increase in the irrigated area, which was not included in the criteria, was taken as the outcome measure.

The Feasibility Study included content indirectly related to updating and introducing good practice recommendations at each stage of the food chain and storage and transportation, as well as adopting a plan to control pesticides and heavy metal residues harmful to the environment and human health. In addition, the document includes provisions for state support related to research and analysis connected to traditional food and technology, as well as the creation of branded products, in accordance with the existence of traditional foods and national sweets that are taken as gifts in accordance with the nature, geography, and climate of Mongolia.

In the policy document, the incentive support provided by the government in the areas of Livestock, Agriculture, and Food production is widely included, including the reduction of customs duty on imported goods and 100% of value added tax for circulation and other equipment until January 1, 2025. % is provided for exemption. In the previous years, the tax benefits were as follows.

2021	2022
Tax exemption of 12.5 billion MNT for goods worth 28.5 million dollars for 187 enterprises and citizens	Tax exemption of 14.6 billion mNT for goods worth 44.1 million dollars for 189 enterprises and citizens

In addition, within the framework of the national movement, some measures to be taken to ensure Food Supply and Safety were approved by Resolution No.36 of the parliament. As part of this work, it is also stipulated that the best 100 producers in the food and agriculture sector will be selected and rewarded to be implemented in 2023-26. In line with this, a total of 982.0 billion MNT loans will be provided to food and agricultural producers by the King Bank, Trade and Development Bank, and State Banks.

The Ministry of Agriculture and Forestry has signed an agreement to finance the loan for working capital and investment purposes with 5-6% interest rate, 3-5 years, commercial bank sources, and 13% discount from the government.

Highlight 6. Agricultural support and incentive research

Agricultural support and incentive research is the implementation of state budget incentives and support spent on the implementation of sector policies, programs and measures, analysis of the current situation, study of the economic and social impact, and proposals for policy alternatives for sector policy makers and decision makers. In the research report on agricultural support and incentives prepared by UNDP with the purpose of making recommendations:

Of the 3 main types of agricultural support (producer support, common services, and consumer support), producer support has the most negative impact, while consumer support has the most positive impact. Of the support provided at the overall level of the sector, research and development, agricultural intensification services, and technology transfer have the highest return on investment in rural areas. In terms of the Ministry of Agriculture and Rural Affairs, the majority of subsidies and incentives are provided to private sector organizations. This subsidy consists mainly of funds provided in the form of premiums for hides, skins, wool, wheat and milk. These subsidies aimed at producers sometimes lead to excessive production output and environmental degradation due to non-adherence to proper practices and standards. Therefore, it is emphasized that it is necessary to develop the policy of support and incentives of agriculture in an approach based on the final results of the sector, and to direct its implementation to it.

2.2.3.3. Analysis

Strength	Weakness
The organic food sector, which implements human health and environment-friendly practices, is proposing a goal to be reached by 2030 and is discussing and receiving opinions on supporting policy environment	There are requirements for proper practices in the food and agriculture sector, but it is not clear how the monitoring and evaluation of their implementation is carried out.
Policy gap identified	
The national movement "Food Supply and Security" implemented in the food sector and the 10-billion program to support the economy does not include content supporting organic production, and are not aligned with the goal of bringing organic production to 5 percent of food and agricultural production by 2030. Although the food sector has a high impact on the country due to environmental degradation and GHG emissions, there is a lack of measures to directly or indirectly support the development of the green economy in the framework of the laws and programs implemented in the sector.	

2.2.3.4. Recommendations

The sector is bit different from other industries in a way that food safety and human health are prioritized when implementing sustainable development practices in the food and agriculture sector. In order to reduce the negative impact on the environment and have a positive impact, there are various methods such as comprehensively appropriate practices in the sector, adopting organic farming and production practices, using technologies aimed at not degrading soil fertility, planting with new varieties that use less water and fertilizers and grow well, etc. size can be taken. In Mongolia, the system of implementing, checking, verifying and labeling appropriate agricultural practices and organic farming standards is well formed, but the eligible production practices and organic label certification, eco-label standards, instructions, and control systems for food production, which is the target sector of the research, have not yet been formed. Since the sector is a strategically important sector, financing and tax policy instruments are widely used. Therefore, at a certain level (within monetary, numerical and result objectives), it is quite possible to use these policy incentives as a policy tool to support economic development in conjunction with the green development policy. In connection with these, the following recommendations are submitted.

- In case of resource conservation, green transition, pollution reduction, etc. content related to energy efficiency is included in the action plan, criteria for meeting the relevant goals should be included in the criteria for evaluating the implementation.
- Determining the infrastructural means for monitoring and evaluation of the implementation of the provisions of the Law on Appropriate Practices in the Food and Agriculture Sector through a combination of remote and on-site monitoring.
- Coordinate with the green development goals of Mongolia's development policy goals by including the requirements related to the standardization and measurement of the 7R practices of the CE and the standardization of good agricultural and industrial practices in the regulations for selecting and rewarding the 100 best producers in the food and agriculture sector.
- Set a certain quota on the discounts and incentives provided in support of the industry, and reward enterprises that implement the principles of economic development in a graduated discount. For example: In the event of customs duty exemption for equipment, if the equipment is energy-efficient, the discount rate will be higher, etc.
- Support new cross-sectoral initiatives such as agro-tourism. For example: "Khan Jims" Tourist Camp has a sea buckthorn farm next to it, and organizes events such as sea buckthorn festival where domestic and foreign tourists can pick as many as they like.

2.2.4. Packaging sector policy environment

2.2.4.1. Desk research

Packaging standards for food products and food manufacturing

The Mongolian President's Decree No. 104 stated that packaging and labels are to prevent human casualties and improve cooperation between relevant organizations. Following laws and procedures are in relation: The Law on Ensuring the Food product Safety, and its following procedure for defining and labeling the types of food raw materials and products that must use packaging and labels (Joint Order No. A/46/115 of the Minister of Industry, Agriculture, and the MoH) and The Law on Trademarks and Geographical Indications stipulates that the general production date, shelf life or expiration date of food products, method of use, storage conditions, nutritional quality, ingredients, and composition information should be included in food packaging, and labels. In the food manufacturing industry, detailed regulations and standards have been developed for the food safety of packaging, but there are no directions and regulations related to CE, such as reducing the impact on the environment and recycling.

There is potential for CE enabling policy instrument in the Order on the approval of guidelines for facilitating the introduction of appropriate agricultural practices in the fruits and vegetable production (Joint order A/166, A/251 of the MoFALI, MoH) by expanding the definition of "easy to clean" in the order.

Financing and discounts

As mentioned in the food sector policy environment, within the framework of the Resolution on some measures to be taken to ensure food supply and safety, the President Office of Mongolia and MoFALI states to provide "discounted loans to support the production of food packaging" to packaging manufacturers and professional associations. Out of this, 507.1 billion MNT was allocated to support food processing and packaging industry.

Also, under the national movement "Food Supply and Safety" the newly defined equipments defined will be exempted from customs duty on imported goods and 100% from value added tax until January 1, 2025. Among the 19 sectors included in this initiative, the packaging industry, along with packaging factories, is included.

Though the packaging industry is included in the incentive policy instrument, there is lack of detailed definitions. For example, among the equipment and devices included in the discount, there are only a few equipments only specific to the packaging sector such as package recycling and producing equipments. Also, the incentive does not reflect green financing policy that evaluates or incentives enterprises who implement CE or environmentally firendly production.

Table 18. CE enabling policy instrument- Ban on single-use plastic bag

Ban on single-use plastic bag

In alignment with 2.3.3 of Mongolia's "Sustainable Development Concept - 2030", 3.6.4 of Green Development Policy, 4.1.6 of 2016-2020 Government Action Program objectives, all plastic film bags with a thickness of 0.035 mm or thinner were prohibited from import, production, and use for packaging in trade and services under Government Resolution No. 189 of Mongolia, effective from March 1, 2019. In the resolution, the Minister of Environment and Tourism, N. Tserenbat was instructed to take measures to improve the economic regulation of waste, create a legal framework for eco-payments from waste generators, and addess polluters. And working group under MET was to draft the "the Law on Eco-payment". The draft law initially proposed allocating 50 percent generated to enterprises operating in waste recycling as support. However, the law did not receive approval.

Also, plastic film bags were included in the list of goods prohibited from entering Mongolia, and the list was approved as Government Resolution No. 199.

In Mongolia, the policy enforcement is overseen by specialized inspectors using micrometer equipment, but if there is a violation, measures are not in accordance with violation laws, such as fines, instead it is in accordance with confiscation. It was reported that inspections are not fully enforced due to the limited availability of the micrometer equipment. Also, while the supervision of domestic factories is well-regulated, the monitoring of plastic bags entering through customs is lacking.

Policy to ban single-use plastic bags function as CE's reduction and prevention of pollution, waste enabling regulatory/ planning policy instrument.

Highlight 7. Implementation of the ban on plastic bags

In waste legislation, the ban on plastic bags was recently introduced before the COVID-19, and the work related to that regulation has been quite stalled due to COVID-19. And recently, the Asia Foundation has conducted an assessment of the lack of the implementations. The assessment concluded that the lack of detailed implementation guidelines and unfit provisions within the legal framework caused the inadequate implementation. Also, the enforcement of plastic bag thickness regarding the ban is strictly done in accordance with the requirements set by the inspectors in domestic plastic bag manufacturing enterprises, but the control process is weak when it comes to the plastic bags imported from China as they come in large trucks. Requirements are needed in that gap.

Munkhshur, Environment project expert of the Asia Foundation

2.2.4.2. Regional and national initiatives and projects

The National Packaging Program has been canceled and there are no other national programs or projects.

2.2.4.3. Analysis

Strength	Weakness
The ban on the use of single-use plastic bags aligns with global practices, and the standard inspection micrometer (SHANGSHEN) is compact, high-quality and accurate.	The enforcement of the single-use plastic bag ban inspection and compensation is lacking. Moreover, there are no commercially viable and cost-effective alternatives to single-use plastic bags.[1] The control on the imported single-use plastic bags is lacking. In the list of equipment exempted from VAT and customs duties, there are only few equipment related to the packaging industry.
Policy gap identified	
In packaging sector, "green" and "biodegradable" packaging definitions are absent in any regulatory document. There is no systematic approach to collect data on packaging stream of the percentage of recycled packaging. The "intelligent system based on registration and information" as outlined in the Vision 2050 development document has not yet been realized. Research and information on sector's technology and equipment is deficient. The packaging is concurrently functioning with other sections under the MoFALI, which hinders the sector's development. Given the sector's heavy reliance on imported raw materials, measures are needed to support the Government's 2021-2025 Action Plan's objective to "stimulate domestic packaging production in subsitution to import". In accordance with the five-year development direction of Mongolia in 2021-2025, the measures to support "from quantity to quality" by enhancing reusable packaging, rather than packaging that have a low adverse impact on the environment.	

2.2.4.4. Recommendations

In terms of food packaging policies, food safety and related informative labeling standards are well developed, but there are no provisions for reducing packaging waste, and promoting environmentally friendly technology, and resource-saving eco or green packaging. This underscores that the CE measures in packaging sector are not yet developed.

From the above, although packaging is mentioned in relation to food production and waste projects, measures exclusivelly focused on packaging sector have not been effectively realized. Consequently, the following recommendations are submitted.

- Ban all types of single-use and non-durable packaging, and provide alternative products.
- Strengthen the control policy to prevent the single-use plastic bag imports
- Establish a comprehensive system and define measures for imposing fines on individuals, and enterprises that use single-use plastic bags and cause damage to the environment. By establishing a mechanism of "ownership" of generated waste, the system fosters responsible industry and facilitates the collection of waste raw materials for recycling.
- Implement of projects and programs in packaging sector. Particularly, define the CE concepts of the sector. For example, clarify the difference between "recycling" and "downgrading". And develop labeling and manufacturing standards accordingly. This will support the production of "from quantity to quality" packaging. Reduce and standardize packaging types to facilitate the promotion the reuse of packaging, reclaiming of packaging and other similar measures.

- Support research activities such as on packaging manufactures needs, equipment and information on waste generation

2.2.5. Waste sector policy environment

2.2.5.1. Desk research

Five-year main directions for the capital development in 2021-2025

The document provisions to support the growth of MSMEs by enhancing the financial services accesibility by supporting innovation, and included objectives related to waste were integrated. Objective 6: Reduce environmental degradation and adapt to climate change by protecting natural resources and ensuring ecological balance. Relative implementations are stated as below:

Provisions	Implemetation
6.2.3 Aim to diminish the Ulaanbaatar city's waste quantity that is sent to centralized landfills, by introducing advanced technologies of waste sorting, collecting and transporting and supporting recycling industry.	Efforts are underway to implement waste sorting at its origin and reintegrate it into economic cycles within the framework of projects, but there has been no noticeable change in the capital's infrastruture level.
6.2.4 Improve the conditions of waste collection sites and progressively closing and rehabilitating the landfill sites that have been covered with garbage for extended periods.	In terms of rehabilitation of the centralized landfill, 20 hectares were rehabilitated in 2020-2022 at the Narang Enger landfill, and 10 hectares at the Tsagaan Davan landfill in 2020-2021.
6.2.5 Introduce open and simplified digital system for waste service payment and fees.	According to a research, the waste transport companies in Ulaanbaatar city annually collect and transport an average of 1.3 million tons of waste from households, offices, and enterprises to bury them at Narang Enger, Tsagaan Davan and Moringi Davan waste collection sites. Upon arrival ath these collection sites, waste is weighed by trucks and registered by registration staff. The dispatcher registers centralized sites, serves as the basis for the district budget allocation to waste transport companies, and on average of 180,000 MNT is allocated for each cycle delivered to the centralized site. As of 2021, capital and district budgets have allocated 24 billion MNT for waste collection and transportation services. In 2020, the project "Eyreg Davalgaa/Positive wave" successfully implemented the development of a new waste transport registration and control system at the capital's waste collection sites, which facilitated registration, minimized infractions, increased transparency, and facilitated the work electronically.
6.2.7 Establish facility with the capacity to recycle food waste, yielding a daily production of 2000 kg of fertilizers.	As part of a grant from the ADB and the Japan Poverty Alleviation Fund, a facility capable of producing 2,000 kg of fertilizer per hectare from food waste per day will be built in the "Eco Park" complex of Tsagaan Dava and Narang Enger landfills, and solid waste recycling facilities will be built in Moringiin Davaa site.

By improving above stated waste mangement provisions, CE is supported as the reduction of pollution. However, there are no CE enabling policy instruments.

The Law on Waste

The Law on Waste, revised in 2017, aims to mitigate and prevent the adverse impact of waste on human health and the environment, put waste into economic cycles, use natural resource efficiently, and improve public education about waste through waste reduction, sorting, collection, transportation, storage, reuse, recycling, recovery, disposal, export, and the import and prohibited transportation regulations of hazardous waste.

The law outlines the rights and responsibilities of individuals and enterprises concerning waste; the requirements for cleaning, collecting, transporting, reusing, recycling, disposal, and burial of general waste; centralized sites; detailed economic regulation of waste. In addition, the law stipulates that individuals and enterprises engaged in waste activities such as cleaning, collecting, transporting, reusing, recycling, disposing, or burying general waste, must register and obtain identification number. Also, for general waste cleaning, collecting, and transporting activities, an agreement must be signed with the local soum, district's governor.

The law serves as the foundation for numerous standards, methods, procedures, and documents and provides detailed information on the taxation of waste generators to support producers who sort, reuse, and recycle waste through funding and incentives. Among them, 40.5 "manufacturers and importers are responsible for reclaiming, reusing, recycling, and exporting waste from their packaging" refers to the ownership of wastes from plastic utensils, plastic bags, glass bottles, high-pressure packaging, and their raw materials. The section is crucial and as support to the implementation "the Law on eco-payment" is being developed.

Encouraging recycling, reuse, and recovery activities according to the Law on Waste has potential as CE enabling economic policy instrument supporting CE's prevention and reduction of pollution and waste. And promoting green procurement of waste recycled products has potential as CE enabling regulatory policy intrument supporting CE's green transformation. However, the specific regulatory environment and procedural details are unclear.

Highlight 8. Government support to waste recycling industry

D. Batjargal, head of the Mongolian National Waste Recycling Association, in his 2021 interview stated: "The government does not support the profitable industry that generates 70 billion MNT annually. In Japan, the state covers half of the cost for such facilities. When transporting garbage from point A to point B, the Waste Fund charges 30,000 MNT per ton of garbage. While 2080 MNT is spent on burying one ton of garbage. However, why can't we encourage the industry that does not bury the waste, instead embraces recycling, which also generates money? The sector is not developing because there is no fundamental principle.

2.2.5.2. Regional and national initiatives and projects

"3R4UB" EU funded Switch Asia Programme project (2020-2024)

The main objective of the 3R4UB project, ensuring the sustainable utilization of natural resources within Ulaanbaatar through 3R (Reduce, Reuse, Recycle) practice, is to support CE and capacity building regarding recycling. The implementing partners are Italian "Metellia Servici" LLC, the National Research Council of Italy, the Center for Freshwater Resources and Nature Conservation under MET, and the Environmental Pollution and Waste Management Department of the Ulaanbaatar City's Governor's Office.

The anticipated outcomes of the project are the formulation of long-term master plan for sustainable waste management of Ulaanbaatar, and the establishment of the green fund that will attract private sector investment for the construction of waste sorting points and facilities. The outcomes will greatly contribute not only to the waste sector, but also the development of the CE's green transition.

"Sustainable Plastic Recycling in Mongolia" EU funded Switch Asia Programme project (2020-2024)

Implemeted by Caritas Czech Republic, Environment and Security Center of Mongolia, EcoSoum, Mongolian Sustainable Development Bridge and T.G. Masaryk Water Research Institute, the 2 million euro funded project focused in Ulaanbaatar city, Bulgan province and Hishig-Ondur sum. The overall goal of the project is to contribute to Mongolia's economic prosperity and poverty reduction and to support the development of a green economy, low-carbon, resource-efficient, and CE. This includes improving the plastic waste collection and sorting system, introducing advanced industrial equipment and technology to SMEs, and supporting those SMEs.

Throughout the project's course, several report and documents have been developed related to the plastic product market; research on plastic recycling technology for SMEs; financial access constraints faced by plastic recycling SMEs; training needs. At the policy level, "Research on the current legal framework to improve plastic waste regulation" has been carried out. In general, ithe project not only aims to enhance the policy environment within the sector, but also seeks to develop activities to foster CE's green financing.

"Eyreg Davalgaa/ Positive Wave" Ulaanbaatar household waste collection and transportation management project

The Ulaanbaatar household waste collection and transportation management project is a four-year project funded by the Swiss Development Agency and aims to create an effective, efficient and accessible system for waste collection and transportation management in ger districts.

Under the project, a summary handbook of the legal environment of the waste sector and a methodology for calculating the waste service fee levied on citizens have been developed.

"Eco-Park" waste recycling facility project

According to the Order No. A/250 of the General Manager of Ulaanbaatar City dated August 24, 2020, the Governor Office of Ulaanbaatar City and the Mongolian National Association of Mongolian Waste Recycling are working together to establish facility to sort waste and recycle food waste at Tsagaan Davaa in Bayanzurkh District and Narang Enger in Songinohairkhan District. working to establish factories. Under the project, a pilot project for recycling food waste inclusive of citizens will be implemented at 3 levels (small, medium, and large).

As a result of the project, it is estimated that the cost of 20 billion MNT from the state budget will be reduced by half, and the waste economy will be equivalent to 70 billion to 200 billion MNT.

Currently 25 percent of the city's 1.4 million tons of waste is being recycled. When the facility is fully operational, it will be feasible to process 100 percent of waste, and the financing of 250 billion MNT required for construction work has been secured by the investment of the Republic of Korea.

The successful implementation of the Eco-Park project is projected to yield significant impacts on CR's resource efficiency and reduction of waste. Although the project is not a CE enabling policy instrument, its significance lies in its role as a unifying force for 28 enterprises operating in the field of waste recycling.

2.2.5.3. Analysis

Strength	Weakness
Laws, rules and regulations at policy level in waste sector are well developed. Numerous projects are focused in this field.	"Individuals" supplying the secondary raw materials are limited to engage as only registered individuals and enterprises are allowed. Those individuals not only are unregistered, but also they cannot file VAT documents. This creates undocumentation of the reusable raw material purchases. (Such costs account for 20-30%). Polluters "ownership" or the payment system is needed
Policy gap identified	
The pricing of domestically produced waste recycling products remains higher than those of imported alternatives. There are no supporting incentives or exemptions from customs and VAT to enterprises recycling and reusing waste. The regulations on eco-payments have not yet been approved. Policy provisions to promote technological innovation, low pollution, and waste-free consumption are not well reflected. There is no support or incentive for enterprises that recycle waste. There is no financing or loan support for enterprises in this sector.	

2.2.5.4. Recommendations

The assessment of the policy environment in the waste sector revealsthat though there are substantial number of ongoing projects and programs; support for enterprises engaged in recycling and reuse of waste; innovation; green procurement; and policy support to sector's standards, requirement normatives, there remains a gap in policy environment that can significantly supports waste entreprises and facilitate market growth. This includes in support of the sector, regulation of waste stream schemes is needed at national level.

- Due to the high energy consumption associated with waste recycling and processing technology, the operating costs of the sector are high. (Amounts to 10-12% of operating costs). Therefore, the government should consider providing incentives such as exemptions from VAT and customs for ongoing expenses, or incentives and budget allocation from the government based on the amount of production.
- Create waste supply chain system and supply facilities with raw materials
- Improve the system for charging polluters and the draft law on eco-payments, and create documents and systems to ensure implementation
- Collaborate with private sector for the logistics capabilities, such as waste sorting and transportation,
- Support domestically produced products and to establish competitive pricing parity with imported products, potentiall even driving lowe prices
- Diversify and construct waste recycling facilities upon research and ensure sustainability of the current exisiting facilities

- Support technological innovation

2.3. National and international best practices

2.3.1. Policy practicies enabling CE in Mongolia

2.3.1.1. Policy measures advancing energy-efficient green buildings and sustainable housing markets

Challenges witin the policy environment for advancing energy-efficient green buildings and sustainable housing markets

Background information

The construction sector in Mongolia consumes 56% of national's thermal energy and 38% of electricity, and accounts for approximately 30% of GHG emissions. This sector's wasteful energy consumption is high with energy losses accounting for up to 60% of overall usage. Of the 380,800 households in Ulaanbaatar (2016), 165,000 or 44% live in housings, and 216,000 or 75% live in ger districts.

Approximately half of the ger district households live in housings characterized by significant heat loss, while the rest live in gers. 45,000 or 20% of households in Ulaanbaatar, inhabit public housing constructed between 1965 and 2000, notorious for high heat loss. These housings and buildings have deteriorated over their service of more than 50 years due to inadequate care and maintenance. Only 10% of the housing units in Ger districts, meet the construction norms and standards, and over 100,000 of them were constructed without proper planning highly putting risk of fire and heat loss. According to the research of the World Bank's "Clean Air" project, housing insulation can reduce heat loss by an average of 50%. The construction sector accounts for approximately 5% of GDP, and construction activites were expected to reach 3 trillion MNT in 2018 and are projected to surge to 12.3 trillion MNT in 2030.

There are numerous solutions to exist to mitigate extensive energy losses in construction sector and several significant challenges demand comprehensive solution. Including:

- Lack of incentives to encourage energy conservation, discounted energy tariffs and heat consumption metering system. In addition, insufficient insulatio due to the high level of heat consumption.
- Funding is limited, Homeowners' Associations (HAOs) lack clarity regarding their legal status, and struggle to secure get loan financing due to collateral issue. There is a lack of experience and capacity for this type of commercial contract, negotiation, and project implementation.
- The secctor lacks unified roadmap to reduce the sector's GHG emissions.
- Efforts in policies, rules and regulations to improve green development and building energy efficiency are being developed and approved. Despite improvements in requirements such as the Green Taxonomy, other indicators, and norms, monitoring, implementation, and validation mechanisms are still lacking.
- Another challenge in implementing energy efficiency measures is the initial investment. The long-term return on investment in energy savings is particularly challenging in an environment with low energy tariffs, inadequate incentive systems, and high investment expenses. This is especially evident in cases where low-income individuals rely on inefficient heating methods in high energy consuming housing with high heat loss. This also drags the accessiblility of energy financing.
- Policy documents related to the development of energy-efficient green buildings and housing markets, whether newly developed or revised, need policy measures to ensure their implementation.

In 2019, the government approved and implemented the Policy on Construction sector. This document encompassess various measures aimed at developing incentive system of concessional loans and tax to support energy-efficient green buildings, incorporating GHG reduction technologies in constructions, enhancing the terms and conditions of loans provided to the production of construction materials, with low GHG, and changing old technologies by supporting low interest, long term "green loan" and tax relief policies for GHG low, resource-efficient production.

In addition, in 2021, the 2021-2030 Plan for Reducing GHG Emissions in the Construction and Urban Development Sector was approved through Order No. 166 of the MCUD.

A core aspect of this policy, the green criteria and standards development in construction sector, especially housing enabled the "green loans" products on the market and the opportunity for public and individuals to access on accessible conditions.

Success and result

Cooperation

The Green Building Council was established through Order No. 23 of 2021 of the Minister of Construction and Urban Development. The Council included representatives of the MCUD, MUST, GIZ, as well as relevant NGOs and associations. The primary objective of the Council is to enhance energy efficiency, integrate green solutions and advanced technologies in the construction sector, instute and certify assessment systems for green building, and reduce heat loss in buildings.

The National Approach to Reducing GHG Emissions in the Construction Sector /NAMA/ Project was implemented in 2016-2019. The project encompasses major activities: development of methodologies aligned with the "Methodology of the Clean Development Mechanism" approved by the UNCCC, reviewed by specialists in charge of the GHG inventory in the sector, teachers, professors and regional advisors, and discussed by construction, energy and environment related companies' experts. The methodology was finalized in the second quarter of 2018 after recommendations and revisions. In parallel, the "Online GHG calculation system of the Construction Sector," a digital platform for GHG computation, was developed and launched in 2018.

The Local Energy Efficiency Improvement Action Plan (LEEAP) was approved and implemented in the construction sector.

Monitoring and evaluation

Online GHG calculation system of the Construction Sector has been implemented. The system functions as a module for calculating the amount of GHG emissions, and includes a building registration database, as well as a database of implemented and ongoing projects related to GHG reduction. As part of the initiative, the methodology for calculating the amount of GHG emissions of the "BD-23-105-20" Building was approved.

The Building Energy Certification System was introduced and the "Procedure for Issuing Building Energy Certification" was approved by joint orders of the Minister of Construction and Urban Development and the Minister of Energy No. A/257 and A/252 of 2021. Under the Procedure, existing buildings undergoing planning, expansion, renewal and renovation within Mongolia's jurisdiction can be classified based on energy consumption. Aso through Building Energy Assessment, energy auditors were introduced.

In 2020, the MCUD, UNDP, and Dayan World Environment Fund jointly produced a manual aimed at measuring, reporting, and substantiating the reduction of GHG emissions originating from buildings. Additionally, in 2021, the Energy Regulatory Commission issued recommendations delineating the methodology for measuring, reporting, and verifying GHG emissions within the energy sector.

The EDGE rating system has been introduced. EDGE software has been adapted for Mongolia to help identify climate impacts and provide better design solutions. Since 2020, a total of 111 inidividuals have attended the trainings, and 6 EDGE qualified experts have been trained.

SME support

Since 201, Geres International Organization has been implementing the Switching Off Air Pollution (Dulaan shiidel) Project in Ulaanbaatar, funded by the EU's Switch Asia Programme. The first phase of the project was implemented in 2018-2022, and the second phase is ongoing in 2022-2026, and the project aims to insulate the ger district's residents' housing. The SME construction crews or brigades, designated to carry out the insulation works, have been trained to execute energy effient insulation works.

The trained construction crews then measure and calculate the heat loss of the households who want to insulation, and insulate upon the insulation calculation. Recruitment, training, and provision of the brigades are carried out jointly by the project's co-implementer, the Mongolian National Construction Association, and the Construction Energy Center affiliated to MUST. Since 2018, a total of 160 brigades (with 3-6 people in each brigade) have been trained within the project. The SOAP project has established cooperative agreements with companies and organizations vested in supplying the insulation materials.

Financing and incentive

The trial of financing energy effiecient building was jointly implemented by GIZ, MSFA, and the Mongolian Banking Association. During the pilot, 7 commercial banks participated in financing 26 energy-efficient housing for 2 years. Households qualifying for such loans received a subsidy equivalent to 18 million MNT or 30% of the loan amount. 17 companies tested energy efficient building models in 60 m2 buildings valued at 80 million MNT, 21%-62% energy efficiency, and integrated clean wastewater solutions. Under the project, 22 schools and kindergartens were insulated, resulting in increased energy efficiency, and 117 buildings and structures in Ulaanbaatar (and rural areas) were successfully improved.

Khan Bank, Xac Bank, and Transcapital NBFI provide green loans for housing insulation with a 3 percent interest rate subsidized by the government. The scope of these loans extends ro green building, building insulation. Notably, the SOAP Project, implemented by GERES INGO to reduce air pollution, is collaborating to finance comprehensive insulation measures, which include a 15-20 cm thick roof insulation for housing residences and enhancement of windows, walls, roofs, foundations, and more.

Further steps

Table 19. Government policies regarding green building

Challenge	Reality	Method of solution	Additional explanation
Documents related to "Green Building" have not yet been approved. legal framework is not formed	There is no definition of "Green Building" in the Building Code. The issue of green development belongs to the Ministry of Education and Culture.	Adding a definition of "green building" to the Law on Construction, In the framework of the tasks of the Minister of Environmental Protection, to include for approval the legal documents related to "green buildings",	1. Create a definition of "green building" and "green city". 2. Drafting and discussion of the "Law on Green Structures".
	Preparation of necessary documents	- Creation of an evaluation system for green buildings - Training of experts in the field of green building assessment /experts, auditors/	It is necessary to process: 1. Methodology for evaluating green buildings 2. Certification of green buildings procedure 3. Evaluate green building materials,

			4. Building energy efficiency, consumption classification and rating procedure 5. Building life cycle assessment procedures 6. Passive construction standards 7. Indoor air quality standards
The introduction of green procurement in the TBONOKHBAKHAT is slow and the regulation is insufficient	It is said that the percentage of green purchases will be increased, but it has not been implemented yet	Certification procedures to increase green procurement to 20% of total procurement	Giving preferential treatment to domestic producers and enterprises
Establishing a system of discounted loans, taxes and incentives	- Regulations approved by the Minister of the Ministry of Internal Affairs and Communications - Ministry of Defense submits a "proposal for support". - "Eco certificate" is issued. - Green taxonomy approved.	- Inclusion in promotion, - Subsidy, - Exemption from customs duties, - To determine the benefits and advantages of having an "Eco certificate", - Development of basic research to create "Green and sustainable" investments in the field of construction and urban development; - Support the production of green building materials and introduce optimal financial incentives; - Investigate the possibility of introducing the "Joint Credit Mechanism" in the industry	- Include additions, changes, and regulations in the relevant rules and regulations regarding giving priority to green procurement.
Provide support to entities that have introduced new technologies and production	Companies import new technologies and factories. Due to the lack of information, the demand is low and the risk is borne by themselves until they become known.	- Discounted loans - Grants, - Dissemination of training and information to citizens and the public - Increase public participation - To increase the number of researchers by announcing a competition for the "Best Presentation",	• An electronic app was created within the framework of the NDC project. • Introducing to students, • Have a desire to learn and know in this field. The number of researchers and students will increase.
Training of human resources and specialist staff	- Employees who are not knowledgeable about sustainable and green buildings - Inadequate knowledge of engineering infrastructure and technologies introduced in the production of building materials; - lack of training programs for skills	- Providing knowledge about energy-saving and passive buildings, engineering solutions and technologies, organizing training; - Installation and practice in accordance with technologies introduced in the production of sustainable and green construction engineering infrastructure and building materials; - Acquiring skills and training in energy-efficient passive building technology-based	• Training of trainers • Development of training programs • Introducing and training new techniques and technologies

	acquisition and practice; - There is a lack of skilled workers in the local area.	assembly, casting, and decoration operations.	

National Green Finance Mechanism Development Process

There is an urgent need to have a comprehensive national green financing system that bridges on government, private sector, and international partnerships for continuous financing of climate change mitigation and adaptation activities through cohesive policies and standards, with green loans with preferential terms aimed at target groups. This entails the establishment of Mongolian Green Finance Corporation (MGFC) initiated by the MSFA in 2017, with the the support and MOU among Ministry of Finance, the MET on behalf of government, the Green Climate Fund (GFC) and MSFA. Under this cooperation, GFC officially made a decision in 2020 to provide a total of 27 million US dollars in green financing in the form of shares, loans, and grants to MGFC. In addition, MIK LLC, representing the private sector, has officially made a decision to invest in the charter capital. Yet the issue of creating a national green financing system has been delayed due to the government's pending decision.

Regarding green financing, MGFC's business plan for the initiating operations is based on the following directions, including:

- Providing financing for low-GHG emission heat supply or housing insulation in Ulaanbaatar city and local communities through the utilization of green loans.
- Supporting desginated cunsumers and SME responsible on their energy efficiency
- Introducing an income-based energy-efficient housing loan program.
- By attracting climate finance for investments in green development projects and programs, the initiative aims to benefit around 80,000 citizens, leading to a reduction of over 3.7 million tons of CO2-equivalent emissions. This approach paves the way for addressing the investment challenge that has hindered green development progress, offering a gradual solution to the problem.

2.3.1.2. Policy measures on energy efficiency

Background information

Issues regarding the policy measures on energy efficiency

Mongolia faces a significant energy challenge, with 8 thermal power plants boasting a combined capacity of 1161 MW supplying 90% of domestic energy needs. In 2016, the energy system hit a peak load of 975 MW, with 21% of total consumption relying on imports, indicating a resource shortage risk. Furthermore, the majority of thermal power plants, along with transmission and distribution networks, were constructed between 1960 and 1980, leaving them technologically outdated. Compounding these issues, Mongolia's internal electricity consumption is 1.5 times higher than the global average, and transmission and distribution losses are twice as high. This glaring lack of energy efficiency underscores the urgent need for consistent energy-saving policies. In alignment with global efforts, Mongolia has committed to reducing GHG emissions by 22.7% or 16.9 million tons of carbon dioxide equivalent (CO2-eq) by 2030, with 8.34 million tons targeted from the energy sector alone. These reductions will primarily focus on increasing renewable energy production and enhancing the efficiency of electricity and heat generation. Given these pressing concerns, it is imperative to comprehensively implement energy-saving measures across the energy and construction sectors. Innovative technological solutions must also be integrated to address this multifaceted challenge effectively.

Policy documents related to energy saving that have been issued, changed, or newly developed, and the policy activities carried out in order to ensure their implementation

Law and its enforcement

Based on the above-mentioned needs, the Law on Energy Conservation was approved in November 2015, with the aim of egulate matters pertaining to energy conservation and efficient utilization. The law encompasses the following pivotal provisions:

- Sector stakeholders or professional energy services (energy saving, designated consumers, policy making units) are identified and the rights and responsibilities of energy efficiency auditors, audit organizations, professional organizations providing energy efficiency services, and energy managers are determined.
- In alignment with the government's 2016-2020 action program, "certain measures, projects and programs will be implemented in energy saving, improving efficiency, reducing losses, and introducing new techniques and technologies at the forefront of innovation", in 2016, the National Energy Conservation Program was developed and incorporated into law to intensify the implementation of the energy saving. The objective of the program is to "coordinate energy saving and efficient use activities by providing integrated management, and by introducing and using innovative energy-saving advanced techniques and technologies to reduce GHG gas emissions and mitigating climate change".
- The threshold of the obliged consumers stipulated in the Law on Energy Conservation was updated for the third time in 2023 after 2016, and the enterprises that exceeded the consumption threshold were 154 as of 2016, and reached 197 as of 2019. Under the revised 2023 threshold criteria, 48 enterprises were relieved of their obligations, while over 160 new users were enrolled.A comparative table below illustrates that the thresholds for building owners, energy consumers, citizens, and legal entities have been moderately reduced between 2019 and 2023.

Table 20. Energy consumption threshold

Energy consumption threshgold			
№	Designated consumer type	2019	2023
A. Individuals, legal entites owning building			
1	Organization and legal entities with state and local budget (with volume of more than 15000 m3)*	300 and more (kWh/m2.year)	80 kWh.hr/m3.year
2	Others		
2.1	Store and office (with volume of more than 30000 m3)	300 and more (kWh/m2.year)	80 kWh.hr/m3.year, or 3000 MWh.hr/year
2.2	Service (with volume of more than 20000 m3)		80 kWh.hr/m3.year
Б. Individuals, legal entities consuming energy (The annual consumption of energy is calculated as the total amount of electricity, steam and heat of the consumer.)			
3	Mining (extraction and processing)	5000 and more* MWh.hr/year	4000 MWh.hr/year
4	Manufacturing		
4.1	Heavy industry	4000 and more* MWh.hr/year	3000 MWh.hr/year
4.2	Medium/ Food industry		2000 MWh.hr/year
4.3	Light industry		2000 MWh.hr/year
5	Information, communication		3000 MWh.hr/year
6	Others		2000 MWh.hr/year
B. Legal entities responsible for energy production, transmission and distribution			
7	Energy producer (electricity for domestic consumption)	10 and more percentage/year	10 percentage/year, or 2000 MWh.hr/year

8	Energy transmitter (transmission network losses)	2 and more percentage/year	2 percentage/year
9	Energy distributor and supplier		
	Energy distribution network losses	9 and more** percentage/year	9 percentage/year**
	Heating network losses	7 and more percentage/year	7 percentage/year

The Law on Energy conservation and regulatory procedures were developed, and national standards were discussed by the Energy Technical Committee and Management Committee under MASM. With these essential policy documents and standards, it can be considered that the legal and regulatory environment for the implementation of energy conservation measures at all levels has been formed.

Success and result

Annually, designated consumers conduct evaluations of activities, projects, measures, and the implementation of the previous year's plan in the energy conservation and efficiency improvement. Last yeasr report and next year’s plans were compiled and introduced to ERC management. Those enterprises and organizations not in compliances are given notices and directives are issued in accordance with the Law on Violations.

In 2021, among the 197 designated consumers, which are 48 state-owned, 26 office and commercial, 34 light industry, 16 heavy industry, 14 service, and 25 mining, consumed a total of 3,474 million kWh of electricity and 1,460,000 Gcal of heat energy. These 197 designted consumers actively executed 1,075 distinct energy-saving initiatives. The cumulative impact of these efforts was estimated to save approximately 975.1 million kWh of electricity and 28.2 thousand thermal energy units.

In contrast, in 2022, designated consumers consumed 5525.4 million kWh of electricity (of which 1392.8 million kWh of electricity imported by Oyutolgoi LLC) and 3320.3 thousand Gcal of heat energy. It accounts for 40% of Mongolia's electricity production and 20.3% of thermal energy production. Designated consumers implemented 947 projects and measures in 2022 with an investment of 39.5 billion MNT, creating the opportunity to save 19.0 million kWh of electricity and 41.3 thousand Gcal of heat energy.

Highlight 9. Responsible consumers energy usage

According to the report, responsible consumers saved 68.5 million kWh in 2019, 96.5 million kWh in 2020, and 75.1 million kWh in 2021. However, these figures are not carefully reviewed and verified for accuracy.

2022 Annual Work Report of the Internal Audit Department of the Energy Regulatory Commission

Capacity building sector stakeholder

A total of 82 auditors and 254 energy efficiency managers have successfully completed their training and are actively carrying out their responsibilities within the framework of their roles. Efforts to promote energy conservation and its significance to the public and society have been effectively executed across multiple platforms, including television, radio, electronic media, newspapers, magazines, and educational institutions, such as general education schools.

Further steps

Looking ahead, ERC is preparing to develop and initiate the implementation of a strategic development plan spanning from 2023 to 2027. Actions are planned for designated consumers who are committed to energy conservation, including 160 new consumers this year according to the newly approved energy consumption threshold in 2023.

2.3.1.3. Policy measures related to strengthening the sustainable financing system in Mongolia

Background information

Challenges in the policy environment related to sustainable financing

Since 2013, there have been many important background documents on sustainable finance (Table 14), yet no unified strategy.

Table 21. Sustainable finance policy environment

4 national	12 sectors	5 voluntary
National Programme on Reduction of Air and Environmental Pollution, 2017 Nationally Determined Contributions Target under the Paris Agreement, 2019 "Vision – 2050" the long-term development policy, 2020 – approved by State Great Khural Sectoral policies (priority areas, national programs and strategic plans.)	Financial Market Development Programme, 2017 Monetary policy guidelines for 2019 Monetary policy guidelines for 2022 National Green Taxonomy, 2019 Bank lending regulation, 2019 Guidelines for Comprehensive on-site inspection, 2019 Green loan reporting methodology (expected to be approved) Strategic plan of Financial Regulatory Commission, 2021 – 2025 Securities registration procedure, 2018 он Regulation of Company debt instrument registration and Green bond guidelines, 2021 Updated long-term swap agreement regulations, BoM, 2021	Sustainable Finance Principles of mongolia, 2014 Sector guidelines and ESMS, 2015 National Sustainable Finance Roadmap, 2018 Textile sector green loan criterias of Mongolia, 2021 Energy Efficiency Guidebook for Credit Operations, 2020

Policy documents related to sustainable financing that have been issued, changed, or newly developed, and the policy activities carried out to ensure their implementation

Financial Stability Council member organizations including the Ministry of Finance, Bank of Mongolia, and Deposit Insurance Corporation executives approved the "National Roadmap for Sustainable Finance" in 2022 during the "Green Finance Regional Conference". By implementing the roadmap's six main groups and 25 sub-measures, GHG reduction goal by 22.7% by 2030, to adapt to climate change, and to achieve the SDGs by 2030, is enabled.

Figure 7. National Sustainable Finance Roadmap

Within the document framework of this document, the following measures can be taken and implemented:

- For aggregated statistics at sector levels, public awareness, and data quality, loan datas are gathered in alignment with the Green and SDG taxonomy for
- Swap agreements, and other means are investigated and resolved to attract green resources, and loan funding to green projects;

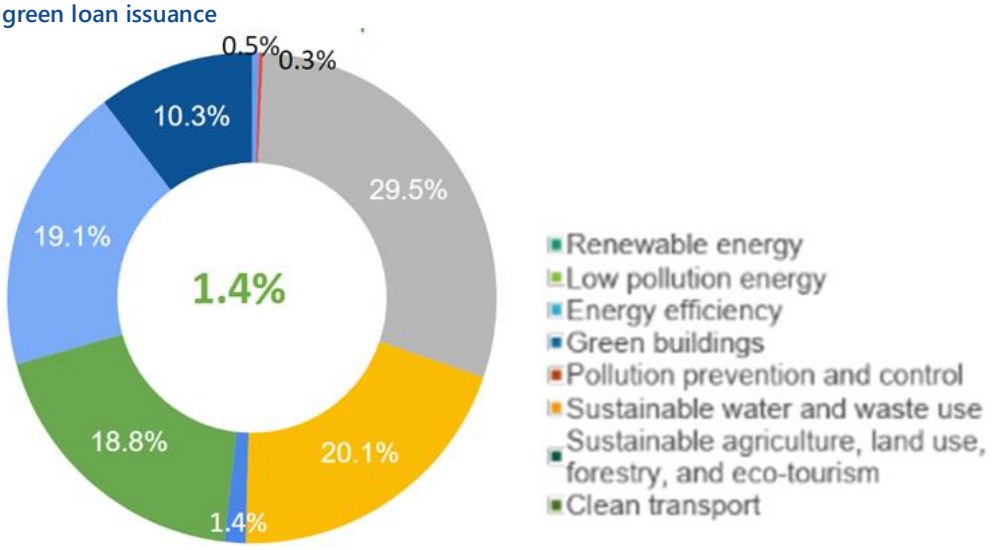
- Cooperations with international and local organizations to enhance public awareness, to capacity build experts, and to strengthen study and researches on understanding of climate change, its impacts on markets, society and economy, and impacts of green and sustainable financing;
- Monitoring and evaluation system is created to oversee the implementation of sustainable financing by financial institutions;
- Stress tests and scenario analysis methods to assess the influence of climate change and related risks on the financial sector are developed and regularly conducted;
- Government-driven preferential programs include special conditions to support green sectors and projects, with a focus on energy efficiency are ensured

The overarching objective, set for 2030, is to increase the proportion of green loans within the banking sector to 10 percent and within the non-banking financial sector to 5 percent. These goals are in alignment with the roadmap and will be guided by well-defined criteria and documents, including ESG Sustainability Reporting Guidelines.

Success and Result

Commercial banks green loan statistisc is classified by the National Green Taonomy's 8 sectors.

Figure 8. Bank sector's green loan issuance



Resource: Mongolbank's green loan statistics, Q4 of 2022

One of the key objectives included in the roadmap was the introduction of ESG indicators and transparency standards in capital markets. By doing ESG reporting, companies began to enjoy many benefits such as meeting the requirements of international investors and complying with the requirements of regulatory organizations, as well as obtaining various types of long-term financing and strengthening the reputation of their business in the domestic and foreign markets. Within the framework of this work, companies listed on the Mongolian Stock Exchange are following the ESG reporting standards on a voluntary basis. It is an example for other entrepreneurs with its sustainable development report.

Highlight 10. Sustainable investment

In 2019, the European Union pledged to invest at least 1 trillion euros in sustainable investment over the next decade in projects needed to transition to a green and inclusive economy. Also, it is no coincidence that last year's COP27 conference focused on financing, and the main theme was the provision of 100 billion US dollars annually to help the population of poor regions adapt to climate change.

Considering that we need $2.4 trillion a year to green the energy sector alone, we can't help but increase the involvement of businesses to meet the Sustainable Development Goals.

Therefore, in recent years, the reliability of any organization's long-term successful operation has been established by the positive effects it brings to the environment, society, and governance (ESG) framework.

Resource: Sustainable development 2030 e-booklet

Further steps

SDG Finance Taxonomy, a revised version of Green Taxonomy is under development. The document including social sectors, supports the implementaion of the activities mentioned in the National Sustainable Financing Roadmap, strategy document and ensures the engagement of the sectors' experts and stakeholders

2.3.2. Regional/ international best practices enabling CE

Among numerous international policy instruments and CE enabling implementations, the following systems are highlighted as best practices:

1. Vietnam's Sustainable Consumption and Production System
2. Control-Analysis System of Feasibility Study of Amsterdam
3. Malaysia's Extended Production Responsibility System
4. Azores Waste Management Tax System
5. A green tax system collected from tourists in the Maldives

2.3.2.1. Vietnam National Action Plan on SCP (2021-2030)

As explicitly targeted in the Sustainable Development Goal (SDG) 12 about ensuring sustainable consumption and production patterns as key to sustain the livelihoods of current and future generations, successful transition to **Sustainable Consumption and Production** (SCP) **means to improve resource efficiency, consider the life cycle of products and services, and engage actively in multilateral environment agreements.** In Vietnam, the **Ministry of Industry and Trade (MOIT) had taken the lead role in the development of the National Action Plan on Sustainable Consumption and Production** for the Period of 2021-2030 (The Plan). The Plan was the result of the collaboration of different ministries: Ministry of Natural Resources and Environment (MONRE), Ministry of Agriculture and Rural Development (MARD), Ministry of Finance (MOF), Ministry of Justice (MOJ)), together with the Institute for Global Environmental Strategies (IGES), and the Environment and Ecology Institute (EEI), under the supervision of the EU SWITCH-Asia SCP Facility. The **National Action Plan on SCP** (2021-2030) **aims to identify key priority activities and tasks to implement and promote sustainable consumption and production** in Vietnam, enhancing sustainable lifestyles and improving the quality of people's lives towards a circular economy. The Plan was approved by the Government of Vietnam on 24th June 2020 by the Decision No.: 889/QD-TTg of the Prime Minister. On 20 November 2020, it was presented and officially launchedThe Plan comprises of 4 main components:

1. **Viewpoints:** presents rationales of the Plan: the aim of SCP, the foundation of the Plan, and how SCP is conducted;
2. **Objectives:** highlights both general and specific objectives with 2 distinguished timelines (2021-2025, and by 2030);
3. **Main tasks: identifies a total of 15 tasks** from improving legal policies on SCP, sustainably managing resources and focusing on renewable energy and recyclable materials and fuels, sustainable, ecological, and reuse- and recycle-oriented design, promoting cleaner production, eco-friendly products, and sustainable models following product life cycles, developing sustainable distribution and import/export, promoting ecolabels, developing sustainable markets and providing information to consumers, promoting sustainable procurement, capacity building and implementing sustainable lifestyles, facilitating circular economy applications for waste, boosting communication on SCP, building database system on SCP, developing science and technology aiming at SCP, supporting access to green finance, and strengthening international cooperation on SCP;
4. **Implementation solutions:** provides basis requirements on the Plan implementation including to integrate its contents into development other strategies and plans in different sectors of relevant ministries, governmental agencies, … and funding sources and mobilization.

The Plan is integrated with the Decision no. 889/QD-TTg. At the end of the Decision, an appendix is attached and outlines 15 tasks. **Each task consists of four sessions: objectives, main contents, presiding and coordinating entities, and implementation duration.** Objectives of the corresponding task are well-defined. In the main contents' session, various activities (sub-tasks) are regulated. The **relevant governmental entities, such as ministries, People's Committees of provinces and cities,** are **in charge of coordinating and implementing specific tasks** (and sub-tasks), **are assigned in the session of coordinating entities.** The last session is the implementation period, which is targeting in the duration of 2021-2030.

Some important points of this National Action Plan on SCP are as follows:

- It is a **work of collaboration among different ministries** under the lead of the MOIT.
- **A clear structure is provided:** from the viewpoints, to its objectives, main tasks and implementation solutions. In addition, an Appendix to concretize the objectives, activities/sub-tasks, coordinating roles and implementation duration is attached with the Plan.
- **Clear targets are set**: from the specific objectives of the Plan, clear targets, for examples, **developing legislative framework on SCP with technical regulations, standards, sustainable design, reduction in resources and materials use, number of models for SCP**, …, are assigned for each of the two periods (2021-2025 and by 2030). Some targets, notably, for examples, effective improvement and implementation of legal policies on SCP, 100% of super markets and commercial centers use eco-friendly packaging, an achievement of 7 – 10% decrease in resources and materials used in beverage, food processing (among other sectors), …, are planned to be achieved by 2030. The Plan is also directed at subnational level: targets are set for provinces and cities for communication and awareness raising.
- The **Plan emphasized** more **on production-specific areas for improving water efficiency** and **waste reduction** by through circular economy approaches.
- A **comprehensive approach for SCP** under the umbrella of circular economy **was utilized to develop the Plan.** Entire requirements of circular economy approach have been considered: resources, innovation, business models, and collaboration.
-

- It **addresses** many elements of circular economy: **the exploitation and usage of resources, waste, eco- and sustainable design, resources efficiency and cleaner production, access to green finance, innovative science and technology, education and awareness raising, policy framework, product life cycles, among others.**

The National Action Plan on Sustainable Consumption and Production for the Period of 2021-2030 in Vietnam is highlighted with some key mentioned-above points, and thus, it was selected as a best practice.

- **Key take-aways:**
  - The Plan is the results of the collaborations among different ministries, consulting institution and EU through SWITCH-Asia program.
  - It was developed with a detailed structure, which include rationales, clear objectives, main tasks (and sub-tasks with its own objectives, main contents, concrete coordinating roles and implementing duration) and implementation solutions.
  - Clear targets toward each objective was set.
  - The Plan was built upon a comprehensive circular economy approach.
  - The Plan focuses strictly on production-specific areas for improving water efficiency and waste reduction through circular economy approaches.

2.3.2.2. Waste Statistics data for a Circular Economy Monitor from industrial waste: best practice from the Amsterdam Metropolitan Region

Cities and regions in EU member countries are now required to incorporate Circular Economy Monitors (CEM) as part of their circular economy strategies, as outlined in the EU Circular Economy Action Plan. **CEMs are responsible for assessing performance towards set targets and guiding decision-making** and rely on a variety of statistics and datasets, including waste statistics. The collection of waste statistics is mandated by the European Commission through providing general guidelines for data collection and processing and regulated by EC Regulation No. 2150/2002 on Waste Statistics. The **Regulation aims to gather statistics on waste generation and treatment per economic activity, by treatment method, and population. The data collection is used not only for regional monitoring and legislative purposes but also for local decision-making.** Among other EU member states, the Netherlands has one of the most detailed waste registries, and Amsterdam, its largest metropolitan region, is currently developing a CEM to track progress, identify areas for improvement, and estimate target feasibility.

The Amsterdam **CEM is expected to combine a wide variety of public and private datasets into an integrated single framework. Based on the** CEM **goals, relevant data mapping processes can be proposed.** For example, if a CEM goal is to determine the CE decision making from stakeholders, the query can be "which economic sectors need to be included in the circular economy strategy development and decision making?", and the main mapping domain will be waste producers (names and addresses) and mapping function can be utilizing the Chamber of Commerce (KvK) business registry.

As principles, data requirements for the circular economy monitoring consists of:

1. Studying waste flows, their relations, and transformations,
2. Material quantity in both mass and volume and material market value,
3. Material content to determine the best applicable treatment or up-cycling process, establish connections between material supply and demand, and use for impact calculation of the primary resource depletion,
4. Detailed geographical information about the material locations and movements, and
5. Availability of metadata as results from the integration of multiple datasets and assessing the quality of monitoring.

In case of Amsterdam CEM, the **procedure includes 3 main steps: data acquisition, data processing, and data mapping.** The data acquisition process involves collecting data **from the Dutch national waste registry** (as the industrial waste statistics in the Netherlands are currently conducted under the framework of the Waste Statistics, in which, every waste management company is obliged to report on waste from original waste producers to the final treatment after receiving a significant amount of waste), the **Chamber of Commerce registry,** and **the road network** to assess carbon emissions caused by waste transportation. The **data processing** step involves applying **automated processes to remove or rectify faulty entries** and harmonize values. The final step is the **data mapping,** which **comprises several phases** (geospatial mapping, mapping waste producers to their economic activities, semantic mapping, and mapping of waste transport).

- **Geospatial mapping** aims to **identify the geospatial locations where waste is generated, transported, and treated in connection** to all CEM goals.
- **Mapping waste producers** to their economic activities **determines which sectors need to be addressed** specifically by their waste production and waste content characteristics, such as post-consumer or production waste.
- **Semantic mapping** of waste content can be done by filling a free text field or using the European List of Waste (LoW) code to identify material reuse potential in the waste registry. For instance, the LoW codes can classify waste as Clean/Contaminated, Pure/Mixed/Unknown, Organic/Inorganic/Unknown, and so on.
- **Mapping waste transport** is essential in estimating the associated costs of waste transport and collection, financial feasibility of the strategies, as well as the energy requirements for moving materials and their associated emissions, which contribute to negative environmental impacts.

Once the mapping tasks are completed, **the outcomes will be presented visually,** corresponding to different evaluation aspects, such as waste flows originating from the Amsterdam municipality (Figure 1 as an example), economic sectors requiring inclusion in the circular economy strategy development and decision-making (Figure 2 as an example), the type of secondary materials in the region with potential for reuse (Figure 3 as an example), and the current carbon emission impact from waste transportation.

The Amsterdam CEM has revealed that the actual material usage in the city is 61 times higher than previously estimated. Furthermore, the material use is still increasing, despite the goal to reduce primary abiotic material use by 50% by 2030. The ecological impact of material use is also higher than previously thought, with CO_2 emissions from consumption outweighing all other types of emissions.

This data collection system is considered a best practice, as it built upon a systematic waste data collection and reporting from waste management companies in close collaboration with waste producers. It also employs innovative data processing and mapping solutions to enhance visualization and monitoring of industrial waste generation, and the EU's waste reporting regulations.

Key take-aways:

- The Amsterdam CEM is built upon one of the most detailed waste registries with a systematic waste data collection and reporting from waste management companies with their relevance to waste producers.
- It used innovative data processing and mapping solutions to enhance visualization and monitoring of industrial waste generation.
- It was developed under the compliance requirement to the EU legislative framework, such as EC Regulation No 2150/2002 on Waste Statistics, EU Circular Economy Action Plan (CEAP) as part of the European Green Deal strategy (COM/2020/98).
- It has brought significant results, which reveal different figures in material usage and CO_2 emissions in consumption compared to previous estimation.

Figure 9. Waste flows that have originated in the municipality of Amsterdam in 2018 (Source: Sileryte et al., 2022)

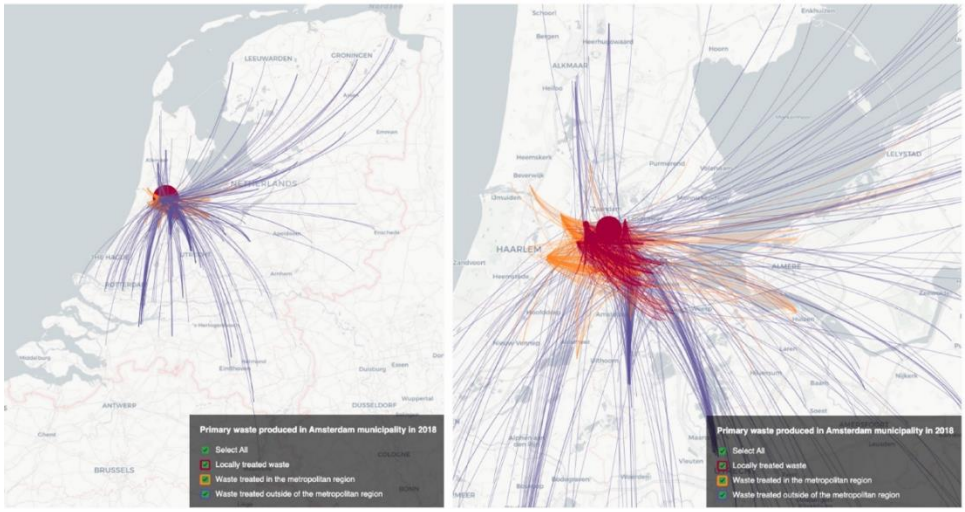


Figure 10. Waste distribution between economic sectors (Source: Sileryte et al., 2022)

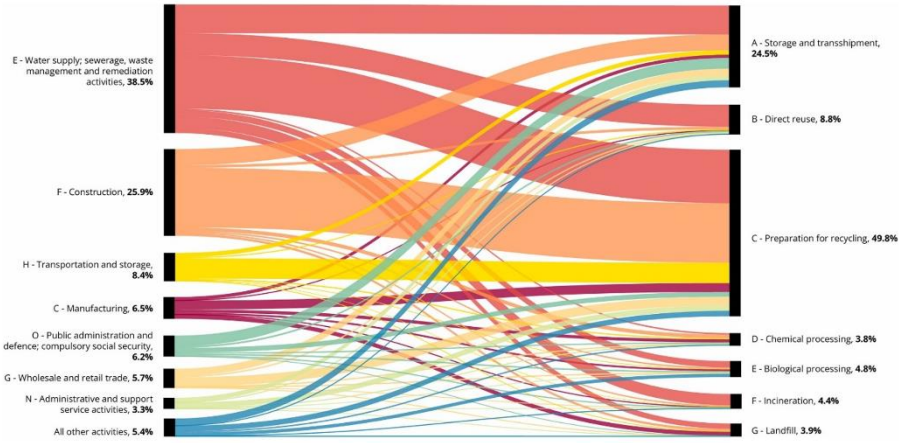
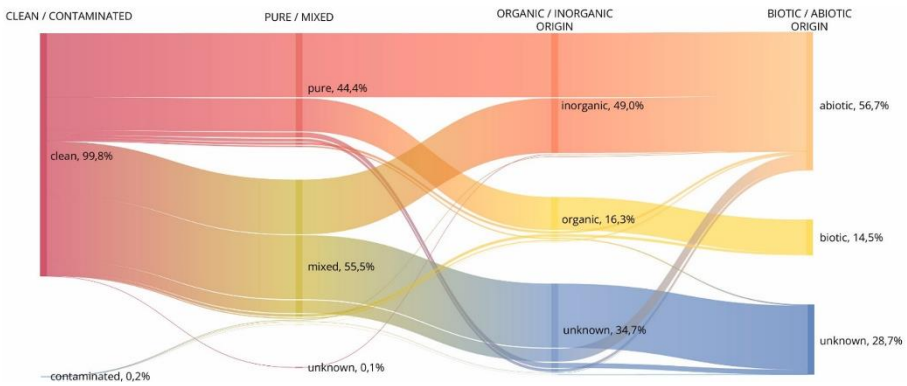


Figure 11. Parallel sets of the waste distribution according to the assigned semantic tags (Source: Sileryte et al., 2022)



Key take-aways:

- The Amsterdam CEM is built upon one of the most detailed waste registries with a systematic waste data collection and reporting from waste management companies with their relevance to waste producers.
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- It has brought significant results, which reveal different figures in material usage and CO_2 emissions in consumption compared to previous estimation.

2.3.2.3. Development process of the EPR Scheme in Malaysia

EPR term and requirements have already appeared since 1990s in policy and law of some European countries, such as Germany, Sweden, and France. **EPR is** increasingly recognized globally **as a powerful and efficient policy tool for promoting effective waste management solutions to improve recycling rate and reduce final disposal of resources in products and materials**. EPR also **aims to shift financial responsibility in waste management** from **municipalities to producers**, and **thus, foster the aspects of sustainable design and innovation.** Differences in national legislations result in the landscape and performance of EPR schemes remains extremely heterogeneous and differs amongst countries. However, in general, **EPR instruments can be categorized into 4 groups:**

- Product take-back requirements,
- Economic and market-based instruments such as deposit-refund schemes, material tax,
- Regulations and performance standards such as regulating the recycled content, and
- Accompanying information-based instruments for public awareness raising.

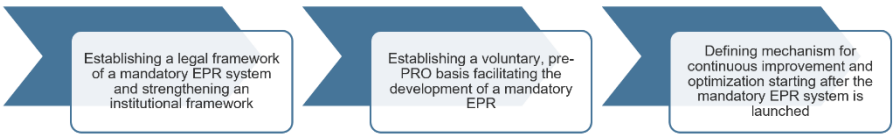
EPR schemes can be developed by combination of several instruments and **designing a scheme can be based on product or range of products** targeted, **voluntary or mandatory** scheme, **individual or collective** scheme, **organizational versus financial responsibility, responsibility allocation among stakeholders,** or **cost coverage.** In case of a collective EPR scheme, Producer Responsibility Organizations (PROs) will be organized and financed by producers. PROs are responsible for waste collection and/or recycling of end-of-life products on behalf of their (producers) members (OECD, 2014[4], adelphi, 2021[5]).

An **EPR system must be developed on the country-specific context** to be effective and supported by evidence-based knowledge, incentives, strong commitment and collaboration among government, private sector, waste management sector, and consumers. The ongoing development of Malaysia EPR system (WWF-Malaysia, 2020[6]; World Bank, 2022[7]), thus, has been selected as one best practice based on those aspects. For instance, when taking the geographical condition of Malaysia as a peninsula and having more than 1,000 islands into account, the practices of waste management must be considered. The normal practices for waste collection and transport to the mainland can be incorporated into an EPR system on small developed islands, such as Perhentian, Redang and Tioman. Industrialized islands, such as Penang and Langkawi, have enough generated waste for establishment of local Materials recovery facility (MRF) through the EPR.

In Malaysia Five Year Plan (2021 – 2025)**, the importance of circular economy principles in production and trade was recognized. One, among** various **components of strategies for circular economy** transition, is **the gradual introduction of an EPR scheme for plastics. EPR** is also emphasized as one main action plan **under the Malaysia Plastics Sustainability Roadmap**, 2021 – 2030. **The key features of plastic packaging waste** in the country are summarized **that high-value recyclable packaging is already sorted from**

household waste (however, it causes the lack of fund for collection and recycling of the remaining household waste) with **sufficient recycling capacities, while low-value and con-recyclable plastic packaging are disposed** of and mixed together. **Thus, a country-specific EPR scheme** had been proposed for Malaysia with its main aspects including (1) mandatory EPR scheme, (2) covering all consumer packaging materials and non-packaging plastic products, (3) establishment of one and non-profit PRO, (4) modulated fees, and (5) strict monitoring and control systems to avoid fraud, strict and enforced monitoring and controls. This **EPR scheme is being implemented in three main steps** depicted in Figure 12.

Figure 12. The proposed of EPR scheme for Malaysia in three main steps (Adapted from WWF-Malaysia, 2020)



Towards EPR implementation, **various stakeholders were included in discussions on EPR from an early stage.** In September 2019, the **Malaysia Plastic Pact** (MPP), a **multi-stakeholder platform of both public and private stakeholders in the plastic value chain** commits to act for a circular plastics economy by building a **national collaboration network, was established**. MPP sets concrete actions to reach its targets, and develop a research and development circular plastics economy. An additional **working group for EPR was formed within the mandates of MPP.** Stakeholder engagement, capacity building, familiarity with the national context, deep understanding pros and cons of the current system, conducting studies and several pilot projects and initiatives on packaging waste management have shed light on refining EPR implementation with specific condition of the country in the most suitable and relevant manner. Currently, the **Malaysian Recycling Alliance Berhad** (MAREA[8]), officially launched in January 2021, **is a voluntary PRO organization.** MAREA is supported by several multi-national companies in Malaysia and is also engaging in technical working groups, collaborating with ministry representatives on the development EPR scheme. As proposed**, at later phases, a voluntary non-profit PRO will be organized as a mandatory PRO.** The collected fees are spent on education, awareness and information, possibly on increasing the capacities of sanitary landfills, remediation and development of existing dumpsites and litter clean-ups. At present, **MAREA works with relevant stakeholders for waste collection support at different parts of the plastic value chain in the country and carries out Consumer Education and Public Awareness (CEPA) programmes to facilitate behavior change.** Initially, **MAREA targets on four main types of post-consumer plastic packaging: Polyethylene terephthalate (PET), High-density polyethylene (HDPE), used beverage carton (UBC), and flexibles.**

In the **next phases of the EPR implementation, a clear and explicit legal framework will be established based on the consensus of both private and public sector, and the alignment between ministries.** Collection and recycling requirements, guiding principles and appropriate incentives for system operation must be developed. As for now, the high value packaging materials are collected quickly but the low value ones have low recycling rate. **Since the informal sector is the backbone of Malaysian waste management, the developing EPR needs to integrate this sector and provide suitable incentives for increase of collection and recycling rate while improving livelihoods and working conditions.** One important aspect is the **EPR scheme must ensure the traceability of collected recyclables.** When mandatory EPR-scheme is in place, it is advised that there are possibilities for two registration: one register is for producer and importer for calculation and allocation of the EPR fees, and another one is for waste management actors to ensure a desired standard of disposal. Public authorities like National Solid Waste Management Department will

control the PRO and its responsibilities. The implementation plan is expected that by 06/2025, the legal of EPR scheme will be rolled out, voluntary PRO will be transformed into mandatory PRO. Once the EPR Framework is made available, use and amending modulated fees for financial incentives to foster recycling will be implemented. Together with that, harmonizing and formalizing collection schemes, and optimizing internal and external control mechanisms will take place.

Key take-aways:

- Built upon a reliable foundation for EPR implementation through stakeholder engagement, capacity building, deep knowledge about the country context, shared common understanding.
- Clear approach for development and implementation of EPR scheme: step-by-step approach, timeline for implementation, and activities.
- Developed a voluntary PRO and used the collected fees for consumer education and public awareness, and it will be transformed into mandatory PRO at later phases.
- EPR is an integrated part for transition towards Circular economy.

2.3.2.4. Waste management on Islands of Azores

This Waste management system is considered a best practice because it outlines a comprehensive waste management plan that tackles various waste-related issues in the Azores islands.

The Azores islands have previously faced a number of waste management problems, such as:

- The absence of modern solutions for waste treatment and disposal,
- Conversion of uncontrolled dumps to controlled waste disposal facilities or promote waste valorization,
- Delays waste sorting,
- The increase of packaging waste,
- Challenges regarding the reuse and valorization of packaging waste (Patrão Costa et al., 2011[9]).

The Azores have developed waste policies and strategies to address waste management issues such as inadequate waste treatment and disposal solutions, delays in selective waste collection and sorting, and the increase of packaging waste production (see Table 1) (Patrão Costa et al., 2011).

Table 22. Policy measures aimed at waste management in the Azores[10]

Policy/Measure	Content
Decreto Legislativo Regional nº 20/2007/A (later republished as Decreto Legislativo Regional nº 10/2008/A)	Establishes waste regulation, planning and management, the requirement for waste management operations to have a permit or registration, the obligation to handle waste without harming the environment or human health, and the promotion of waste prevention and reduction.
Decreto Legislativo Regional nº 40/2008/A	Defines the economic, financial, enforcement and penalties regulation about waste management in Azores. There are three taxes defined in this law: waste management taxes, waste regulation taxes as well as Ecocerv (see more in Table 2).
Strategic Plan for Wastes in Azores, called as PEGRA (established from 2007 to 2013)	Aimed to support the implementation of technological infrastructures, encouraged the business sectors' eco-efficiency and promoted the economic and financial sustainability of the waste management system[11].
The System of regional waste information SRIR	The system has the relevant information about production, importation, exportation and management of waste.

The taxes defined in Decreto Legislativo Regional nº 40/2008/A are paid annually. The taxes are paid according to waste quantities processed by waste operators. The contents and aim behind the taxes are shown in Table 2 (Patrão Costa et al., 2011).

Table 23. Waste taxes implemented in Azores

Tax	Content
Waste Management Tax	Promote integrated waste management and to encourage the application the waste hierarchy.
Waste Regulation Tax	Cost covering charges about structural, economic and service quality regulation.
Ecocerv	Encourage the reusable packaging utilization that is only applied to alcoholic beer.

There are specific strategies in place for enforcement and compliance with the law. In 2008 there was created a Regional Inspectorate for the Environment which controls and verifies the compliance with the legal requirements. The inspectors, among other tasks, provide technical advice and promote good practices, define deadlines for implementation of the measures. They also issue notifications for compliance and fines, where applicable. In addition, there are police forces working in environmental protection and inspection (Patrão Costa et al., 2011).

As part of PEGRA, the design of a Waste Processing Centre and Organic Composting Centre was promoted on the island of Flores (Flores CPR), where previously all municipal waste was landfilled. The main implemented structures for waste management were:

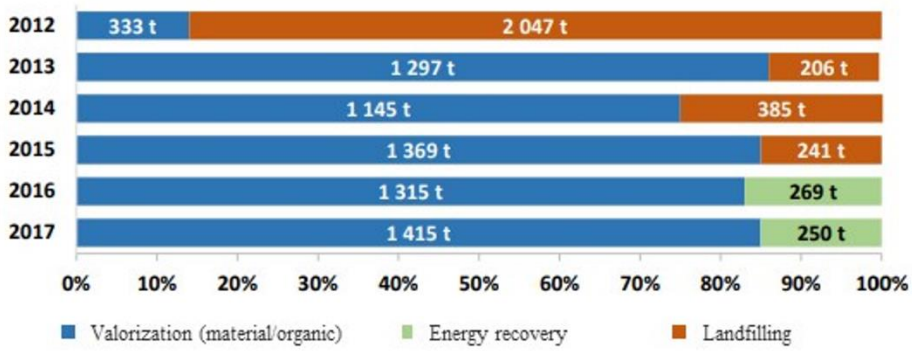
The Eco-Centre – collection and selective disposal of bulky waste, electrical and electronic equipment waste, tyres and oils, among others;

The Organic Composting Centre - the aerobic biodegradation of local organic and green waste with the aim of producing compost with sufficient quality for application in agriculture;

The Transfer Station – collection, compaction and packaging of urban waste and non-hazardous industrial waste collected which cannot be recycled. This waste is further forwarded to an appropriate destination[12].

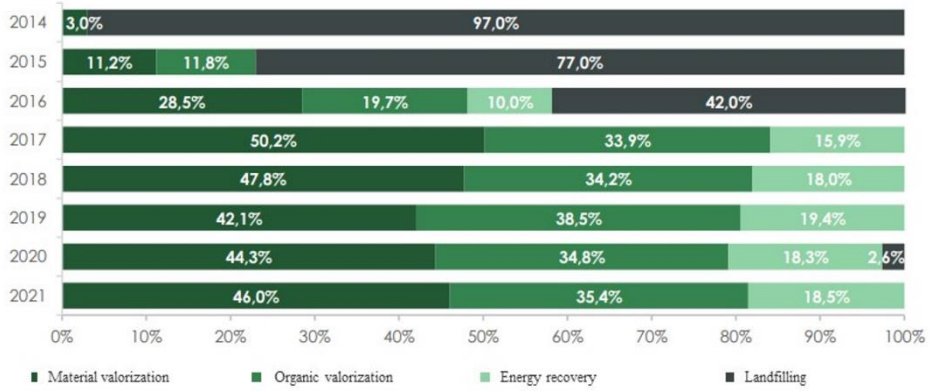
Since opening of Flores CPR and sealing of old dumps, waste recovery on Flores Island began. The centre recycled 14% of its waste in six months of operation in 2012. Followed by the recovery rate of 86% in the following year. In 2016, waste-to-energy recovery began on Terceira Island, allowing Flores CPR to recover all waste received. 83% of the waste was recycled, and the remaining 17% was incinerated on Terceira. Since then, Flores Island has achieved its goal of zero landfill Figure 13.

Figure 13. Valorization of Waste on Island of Flores (Source: Report for the Periodic Review of Flores Island UNESCO Biosphere Reserve 2019)



With the opening of the Flores CPR the valorization of waste increased significantly. After the construction of waste-to-energy recovery on Teiceira Island, the Flores CPR was able to achieve a 100% recovery rate of waste, with 83% of organic and material recovery and remaining 17% of waste being incinerated[13].

Figure 14. Valorization of Waste on Islands of Azores (Source: Direção Regional do Ambiente e Alterações Climáticas)



The overall change in waste recovery is quite noticeable as seen on Figure 6. The overall landfilling on the island has been minimal after the year 2017, which is a positive trend towards a more sustainable and environmentally friendly waste management system on the island (Direção Regional do Ambiente e Alterações Climáticas[14]).

Key take-aways:

- The **policy measures** demonstrate a **multi-faceted approach** that addresses issues such as inadequate waste treatment and disposal solutions, delays in selective waste collection and sorting, and the increase of packaging waste production.
- The implementation of waste taxes promotes integrated waste management and encourages the application of the waste hierarchy.
- As a result of the imposed measures the amount of landfilled waste dropped significantly on the island of Azores.

2.3.2.5. The Green Tax in Maldives

This Green Tax is considered a best practice for sustainable tourism because it addresses the environmental problems caused by the large number of visitors to the Maldives.

Maldives are a popular tourist destination. In 2019 the islands were visited by 1,7 million tourists. The large amount of visitor's attribute to the local environmental problems and put pressure on infrastructure and systems, such as waste management system. For example, it is estimated that one tourist produces 3,5 kg of waste[15].

In order to encourage the islands visitors not to harm the local environment and to fund local sustainable development projects the **government imposed the Green Tax.** All **tourists** who visit the island and **stay at hotels, resorts or vessels are obligated to pay this tax.** The Green Tax came into effort in November 2015. Later on, the law was amended by including also tourists who stay at the guest houses to be obligated to pay the tax. Another amendment which came into force in 2023 includes also hostels and other tourist establishments. For tourists' resorts, hotels and vessels the visitors need to pay between 3 - 6 USD per day of stay depending on the establishment[16].

The **tourist organizations and establishments**, which are **liable for the Green Tax are automatically registered** for it from the day they are issued their operating license issued by the Ministry of Tourism. In case of foreign tourist vessels, the local agent is responsible for the registration for the Green Tax. In that case, both the payment of the Green Tax and the filing for **tax returns** is done via the local agent. The tax paid in US Dollars and is collected on a monthly basis, or before the 28th of the following month[17]. In case the Green Tax is not paid by the required deadline and/or the Green Tax return is not filed on time, the establishment may receive a fine from the **Commissioner General.** The Commissioner General, in this case, acts in accordance of the relevant Tax Administration Act (Section 65 and 66)[18].

The **Green Tax is collected into the Green Fund**. The Green Tax report is published on a monthly basis on the Ministry of Finance's webpage[19]. The report provides the amount of Green Tax collected by atoll/city and establishment type, and the expenditures from the Maldives Green Fund by project. In February 2023 Maldives collected around 5,7 Million US Dollars (89,6 Million MRV) in Green Tax. The **Green Tax was used for coastal protection projects, small scale waste-to-energy plant, water and sewerage system[20].**

Key take-aways:

- The Maldives government has imposed the Green Tax on all tourists who visit the islands and stay at hotels, resorts, vessels, and guest houses
- The enforcement of the policy is well-defined, with tourist organizations and establishments automatically registered for the tax upon receiving their operating license, and a penalty for non-compliance.
- The collected tax is used for water and sewage systems, coastal protection and waste management solutions.
- The Green Tax is collected into the Green Fund. The collected amounts and use of proceedes are published on a monthly basis.

2.4. Overall recommendation and conclusion

Within the framework of this policy analysis, the goals, programs, work plans, and policy instruments that support economic development have been studied, and the policy environment common to tourism, food, packaging, and waste sectors and sectors has been studied.

Looking at the documents such as Mongolia's development policy, main directions, and government action program goals, it is relatively well reflected in the action plan for the implementation of goals and activities supporting green development and energy efficiency. It includes a separate chapter on promoting green development, and in doing so, it focuses on cross-sectoral issues such as climate change, water, waste, green procurement, and green technology. In addition, the goals and activities of the Vision 2050 development policy document aligned with the short- and medium-term feasibility studies are well reflected in the 2020-2024 action program of the Government of Mongolia. Left out of the government's plan, but the primary regulations to ensure implementation include green procurement from scratch and economic incentives for environmentally friendly and cost-effective advanced clean and green technologies.

In the food and packaging industry, there is no definition or unified direction on how activities, appropriate practices, and certificates are aligned with the principles of economic CE. Some regulations that support economic CE have developed as a separate industry, not always in line with the objectives and activities of

the industry (Organic Law, Customs, National Tax Administration, etc.) due to lack of coordination with other incentive mechanisms, weakens the power of the policy instruments supporting those economic development and has a negative effect. For this reason, the target industry, which is food service in the hospitality industry and grocery stores, has little experience in making green purchases (GAP-labeled and organic products), handling packaging with minimal waste to the environment, etc.

It was flawed that the waste targets and planned activities focused only on waste reduction or measures taken after it had already become waste. In order to implement the CE comprehensively, it seems that the infrastructural issues aimed at saving resources at the stages before it becomes waste, supporting long-lasting products, supporting new types of eco-friendly products and putting waste into economic circulation have been neglected. In particular, it was noticed during the qualitative interview and policy analysis that it is necessary to pay attention to the economic return or the cost of supplying the generated waste to the recycling center, especially in the target industry, tourist camps, and scenic spots. It is commendable that the contents of the feasibility study, such as waste management, use of renewable energy, non-pollution of nature, etc., are included in the mandatory MNS standards for tourist camps. But on one hand, there are provisions related to MSMEs, and on the other hand, regulations and infrastructure to ensure implementation but it was not enough. Therefore, since 2023, the Ministry of Environment and Tourism has started to take over the role of environmental control, so it is believed that it will focus on the compatibility of regulations and standards, its implementation, monitoring and evaluation. In addition, the content of sustainable tourism development has already been included in the strategic plan of the sector, but the detailed plan and measurement indicators and M&E of environment have not been defined.

Regarding the policy objectives currently in place within the target sectors and the policy instruments supporting CE in their regulatory environment, the report has identified a total of 7 policy instrument. In detail, 2 in the cross-sector, 2 in the tourism sector, 2 in the food sector, 1 in the packaging sector, and 2 in the waste sector. The identified existing policy instruments is summarized below by CE criteria and type. When defining these policy instruments, they were considered to be policy instruments if their implementation status or policy-level regulations to ensure implementation were clear. If laws included provisions on support to CE, the report is identified but not included in policy instruments if no practical regulations released or M&E of such provision is unclear.

Table 24. Policy instruments

	Control and Regulatory Tools	Economic Tools	Training and Information Tools
Resource Efficiency	Standards for Tourism in Tourist Camps, Resorts and Protected Areas (MNS 6042 : 2019; MNS 6426 : 2013) Standards for organic food production		
Prevention and Reduction of Pollution and Waste	Customs standards Ban single-use plastic bags Standards for Tourism in Tourist Camps, Resorts and Protected Areas (MNS 6042 : 2019; MNS 6426 : 2013) Standards for organic food production	The Green Loan Fund	
Green Transformation	Government Green Procurement (Pending)	Procedures for rewarding citizens, enterprises, and organizations that introduce environmentally friendly	GAP labeling Certification and labeling of

		advanced methods and technologies The Green Loan Fund	organic products

Judging from the above table, economic policy tools have not been defined in the direction of saving resources and preventing and reducing pollution and waste. In detail, even though the objectives and legal environment to provide some kind of economic incentives (incentives, discounts) for practices that save natural resources and energy resources, reduce waste, and prevent environmental pollution, the environment to ensure implementation has not been significantly formed or defined.Economic incentives include tax breaks or penalty arrangements, loans, trust funds, and subsidies. Among the policy levers currently in place during the policy analysis, measures that can be used as economic policy levers to support CE are summarized below.

Economic incentive policies to support SMEs (loans and tax credits)

1. Industry policy documents, including the Mongolia Visit Year and Tourist Recovery Strategy Plan, including credit programs
2. Loans in the food industry, containers and packaging provided within the framework of the Food Revolution movement

The above-mentioned currently planned and implemented incentives can incorporate the following CE objective

1. Principle: Provide more incentives for green operations or generally require the implementation of basic energy efficiency practices.
2. Amount: Grant a certain percentage of subsidies to support feasibility studies
3. Requirement: Set targets and include in the contract that the CE practices are gradually increased during the period of the bonus or loan
4. Reporting: Create a template to summarize the amount of waste reduced, the amount of resources saved, and the measures implemented as a result of the implementation of the policy tools that support sustainable development, and collect and consolidate the reports and report to the public.

In addition, information and training policy tools have not been defined to support the delivery and implementation of information on resource saving and pollution and waste prevention and reduction control and regulation of economic incentives and discounts to the public. Specifically, it was mentioned many times in the qualitative interviews that information dissemination and public influence activities are not carried out and are not included in the budget plan, and it was said that this is partly related to the fact that according to the Law on State Control, government agencies are no longer able to spend money on advertising.

Therefore, information, propaganda, and cultural measures aimed at the enterprise level should be carried out in the context of special corporate work, as well as coordinated with other policy tools, and comprehensively considered by ensuring cooperation with professional associations and international organizations. It seems to be needed.

Policy instruments supporting the green transition to energy efficiency are relatively well defined, but sector-specific policy instruments for waste, packaging and tourism do not exist. Specifically, the green transition supported by the industry can be implemented as follows.

1. In the direction of waste prevention and resource saving in the packaging industry, review the unapproved but advanced regulations such as the Eco Payment Law, introduce and encourage the

public and enterprises to use environmentally friendly packaging, disposable food and packaging, and such as providing funding for innovative ideas

2. The environmental target program is in line with the 3 principles of the Feasibility Study, and regulations will be introduced and approved from the point of view of making operational plans and regulatory procedures into economic and regulatory levers and tools

According to a study by the Organization for Economic Co-operation and Development (OECD), it is more effective to implement green development programs and economic growth plans in a joint arrangement instead of separately. For example, it has been reported that investing one MNT in green will result in a three-fold economic growth in 2050. In a sense, as shown in the picture below, we should not be too specific about supporting economic growth, but we need to create lever mechanisms, targets, and measurement indicators that provide a comprehensive view of environmental and social issues in each sector.

Figure 15. Sustainable and unsustainable development

As a result of the policy analysis, the target sector, food and packaging sector in the context of the tourism industry related products and services, there is a high need to ensure inter-sectoral coordination in the introduction of the circular approach, and to put green development and CE-related priorities at the same level in the policy environment of each

3. READINESS ASSESSMENT

This part of the comprehensive report presents findings of the Readiness Assessment of producers and service providers in the food, beverage, and accommodation value chains of the tourism industry for adopting CE strategies and approaches. In order to discuss the suppliers' readiness, challenges and opportunities in more detail, the assessment findings are analyzed in two groups depending on the supply chain of tourism and the scope of the project.

The first group includes the readiness of MSMEs in taking up CE strategies and solutions which is assessed in a scope of 11 elements: (i) assets (buildings, structures, real estate), (ii) technology and equipment, (iii) finance/capital, (iv) business culture focused on sustainability, (v) business image and recognition, (vi) human resource competence, (vii) business sustainability strategies and policies, (viii) research and development capabilities, (ix) readiness to establish partnerships and cooperation, (x) availability related to use the raw materials (particular to raw material intensive consumption), and (xi) accounting capacity and readiness (unit product cost, efficiency calculation, material consumption, human resource cost, etc.).

The second group focuses more on the MSMEs and analyses their readiness for taking up CE strategies and opportunities against each of the six proposed CE strategies of (i) increase resource efficiency, (ii) extend the lifetime of products, (iii) shift to service-based models, (iv) recovery after disposal, (v) shift to circular supplies, and (vi) facilitate demand for circular products and services. It was defined at the relevant stage of the product lifecycle. All stages of the product lifecycle, including re-designing, production, consumption, post-consumption, sales and marketing, and purchase, were involved in the analysis.

The readiness assessment involved 400 MSMEs operating in the tourism, food, beverage and packaging industries in Ulaanbaatar, Arkhangai and Khuvsgul provinces. The participating enterprises were grouped into two parts, in which the first group involved 222 MSMEs representing food, beverage and packaging producers or the "producer group", while the second group consists of 178 MSMEs that are considered "service providers" involved in food services (canteens, restaurants, etc.), accommodation providers (hotels, tourist camps, etc.), food and beverage service providers (night clubs, street food, coffee shops, etc.) and food shops. The research findings were analyzed and presented in these two groups of "producers" and "service providers, because producers and service providers (intermediary consumers) have different needs regarding CE readiness, strategy and stages.

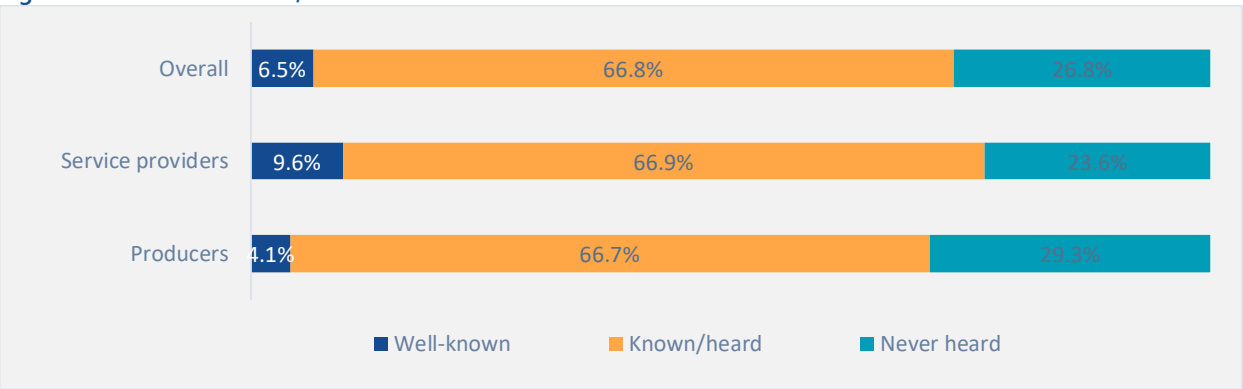
In other words, it was aimed to identify better the differences between the direct consumers (producers) and intermediary consumers (service providers).

3.1. Readiness assessment for adopting CE and taking-up CE solutions – Producers and service providers

Readiness to take up CE solutions means that those MSMEs require having a certain knowledge about CE and sustainability development. The readiness assessment findings show that the concepts of CE and green development were well-known by 6.5% and known or heard by 66.8% of the surveyed producers. The rest, 26.8% of the participating producers, had never heard about CE. No significant difference was observed between the two groups of producers and service providers. The participants' understanding of the CE concepts was mostly related to "waste-sorting and recycling". Additionally, eco- and healthy environment, environmental-friendly and renewable activities were considered as part of CE. However, a significant part

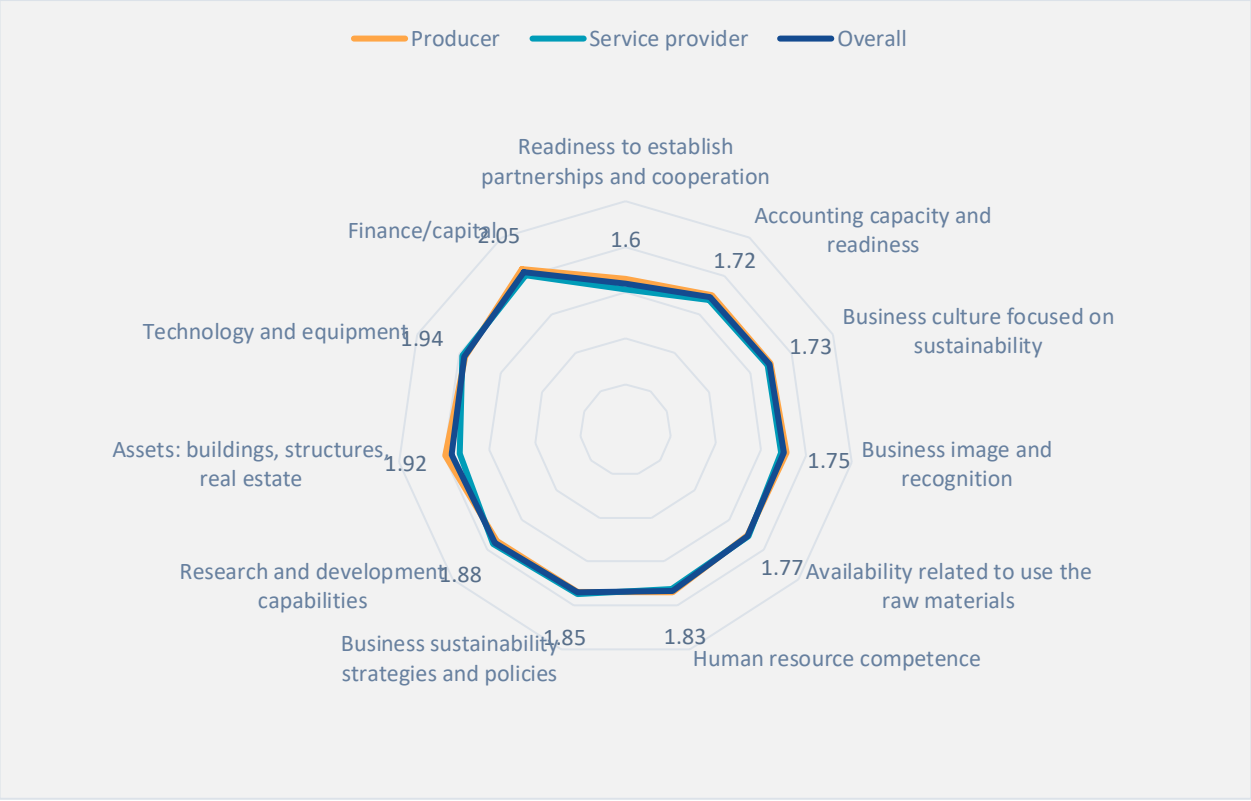
of them have no understanding of CE. It implies that MSMEs lack of full understanding and knowledge of CE and green development.

Figure 16. Awareness of CE, %



The readiness for adopting CE and taking up CE solutions was assessed against 11 elements as mentioned above. There was no significant difference between the two groups of producers and service providers regarding the readiness assessment. The readiness for adopting CE strategies and solutions was evaluated at 1 when MSMEs have "full capacity", 2 for "need to improve", 3 for "poor capacity" and 4 for "not ready at all". In overall, the readiness of MSMEs for adopting CE strategies and solutions was assessed as 1.8 or "need to improve". Among all 11 elements, finance/capital (2.05), technology and equipment (1.94), and assets: buildings, structure and real estate (1.92) were assessed as the lowest. Among others, readiness to establish partnerships and cooperation (1.60), accounting capacity and readiness (1.72), and business culture focused on sustainability (1.73) were evaluated as the highest.

Figure 17. Readiness assessment, average (1=full capacity, 2=need to improve, 3=poor capacity, 4=not ready at all)



There was no statistically significant difference when the readiness for adopting CE strategies and solutions was disaggregated by the amount of the current assets and the year of operation. In other words, MSMEs have similar levels of readiness for adopting CE regardless of the amount of income and the year of operation. There was a difference when it was compared by location of MSMEs whether in Ulaanbaatar or local provinces. The average level of MSMEs' readiness in Ulaanbaatar was 1.7 or "need to improve" while it was 2.1 or "poor capacity" in local provinces.

Figure 18. Readiness assessment, by location, average (1=full capacity, 2=need to improve, 3=poor capacity, 4=not ready at all)

31.3% of the surveyed enterprises did not select "full capacity" out of the 11 elements while 32.8% selected 1-4 elements, 28% selected 5-10 elements, and 8.5% selected all 11 elements or considered having "full capacity".

Table 25. Readiness assessment, in percentage

Elements of readiness	Full capacity	Need to improve	Poor capacity	Not ready at all
0 element	31.3%	15%	62.5%	83%
1 element	9.8%	6%	16%	8%
2 elements	7.5%	7.5%	7.2%	3.3%

3 elements	8.5%	6%	4.5%	2%
4 elements	6.5%	7.5%	2.3%	1%
5 elements	5.3%	11.0%	2.5%	0.3%
6 elements	5%	6.8%	2%	1.3%
7 elements	4.3%	7.2%	1.3%	0.5%
8 elements	5.5%	8%	1%	0.5%
9 elements	4.0%	4.3%	0.5%	0.3%
10 elements	4.0%	7.5%	0%	0%
11 elements	8.5%	13.3%	0.3%	0%
Total	100%	100%	100%	100%

When MSMEs were assessed against the 11 elements of readiness compared by their basic business indicators, the participants who selected "full capacity", especially those located in Ulaanbaatar, who know well about CE, those considered 'service providers', and those who registered their businesses had higher level of readiness than the others.

Table 26. Readiness assessment, average

Indicators	Variables	Average			
		Full capacity	Need to improve	Poor capacity	Not ready at all
Location	Ulaanbaatar	4.44	4.86	0.89	0.35
	Local provinces	1.52	7.09	1.43	0.69
Knowledge about CE	Know well	5.35	4.42	0.88	.12
	Have heard	3.73	5.41	1.10	0.39
	Never heard	3.45	5.55	0.82	0.62
Type of participant	Producers	3.54	5.70	1.08	0.37
	Service providers	4.03	4.99	0.93	0.51
Whether the business is registered or not	Yes	3.92	5.36	0.92	0.39
	No	1.91	5.66	2.09	0.84

Assets: buildings, structures, and real estate

The readiness of assets of the surveyed MSMEs for adopting CE strategies and solutions was assessed as 1.92 or at the level of "need to improve". More particularly, 28% of the surveyed enterprises have "full capacity", 50.5% need to improve, 10.8% have poor capacity, 5.3% are not ready and 4.5% were not able to assess their readiness regarding the assets. When the basic indicators of their businesses were compared with the readiness of assets, MSMEs operating in Ulaanbaatar, those who have good knowledge about CE, service providers, and those who officially registered their businesses had higher levels of readiness of assets than other enterprises.

Figure 19. Readiness of assets

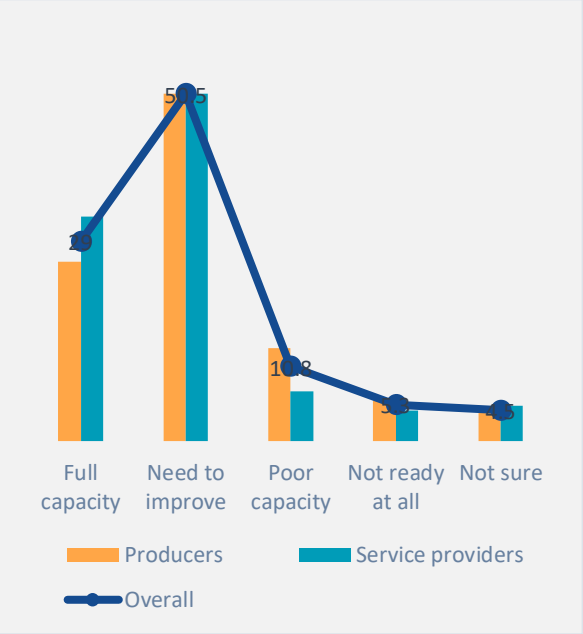


Table 27. Readiness of assets

Location	Ulaanbaatar	1.84
	Local provinces	2.17
Knowledge about CE	Know well	1.62
	Have heard	1.94
	Never heard	1.95
Type of participant	Producers	1.99
	Service providers	1.83
Whether the business is registered or not	Yes	1.88
	No	2.33

A total of 94,491 business entities are operating in Mongolia according to the 2020 business registration statistics. 2.5% or 2,361 of them provided accommodation (hotels, et.) and food services. By 2020, there were 455 accommodation service providers in Mongolia and 44 of them have ratings of three and more stars, 18 have two stars, and 393 have 1 star or no ratings. Accommodation service providers in the tourism sector of Mongolia mostly operate during the warm seasons. Hence, the accommodations have poor insulation and use a high amount of natural material. Regarding the context of Mongolian tourism, "ger camps" provide a significant portion of accommodation services. Accommodation services in most tour destinations have no access to the energy supply as those areas are not connected to infrastructure and the semi-infrastructure is costly. These conditions create inefficiency in terms of resource use for accommodation services. Recently, the application of passive houses in tourism services tends to grow because of the increased financial support through "green loan" opportunities. Promoting passive houses can be an opportunity for adopting CE strategies of resource efficiency, reducing heat loss, and extending the lifetime of accommodation.

Readiness of technology and equipment

The readiness of the surveyed MSMEs' technology and equipment for adopting CE strategies and solutions was assessed as 1.94 or "need to improve". More particularly, 28% of the participants had full capacity, 52.8% need to improve, 9.3% have poor capacity, 6.5% are not ready, and 3.5% answered "do not know". When the readiness of technology and equipment was disaggregated by the basic indicators of their businesses, MSMEs operating in Ulaanbaatar, those who have good knowledge about CE, producers, and those who officially registered their businesses had higher levels of readiness of technology and equipment than other enterprises.

Figure 20. Readiness of technology and equipment

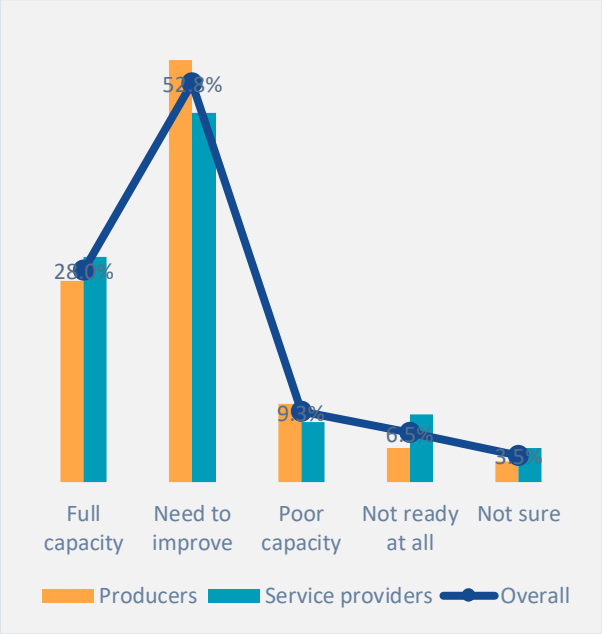


Table 28. Readiness of technology and equipment,

Location	Ulaanbaatar	1.83
	Local provinces	2.28
Knowledge about CE	Know well	1.69
	Have heard	1.99
	Never heard	1.87
Type of participant	Producers	1.93
	Service providers	1.96
Whether the business is registered or not	Yes	1.92
	No	2.24

As mentioned in research on MSMEs' business environment, the most needed support for MSMEs was identified as "equipment". For instance, only 7.2% of MSMEs purchased new equipment for last two years. With the help of new equipment, the quality of products and labor efficiency are improved. There is also a high necessity among enterprises for upgrading workplace (IRIM, 2021).

MSMEs lack equipment for adopting CE concepts and strategies due to financial limitations. In addition, the progress of digital transition among MSMEs is slow regarding their insufficient level of digital literacy. As emphasized in research on MSMEs' business environment, they are not able to take full advantage of online market and digital technology opportunities. 27.2% of the surveyed MSMEs have digital account on their business title, 36.2% have leaflets about their organizations or products, and 23.2% have digital payment tools such as pos machine, QR, Monpay, and Socialpay.

Readiness of finance / capital

The average level of MSMEs' readiness of finance/capital was assessed as 2.05 or "poor capacity". In other words, 20.8% of the participants have full capacity, 53.5% need to improve, 15.8% have poor capacity, 5% are not ready at all, and 5% were not able to assess their readiness for adopting CE. When this element was disaggregated by the basic indicators of their businesses, MSMEs located in Ulaanbaatar, those who have

good knowledge about CE, service providers, and those who officially registered their businesses have higher levels of readiness regarding finance/capital than the other participants.

Figure 21. Readiness of finance / capital

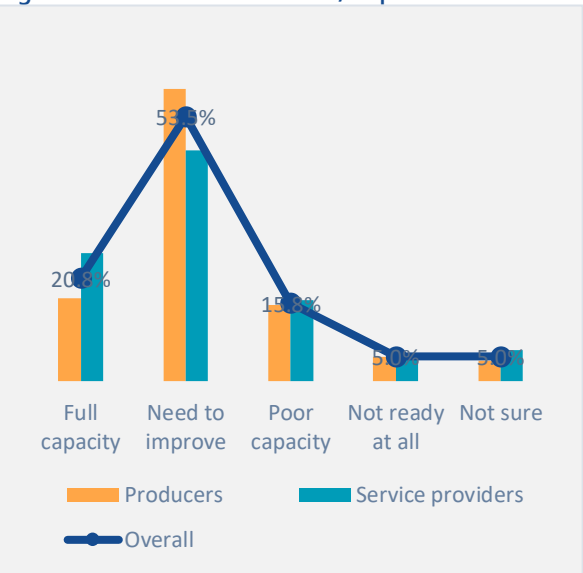


Table 29. Readiness of finance / capital

Location	Ulaanbaatar	1.94
	Local provinces	2.39
Knowledge about CE	Know well	2.00
	Have heard	2.07
	Never heard	2.03
Type of participant	Producers	2.09
	Service providers	2.01
Whether the business is registered or not	Yes	2.01
	No	2.52

As mentioned in a research report on MSMEs' business environment, 22.8% of the surveyed entrepreneurs produce financial reports, 7.2% pay social insurance for their employees, 14.9% are registered as VAT payers, 21% have submitted proposals for financial support to the government and donors, and 13.4% have separate business accounts. Regarding these conditions of poor financial reporting and accounting, MSMEs have challenges in meeting loan requirements (IRIM, 2021).

For the MSMEs participating in the readiness assessment, they expect that introducing CE strategies would be costly.

Readiness of business culture focused on sustainability

The readiness of MSMEs' business culture focused on sustainability was assessed as 1.73 or at the level of "need to improve". In particular, 39% of the surveyed enterprises have full capacity, 48% need to improve, 7.5% have poor capacity, 2.5% are not ready at all, and 3% were not able to assess their readiness. When the readiness of business culture focused on sustainability was disaggregated by the basic indicators of their businesses, those located in Ulaanbaatar, those who have better knowledge about CE, and those who have officially registered their businesses have higher levels of readiness than the others. There was no significant difference between producers and service providers regarding the readiness of business culture focused on sustainability.

Figure 22. Readiness of business culture focused on sustainability

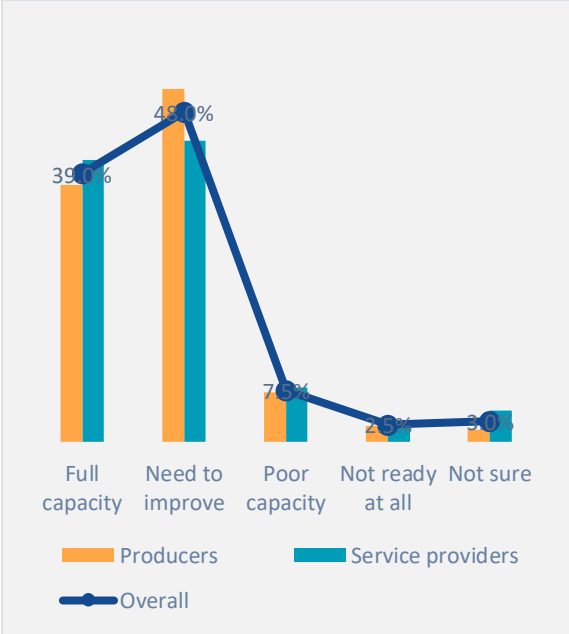


Table 30. Readiness of business culture focused on sustainability

Location	Ulaanbaatar	1.63
	Local provinces	2.03
Knowledge about CE	Know well	1.42
	Have heard	1.71
	Never heard	1.85
Type of participant	Producers	1.74
	Service providers	1.71
Whether the business is registered or not	Yes	1.68
	No	2.22

For the surveyed MSMEs' readiness to adopt CE, business culture focused on sustainability had the highest rate among all other elements of readiness. Producers and service providers tend to perceive it as an "environment-friendly and healthy condition".

In 2009, "General Requirements for Tourist Camps, Resorts, and Ger camps" came into force. This standard was amended in 2019 and named "General Requirements for Resorts and Tourist Camps" which has been implemented since 2020. The amended standard sets out new requirements as "special and ordinary protection zones of places with a capacity of more than 20 people that have treatment facilities, waste sorting points, and water reservoirs shall comply with water source hygiene zone rules; have water use conclusion; obtain water use permits; install a water meter on each water source, well, and inlet pipe; provide at least 20% of energy consumption from renewable energy; serve with food products transported and stored at the health and hygiene standard; ensure fire safety; place primary fire extinguishing tools; and ensure that emergency vehicles enter the place without any barrier. A separate standard for ger camps is being developed and it has not been finalized yet. However, the implementation of the standards is not inadequate for MSMEs operating in the tourism sector. Customers are unsatisfied with waste management

and sanitary facilities of the main tourist destinations, roads, and services and temporary accommodation points on main roads.

On the other hand, it was observed during the data collection that a number of MSMEs are attempting to initiate and implement CE principles. For instance, there are cases of refusing the use of plastics, and if used, plastics are collected and delivered to recycling plants.

> … We refuse to use products with plastic packaging. Everything in the house, such as decoration and furniture, is made of wood and natural materials. There are no trash cans at the camp. The resulting waste is mostly raw material packaging. Raw materials are purchased in as large packaging as possible, and the packaging is sorted and sent to local landfills, but it is not clear whether this waste generated locally goes to a recycling plant. Fresh water is usually taken in 5-liter bottles instead of small bottles, and tourists are given reusable water bottles. But the 5-liter plastic water bottle is not thrown away, it is reused by local herders (for milk, etc.) and goes into circulation.
>
> Case study 2

Generation of wastewater is high in the tourism sector and some negative actions are common such as open dumping and pouring into the river. One of the surveyed MSMEs has introduced certain solutions for more efficient use of fresh water.

> … Tourists save water by having their bodies wiped with a wet towel soaked in essential oil and having their hair washed, which is a relaxing service in their accommodations without taking a shower. It meets the needs of European tourists who are increasingly interested in eco-friendly travel and services.
>
> Case study 2

The most challenging issue facing foreign tourists traveling in Mongolia is the availability and sanitation of public toilets. Additionally, soil pollution is high at the main tour destinations due to the dominance of pit toilets.

> …The nomad ger camp solved its pit latrines without any chemicals, using natural methods and without any impact on the soil. In other words, they dig a 1.4 m hole in the toilet and place straws on top of it to filter /separate the liquid from the thick parts. There is no other garbage in the toilet, such as toilet paper, and it has no smell, and the soil turns into brown dirt or compost the following year.
>
> Case study 2

The following actions are taken in reducing waste from plastic packaging in the tourism sector:

> … It is difficult to control the packaging of raw materials. Food products in large packages spoil, and in small packages, there is less food waste. Our hotel is preparing to order 10,000 paper bags. In order to reduce the amount of plastic bags used in the summer, I first tried to eliminate plastic bags. As people refuse plastic bags, there is an opportunity to resuse waste paper.
>
> A representative of interviewees

Readiness of business image and recognition

The readiness of MSMEs' business image and recognition for adopting CE and taking up CE strategies was assessed as 1.75 or at the level of "need to improve". In particular, 38% of the respondents had full capacity, 47.8% need to improve, 8% had poor capacity, 3% are not ready at all while 3.3% were not able to answer the question. When this element was compared with the basic indicators of their businesses, MSMEs operating in Ulaanbaatar, those who have better knowledge about CE and those who officially registered their businesses have higher levels of readiness regarding the business image and recognition. Producers and service providers have not much difference in terms of this element.

Figure 23. Readiness of business image and recognition

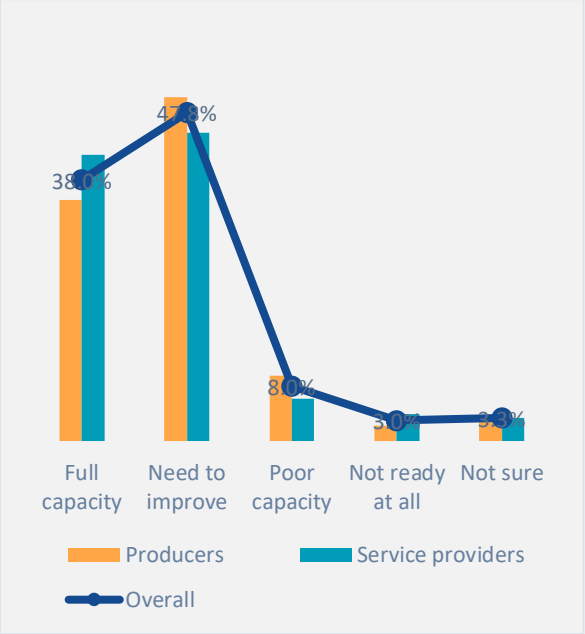


Table 31. Readiness of business image and recognition

Location	Ulaanbaatar	1.63
	Local provinces	2.14
Knowledge about CE	Know well	1.62
	Have heard	1.74
	Never heard	1.81
Type of participant	Producers	1.78
	Service providers	1.72
Whether the business is registered or not	Yes	1.72
	No	2.10

The surveyed MSMEs have an expectation that their business image and recognition will be improved when they adopt CE principles because it was noted by the interviewees that tourists will take it more pleasantly if the resorts and services apply water and energy-efficient and environmental-friendly solutions and technologies.

Readiness of human resource capacity

The readiness of MSMEs' human resource capacity for adopting CE was assessed as 1.83 or at the level of "need to improve". More particularly, 34% of the surveyed MSMEs have full capacity, 48.8% need to improve, 11.3% have poor capacity, 3.5% are not ready at all, and 1.8% were not able to answer. When this element was disaggregated by the basic indicators of their businesses, entrepreneurs who have better knowledge about CE and those who officially registered their businesses show higher levels of readiness of human capacity than the other groups. There was no significant difference between producers and service providers in terms of human capacity.

Figure 24. Readiness of human resource capacity

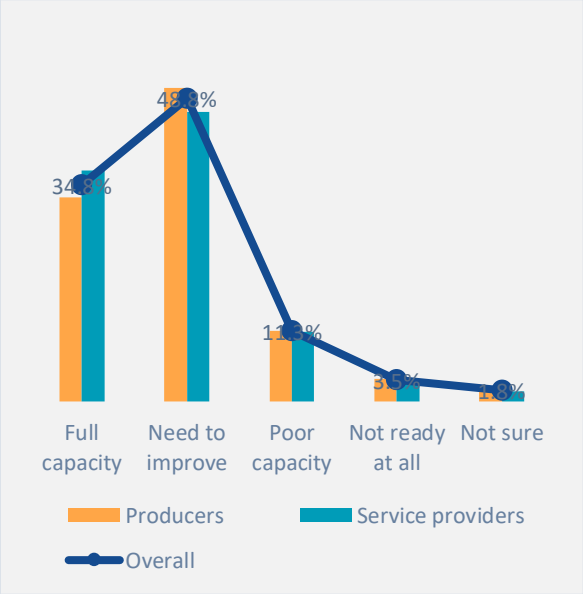


Table 32. Readiness of human resource capacity

Location	Ulaanbaatar	1.77
	Local provinces	2.03
Knowledge about CE	Know well	1.85
	Have heard	1.82
	Never heard	1.86
Type of participant	Producers	1.85
	Service providers	1.81
Whether the business is registered or not	Yes	1.81
	No	2.03

According to the workforce survey at the end of 2020, hotels, accommodation, and food services had 30,0 thousand employees which occupies the 2.6% of the total national workforce. The number of employees in these sectors decreased by 6.3 thousand people or 17.3% than the previous year. In 2020, 68.2% of the total number of employees in food and accommodation services was female and 31.8% were male. In addition, 19.1 thousand or 63.7% of the total employees in these sectors were in Ulaanbaatar, 2.7 thousand or 8.9% were in the western region, 4.3 thousand or 14.5% were in Khangai region, 2.5 thousand or 8.4% were in Central region, and 1.3 thousand or 4.5% were in the eastern region.

All respondents emphasized that education on CE and sustainable development was inadequate in Mongolia.

Readiness of business sustainability strategies and policies

The readiness of MSMEs' business sustainability strategies and policies for adopting CE was assessed as 1.85 or at the level of "need to improve". More particularly, 30.8% of the respondents have full capacity, 52.5% need to improve, 9% have poor capacity, 3.8% are not ready and 4% were not able to answer. When this element was disaggregated by the basic indicators of their businesses, MSMEs that are located in Ulaanbaatar, those who have better knowledge about CE, and those who officially registered their businesses show higher levels of readiness than the other groups. There was no significant difference between producers and service providers regarding the readiness of business sustainability strategies and policies.

Figure 25. Readiness of business sustainability strategies and policies

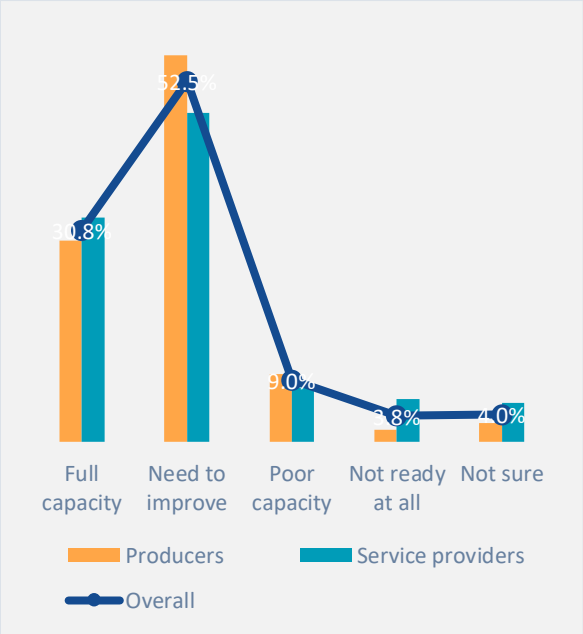


Table 33. Readiness of business sustainability strategies and policies

Location	Ulaanbaatar	1.75
	Local provinces	2.16
Knowledge about CE	Know well	1.58
	Have heard	1.87
	Never heard	1.87
Type of participant	Producers	1.84
	Service providers	1.87
Whether the business is registered or not	Yes	1.82
	No	2.20

Regarding the announcement of 2023 as the year of "Welcome to Mongolia", tourist camps plan to renovate their facilities. However, renovating facilities requires a high amount of investment for those MSMEs, but the financial capabilities are limited.

"Sub-decree on incentivizing citizens, business entities and organizations that introduced environmental-friendly and advanced technologies and approaches" was updated by Government Resolution #270 on September 27, 2017. This regulation allows the selection and incentivization of citizens, business entities and organizations that have adopted harmless, safe, pollution- and waste-free technologies and solutions that contribute to environmental protection, efficient use of natural resources, supporting natural regeneration, and reducing negative and harmful impacts on the environment. The selected entities are awarded "Green Certificate" and the selected products are awarded "Eco Label". Those entities are granted with the following incentives:

- Promotion through media and participation in domestic and international exhibitions.
- Nomination for national and international environmental awards.
- Inclusion in green loans and other local and foreign subsidized loans and investments.
- Higher preferences in the selection of entities for the purchase of goods, works, and services with state and local property funds in accordance with the law.
- Mediation to international organizations with similar advanced technologies for cooperation.
- Provision of professional and technical assistance in developing national standards and adopting international standards to the national context.
- Inclusion in the list of environmental-friendly technologies and equipment that are aimed at using natural resources more efficiently and reducing environmental pollution and waste, as well as other supports provided by the law.

However, MSMEs are not able to take benefits from these opportunities in reality.

Readiness of research and development capabilities

The readiness of MSMEs' research and development capabilities for adopting CE strategies and solutions was assessed 1.88 or at the level of "need to improve". More particularly, 31.5% of the surveyed participants have full capacity, 48.3% need to improve, 10.8% have poor capacity, 4.8% are no ready at all, and 4.8% didn't know. When it was disaggregated by the basic indicators of their businesses, MSMEs located in Ulaanbaatar, those who have better knowledge about CE, service providers, and those who officially registered their businesses have slightly higher levels of readiness than the other groups.

Figure 26. Readiness of research and development

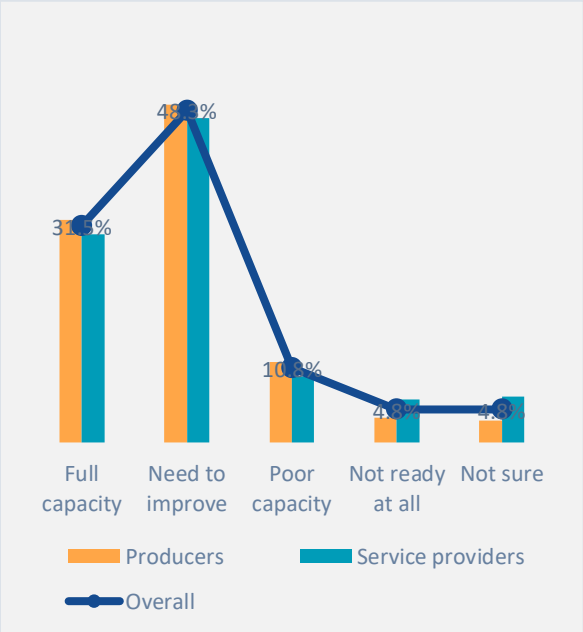


Table 34. Readiness of research and development

Location	Ulaanbaatar	1.77
	Local provinces	2.26
Knowledge about CE	Know well	1.65
	Have heard	1.89
	Never heard	1.92
Type of participant	Producers	1.86
	Service providers	1.91
Whether the business is registered or not	Yes	1.85
	No	2.23

Although MSMEs are aware of the importance and advantage of introducing CE principles and strategies, the inadequacy of knowledge and information about CE diminishes the capabilities of research and

development in this area. Only few numbers of MSMEs have done research and adopted certain CE principles, but the success is not satisfactory. This is also resulted by the poor coordination and cooperation among research organizations and MSMEs.

Readiness of establishing partnerships and cooperation

The readiness of establishing partnerships and cooperation among MSMEs was assessed at 1.60 or at the level of "need to improve". For instance, 47.8% of the respondents have full capacity, 42.3% need to improve, 4.8% have poor capacity, 2.3% are not ready at all, and 3% were not able to answer. When the readiness of establishing partnerships and cooperation was disaggregated by the basic indicators of their businesses, MSMEs located in Ulaanbaatar, those who have better knowledge about CE, and those who officially registered their businesses have higher levels of readiness compared to the other groups.

Figure 27. Readiness of establishing partnerships and cooperation

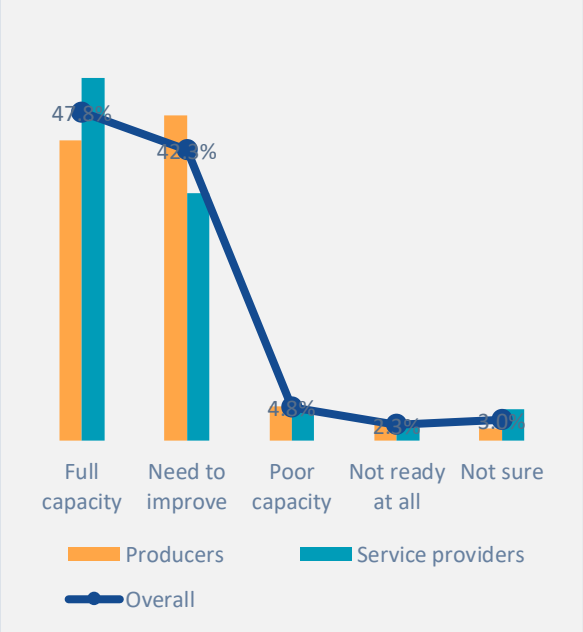


Table 35. Readiness of establishing partnerships and cooperation

Location	Ulaanbaatar	1.53
	Local provinces	1.84
Knowledge about CE	Know well	1.31
	Have heard	1.59
	Never heard	1.71
Type of participant	Producers	1.65
	Service providers	1.54
Whether the business is registered or not	Yes	1.56
	No	2.06

As emphasized by the surveyed MSMEs and interviewed stakeholders, partnerships and cooperation around CE is "very poor" at all levels. This condition has significant impacts on all other enabling factors for introducing CE into the sector.

Readiness related to the use of raw materials

The readiness related to the use of raw materials among MSMEs was assessed as 1.77 or at the level of "need to improve". More particularly, 37.8% of the surveyed MSMEs have full capacity, 45.8% need to improve, 8.5% have poor capacity, 3.5% are not ready at all, and 4.8% were not able to answer. When it was disaggregated by the basic indicators of their businesses, MSMEs located in Ulaanbaatar, those who have better knowledge about CE, and those who officially registered their businesses have slightly higher levels of readiness compared to the other groups.

Figure 28. Readiness related to the use of raw materials

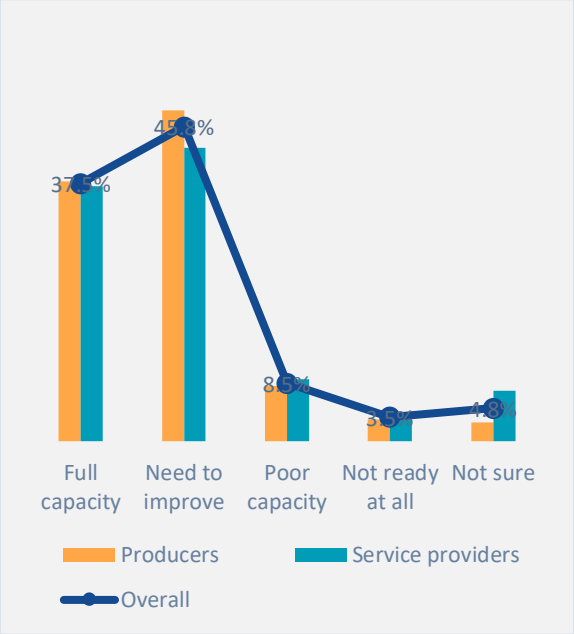


Table 36. Readiness related to the use of raw materials

Location	Ulaanbaatar	1.69
	Local provinces	2.02
Knowledge about CE	Know well	1.44
	Have heard	1.76
	Never heard	1.88
Type of participant	Producers	1.76
	Service providers	1.78
Whether the business is registered or not	Yes	1.74
	No	2.10

According to the research on the recycled plastic products market in Mongolia, the problems faced in the supply of raw materials are defined as follows:

At present, most of the raw materials are bought through raw material changers. Although there are various campaigns on waste sorting, the government does not make a unified regulation. It is necessary to find a solution involving the government, private sector and citizens.

It is difficult to collect raw materials from the market due to the lack of unified government policy and regulation. In some cases, the availability of raw materials decreases and prices increase.

There are 2-3 dominant companies in the supply of raw materials, and they raise prices at will.

However, they do not supply raw materials that are sorted according to the standards, which can be used directly in production.

Transportation logistics are highly complicated. Transportation costs have increased.

Customs duty is high. Collecting products through customs is difficult and time-consuming.

Accounting capacity and readiness

The accounting capacity and readiness of MSMEs in adopting CE strategies and solutions were assessed as 1.72 or at the level of "need to improve". More particularly, 38.8% of the surveyed MSMEs have full capacity, 48.3% need to improve, 6% have poor capacity, 3% are not ready at all, and 4% were not able to answer. When this element was disaggregated by the basic indicators of their businesses, MSMEs operating in Ulaanbaatar, those who have better knowledge about CE, and those who officially registered their businesses have slightly higher levels of readiness than the other groups. There was no significant difference between the producers and service providers.

Figure 29. Accounting capacity and readiness

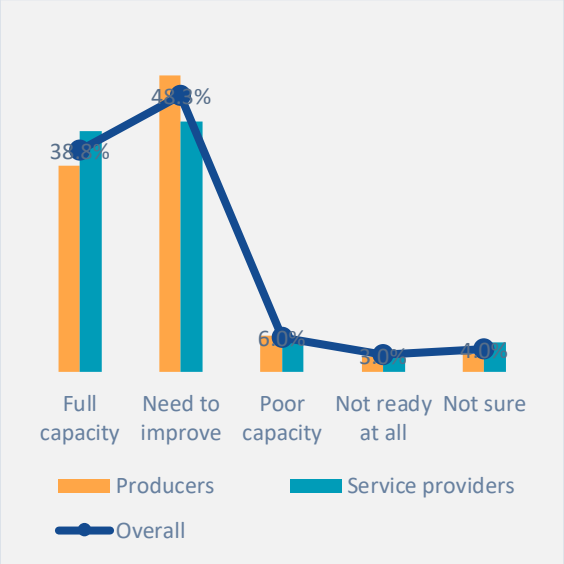


Table 37. Accounting capacity and readiness

Location	Ulaanbaatar	1.64
	Local provinces	1.99
Knowledge about CE	Know well	1.50
	Have heard	1.72
	Never heard	1.79
Type of participant	Producers	1.75
	Service providers	1.69
Whether the business is registered or not	Yes	1.70
	No	1.97

Accounting capacity and readiness for the introduction of CE strategies and solutions is inadequate. For instance, there are no records and calculations at all levels such as information about MSMEs that have implemented energy efficiency strategies and solutions, contributed to reducing greenhouse gas emissions, and how much greenhouse gas they emit during the operation. During the research, we did not find any MSME that records the average amount of plastic waste generated per day.

3.2. Strategies and Steps for Implementing Circular Economy Solutions

The supply side of the circular economy presents numerous challenges, but also opportunities. The analysis was developed with a focus on micro, small, and medium enterprises, as well as circular economy strategies and opportunities. These include increasing resource efficiency, extending product life, transitioning to a service-based model, recycling waste, adopting circular supply practices, creating circular products, and stimulating demand for services. Each category and its relation to the relevant stages of the circularity cycle were taken into consideration.

In order to introduce the circular economy to micro, small, and medium enterprises (MSMEs), MSMEs of the same or different sectors can exchange knowledge and information with each other, with research institutions, and through partnerships and collaborations. They can also access technology and financing, or external support for other projects, and consulting services from external firms. However, the most

important factor is the MSMEs' motivation to implement circular practices, especially the desire to initiate change and take active measures.

This offers numerous advantages and opportunities to MSMEs that have adopted the circular economy approach. These benefits encompass enhanced brand reputation, lowered operating expenses, business expansion, heightened productivity, ecological compatibility, and augmented sustainability (Prieto-Sandoval et al., 2018). Active engagement of MSMEs throughout all phases of their product's life cycle empowers them to recognize the potential economic, environmental (climate, ecosystem, hazards), and social (employment, gender) associated with each stage of the product and its services. Consequently, it will become feasible to suggest suitable circular economy practices that tackle the concerns at each pertinent stage of the product cycle.

Furthermore, this analysis employs the 9R principle (Reject, Rethink, Reduce, Reuse, Repair, Renovate, Remanufacture, Reuse, Recycle, Recover) to explore opportunities along supply chain and different stages of the product cycle. The focus is on the relevant "R" principles corresponding to specific phases of the product or service cycle.

It is important to note that other tools and enabling factors that support the circular economy—such as the policy environment, technology, and financial services—are not included in this readiness assessment. First, these external factors propel MSMEs toward a more circular state by serving as both facilitators and regulators, sometimes concurrently. Second, these enabling factors have been examined in other sections of this report, including policy evaluation and stakeholder assessment. While these assessments are mentioned in this section, they are not discussed in depth.

Additional facilitators, such as capacity building for the circular economy, are highlighted in this chapter as crucial mechanisms and solutions to challenges. Drawing on the outcomes of the supply and demand assessment group, which presented research findings involving suppliers and consumers, the analysis was divided into two subgroups: the supply side and the consumer side.

Table 38. The 9R Principles of the Circular Economy

The 9R Principles of the Circular Economy
The principle of **Rejection** involves avoiding products and services that are unnecessary and unsustainable (cannot be recycled or reused). However, the feasibility of rejection relies on the availability of sustainable options and the capacity of potential suppliers.
Rethinking principles encompass selecting recyclable materials (bio-based ingredients, recyclable or natural packaging, etc.), optimizing manufacturing processes for more efficient resource and energy utilization (fuel-saving in transportation, etc.), adopting a mindset to choose materials with lifecycle-closing solutions (storage logistics, waste avoidance, etc.), and integrating these practices into procurement, production, and product/service development.
The principle of **Reduction** focuses on identifying and implementing alternatives that exert minimal pressure and impact on resources and energy across all stages, from design to production and consumption.
Reuse entails ensuring that products, their components, or the materials they contain can be reused or repurposed without requiring extensive repair or renewal. Repair involves restoring a product to full functionality for its original purpose by repairing or replacing damaged parts.
Remanufacturing refers to reusing components from used products by disassembling, inspecting, reassembling, and testing them in the manufacturing process.
Repurposing is the practice of reusing old or discarded components, materials, and products for new purposes

3.2.1. Challenges and Opportunities in Implementing Circular Economy Solutions for Food, Beverage, and Packaging Manufacturers and Service Providers in the Tourism Sector

According to the study's findings, greater **emphasis is placed on waste management** among manufacturers. The perception of MSMEs regarding the Circular Economy reveals that other strategic aspects of the Circular Economy, such as extending product lifespans, transitioning to service-based models, adopting circular supply practices, and stimulating Circular Economy demand, **tend to be overshadowed.** While this situation presents challenges to Circular Economy adoption, it also offers opportunities to enhance Circular Economy's capacity to overcome these hurdles.

To facilitate the implementation of the Circular Economy, MSMEs within the same or different sectors can engage in knowledge-sharing and information exchange among themselves and with research institutions. Taking advantage of support from other projects and programs funded by donors through partnerships, collaborations, technology access, financial assistance, and consulting services all contribute to the

successful integration of circular economy practices for MSMEs. Central to this effort is the motivation to embrace circular practices, particularly the willingness to initiate change and proactively take steps forward.

It is crucial to consider the relationships between manufacturers, their suppliers, and customers when proposing Circular Economy strategies to the "producer" entities. This approach ensures that MSMEs play a pivotal role and don't overlook the actionable principles of the Circular Economy. For example, the notion of "resource efficiency" involves optimizing both resource and energy usage throughout the production phase, making it a solution that encompasses both modeling and production stages.

The "Moving to a service-based model" strategy entails manufacturers offering products to customers as services, with suppliers delivering products as services during the consumption stage. Conversely, the "recovery after disposal" strategy concentrates on waste management, encompassing both solid waste and wastewater, during the post-consumer and manufacturing phases of the product life cycle. The "circulating supply" strategy is more applicable at the procurement stage, aiming to enhance the environmental sustainability of the supply chain or transition to a model where resources and energy are circular. The "satisfying the demand for circular products and services" strategy pertains to stages such as purchase, sales, marketing, production, and consumption, targeting both consumers and suppliers.

The first supply group includes enterprises from food, beverage, packaging producers, and food production and services (canteens, restaurants, etc.). It should be noted that food production and services are evaluated as producers as they make “tangible” products: food (taking away, eating on site, etc.), drink, and packaging products.

The second supply group, known as intermediate users, comprises entities offering services to consumers. Their services encompass food production and services (cafeterias, restaurants), accommodation services (hotels, tourist camps, etc.), food and beverage services (nightclubs, fast food, coffee shops, etc.), and grocery stores. Evaluating the readiness of service providers in this group involves employing the methodology outlined in the first chapter. This methodology encompasses assessing their involvement in the product (service) cycle, exploring the potential for implementing six groups of Circular Economy strategies aligned with specific cycle stages and their corresponding "R" principles. The research also utilizes data, information, and direct observations to inform the analysis.

This supply chain functions as both an intermediary user and a service provider, thereby serving as a bridge connecting suppliers and customers (the end users of food, water, and packaging products). Given the intricate nature of the tourism sector's system, there are notable challenges associated with implementing circular economy strategies and solutions. The six strategies proposed by the circular economy necessitate integration by service providers into the services they offer.

These strategies encompass the following: "Increasing resource efficiency" entails utilizing Resource Efficiency and Cleaner Production (RECP) principles from the design and production stages of products and services to enhance resource and energy efficiency. "Product Life Extension" involves Service Providers actively contributing to prolonging the lifespan of products they employ, encompassing the use phase and post-use phases. "Transition to a service-based model" signifies that service providers adopt service-based models during operational phases as well as in sales and marketing activities. "Post-waste recovery" pertains to an emphasis on waste management practices (both solid and wastewater) with comprehensive solutions

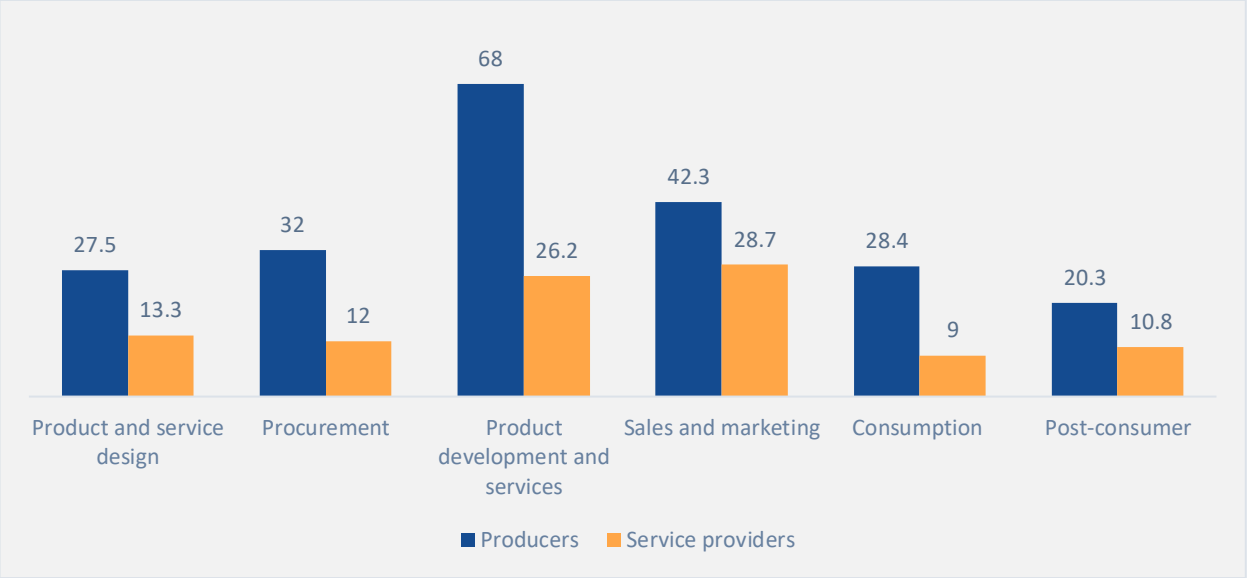
spanning design, operational, and post-operational phases. "Moving to circular supply" linked to design, procurement, and operational phases aims to green the supply chain or facilitate a shift towards more circular resources and energy. "Encouraging the demand for circular products and services" involves a focus on the sales, marketing, production, and usage stages.

Impact on Product and Service Life Cycle Stages:

The majority of MSMEs within the manufacturer group are primarily engaged in manufacturing operations (68%) and sales and marketing activities (42.3%) phases. Across all sectors, the influence on product design remains low (24.7% of participants in the food industry and 40% in the beverage industry). Particularly in the liquid food sector, the emphasis is largely on the purchasing stage (60%), with comparatively less attention on the production phase (20%). Furthermore, approximately 80% of the focus lies on the sales and marketing phase. The attention dedicated to consumption and post-consumption stages in this sector is consistent, both at 20%. Conversely, the food industry is more active in procurement, production, sales and marketing stages, with equal involvement in consumption and post-consumer stages. In essence, the food industry places more emphasis on the production stage, whereas the liquid food industry concentrates more on the sales aspect.

For the intermediate user group, involvement in product (service) cycle stages is approached from a service perspective. Procurement involves obtaining essential products (food, water, beverages, furniture, electronics). The manufacturing or production stage pertains to service offerings like food service in restaurants, food packaging, and guest accommodations. Sales and marketing efforts revolve around attracting a larger customer base. In the post-use stage, waste management from service recipients is addressed. This consideration can encompass aspects of design, such as menu and portion updates, or the design of hotels, restaurants, and rooms. However, calculating service use and resource utilization requires accounting for both customers and the resources and energy (equipment, items, material supply) used to deliver the service. Most companies in the intermediate user group allocate greater focus to sales and marketing (28.7%) and product development and services (26.2%), with relatively less involvement in other phases. In comparison to consumption stages, one notable distinction among service providers is their reduced engagement in the remaining phases. A comparison between urban and local companies yielded similar findings, except that 21.6% of local service providers were engaged in the procurement stage (with similar percentages in product manufacturing and service stages). This discrepancy could be attributed to the higher resource and material procurement needs of local businesses.

Figure 30. Phases of the product cycle that MSMEs focus on



Taking into account the significance attributed by manufacturers and service providers to each stage of the Circular Economy, the aspects of "product and service design" and "post-consumer operations" demonstrate substantial similarity. Nonetheless, this visual representation highlights notable distinctions across "procurement," "production and service of products," "sales and marketing," and "product utilization."

Table 39. Variation in responses based on manufacturer and service provider distinctions

№	Independent Samples Test				
	Variation in responses based on manufacturer and service provider distinctions	Levene's Test for Equality of Variances	t-test for Equality of Means		Statistical discrepancy
		F	t	Sig. (2-tailed)	
1	Product and service design	2.293	0.751	0.453	No
2	Procurement	21.354	2.251	0.025	Yes
3	Product development and services	25.255	4.174	0.000	Yes
4	Sales and marketing	3.319	-1.978	0.049	Yes
5	Consumption	36.122	2.877	0.004	Yes
6	Post-consumer activities	0.091	0.151	0.880	No

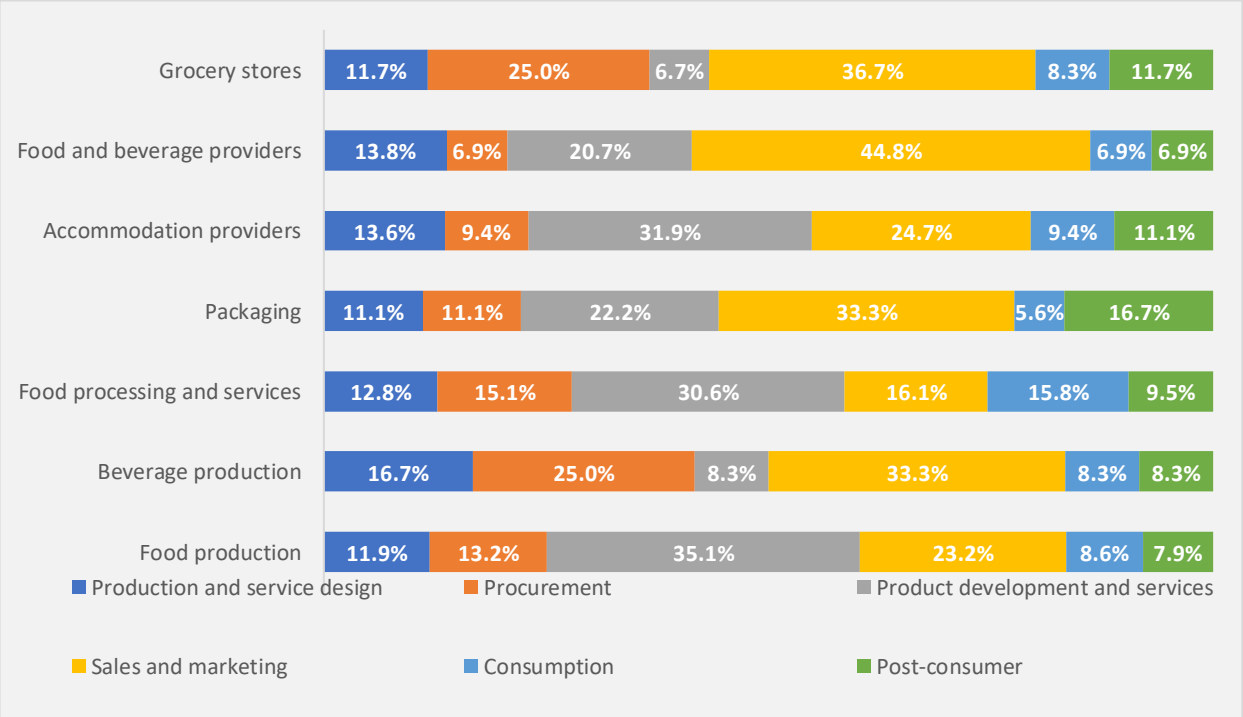
Examining the manufacturers grouped by their respective types of activities, the packaging sector is notably engaged in the procurement and production stages, with full involvement in the sales and marketing phase (100%). In contrast, for other business sectors, a reduced emphasis is observed in the consumption and post-consumer stages of the product life cycle. Neglect of the post-use phase refers to a lack of control or responsibility regarding waste management after product use. Consequently, it becomes imperative for MSMEs to chart out the entire life cycle of their products and services. Given that a majority of MSMEs

concentrate on the production, sales, and marketing phases, the consumption and post-consumer stages of the product often receive inadequate attention, leading to a significant generation of waste.

When examining the Intermediary users – service provider group categorized by their activity types, it becomes evident that this group exhibits a nearly consistent level of engagement in the design, use, and post-use phases of products and services, ranging from 12.5% to 25%. The purchase stage, on the other hand, displays the highest participation rate among grocery stores at 44.1%, underscoring their constant demand for supplies. However, grocery stores tend to be more focused on commercial aspects, engaging in buying and selling goods without extensive processing, as reflected by their 11.8% involvement in the production stage.

Service providers offering production and providers of hotel rooms and camping exhibit a notably high percentage in the production stage at 58.6%, which stands as the highest rate among the various groups. Given the nature of their business activities, this percentage seems reasonable. In contrast, food stores and food service providers are more prominently engaged in the sales and marketing stage, while service providers offering production and providers of hotel rooms and camping demonstrate relatively lower involvement in this stage. This discrepancy could arise from the adaptable business practices of grocery stores and food service providers, allowing them to readily accommodate new sales and marketing strategies.

Figure 31. Participation of MSMEs in Product Cycle Stages by Sector



Source: Manufacturers and Intermediate Users = 400

When assessing whether the stages of the circular economy vary based on the type of MSMEs, it is observed that the significance attributed to the different stages of the circular economy does not show significant differences between the stages of product and service design, and post-consumer operations. However,

notable differences in indicators are evident when evaluating the stages of purchasing, production and servicing of products, sales, marketing, and product usage.

Table 40. Variations in responses based on activity type

№	ANOVA			
	Variations in responses based on activity type	F	Sig.	Statistical discrepancy
1	Product and service design	0.280	0.946	No
2	Procurement	3.167	0.005	Yes
3	Product development and services	8.788	0.000	Yes
4	Sales and marketing	4.980	0.000	Yes
5	Consumption	2.880	0.009	Yes
6	Post-consumer activities	0.765	0.598	No

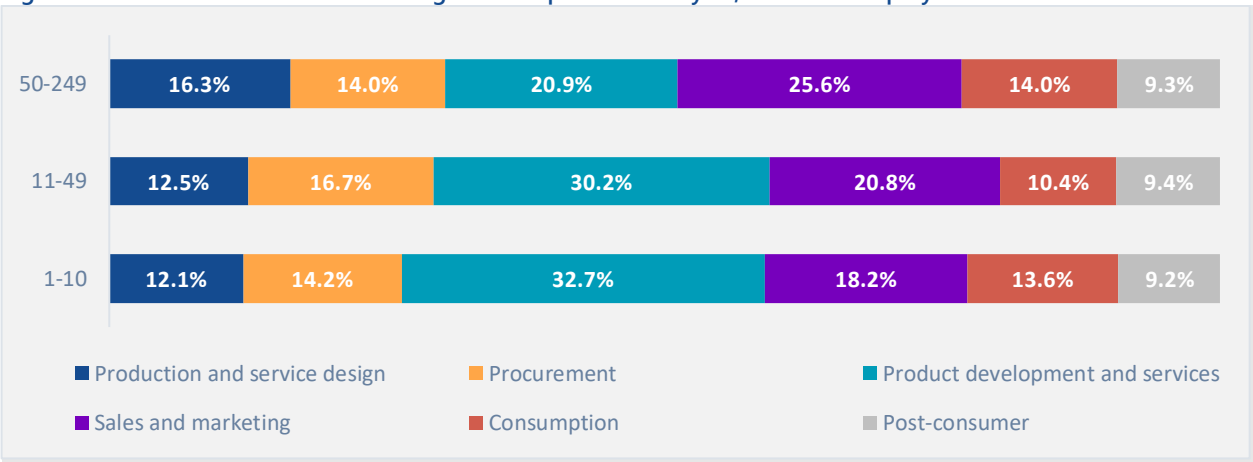
Quotation 3. Enterprises should thoroughly map all stages of their products and services.

Camps and businesses should meticulously outline every stage of their product and service lifecycle. In a broader context, if our goal is to minimize our environmental impact, it's essential to address both facets of our purchasing decisions. Consider tourist camps, for instance – they should ponder questions such as, "What will remain once this product is used?" This consideration is vital. Packaging should be sourced and manufactured in alignment with circular economy principles. Another approach involves comprehensive planning from arrival to departure. For instance, if all tourists arrive in their individual cars, efforts should be made to promote carpooling, thereby reducing carbon emissions. This comprehensive overview enables entities to identify areas requiring attention, tackle challenges, and assess possibilities for achieving low carbon emissions, cost savings, and more.

Representation of interviewees

The cluster of manufacturers typically adheres to the conventional business model of supply-side MSMEs (encompassing procurement, manufacturing, sales, and marketing) or tends to overlook non-product aspects. Given that MSMEs often fail to encompass the entirety of the product life cycle within their business operations, the comprehensive evaluation of economic, environmental, and social impacts across each stage (including related services), notably during design and post-use stages, remains elusive. Consequently, the potential for integrating strategies and solutions aligned with the principles of the circular economy is neglected, thus limiting the prospects for systematic integration. This predicament hinders the seamless adoption of circular economy practices. Depending on the nature of the enterprise, MSMEs with 11-49 employees primarily engage in the procurement and production phases.

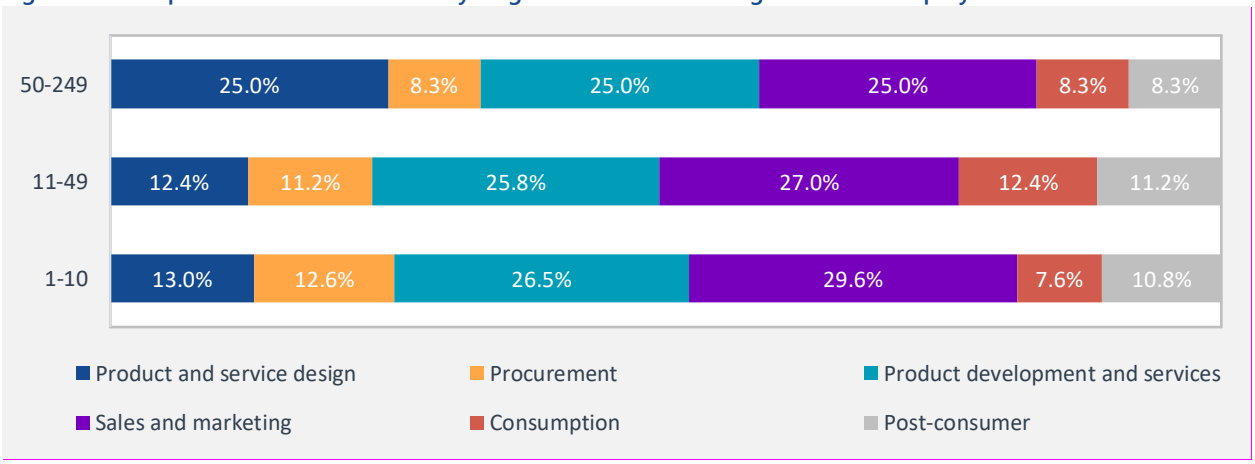
Figure 32. Involvement of MSMEs in stages of the product life cycle, based on employee count



Source: Number of suppliers=222

When contrasting the intermediate user group with respect to employee count, the MSMEs within this category provided varied responses concerning their engagement in each stage of the product life cycle. Nevertheless, as a general trend, larger enterprises exhibit substantial involvement in design, production, sales, and marketing stages. Conversely, fewer respondents indicated their engagement in the consumption and post-consumption phases. This pattern implies that larger companies tend to possess stronger capabilities in specific stages of the product cycle.

Figure 33. Comparison of circular economy stages with number of organizational employee



Source: Average number of customers = 178

Mongolia's tourism sector, akin to the global tourism landscape, is heavily reliant on the preferences and experiences of its clientele (Sørensen and Bærenholdt, 2020; UNECE, 2022). The heightened consciousness and dissemination of knowledge concerning sustainability among tourists have ushered in notable transformations within the tourism sector, particularly concerning service providers. The provision of "sustainable" services in the tourism industry is inherently tied to the accessibility of circular resources. Consequently, tourists can opt for a circular experience when such resources are accessible or when service providers endorse their usage.

To determine whether divergent outcomes arose based on the study's location in urban or rural areas, the significance attributed to various stages of the circular economy—namely, product and service design, production, service, sales, marketing, and product consumption—showed no disparity between the two groups. However, distinctions were observed in purchasing and post-consumer activities.

Table 41. Disparities in responses based on urban or rural classification

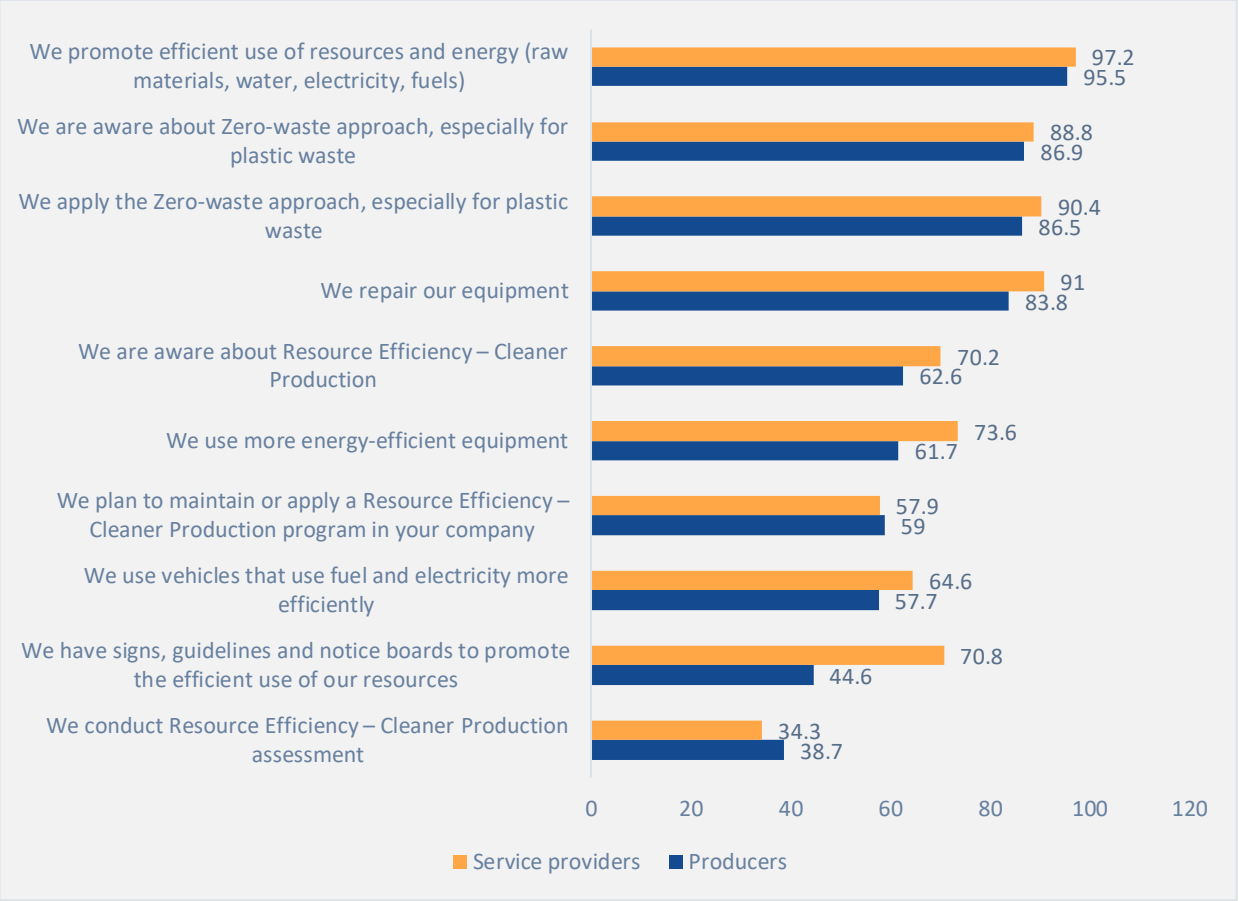
№	Independent Samples Test				
	Disparities in responses based on urban or rural classification	Levene's Test for Equality of Variances	T-test for Equality of Means		Whether there is a statistically significant difference
		F	t	Sig. (2-tailed)	
1	Product and service design	3.267	-0.956	0.340	No
2	Procurement	47.676	-5.507	0.000	Yes
3	Product development and service	0.428	0.349	0.727	No
4	Sales and marketing	10.5	1.405	0.161	No
5	Consumption	10.767	-1.79	0.074	No
6	Post-consumer activities	19.518	-2.429	0.016	Yes

Strategies to increase resource efficiency

In general, businesses should be mindful of zero-waste policies, particularly concerning plastic waste. They should also strive to prolong the lifespan of equipment, grasp the concepts of resource efficiency and clean production, opt for energy-efficient equipment to curtail fuel and electricity consumption, and employ economical vehicles for conserving resources and energy. A comprehensive understanding of Resource Efficient Clean Production (RECP) entails the promotion of judicious consumption. This is underpinned by the longstanding introduction of resource-saving principles in Mongolia, potentially driven by the endeavor of equipment and machinery manufacturers to bolster resource efficiency. However, it's worth noting that 61.3% of companies reported a lack of mechanisms for calculating resource savings and net production. This discrepancy underscores a divergence between the level of awareness and the actual implementation of Resource-Efficient Clean Production (RECP) within these sectors.

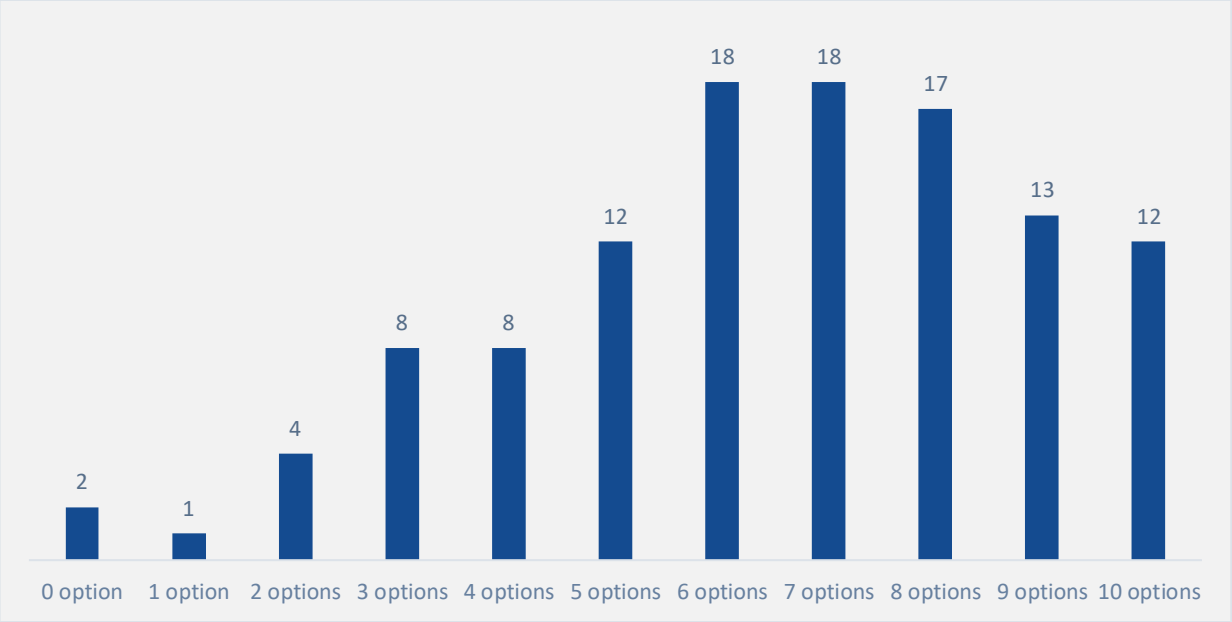
Positive responses from participants (ranging from 65% to 97%) highlight that the intermediate user group possesses a robust comprehension of resource and energy efficiency. This is evidenced by their advocacy for resource efficiency, equipment maintenance, and the operation of energy-efficient equipment.

Figure 34. Increase in resource saving (%)



To determine the number of alternatives chosen by MSMEs from the pool of 10 resource efficiency enhancement strategies, an average of 7.05 options were selected.

Figure 35. Percentage of relevant resource efficiency options selected



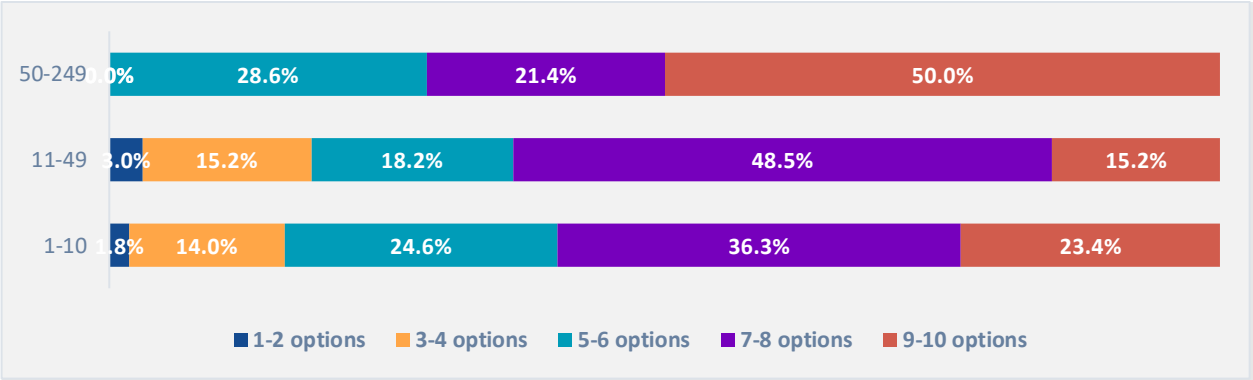
Quotation 4. Enterprises possess limited awareness and information regarding product recycling and resource efficiency enhancement

MSMEs have a limited grasp of recycling and resource efficiency concepts. The consideration of purifying and reusing wastewater, for instance, has only recently gained attention through initiatives like the Millennium Challenge Fund's water project. It's evident that this concept is relatively nascent. A significant portion of factory leadership comprises non-professionals, and the pursuit of such perspectives is often sidelined due to a primary focus on profitability.

Representation of interviewees

Observing the workforce size within MSMEs reveals a notable trend: larger factories demonstrate a substantial propensity for Resource-Efficient Clean Production (RECP). These companies predominantly favored options linked to RECP in the questionnaire. For instance, among businesses with 50-249 employees, 50% opted for 9-10 answers, in contrast to 15.2% and 23.4% for companies with 11-49 and 1-10 employees, respectively.

Figure 36. Comparison of "Yes" responses for resource efficiency enhancement with employee count



Source: Number of Suppliers = 222

Quotation 5. Initiatives for gray water reuse to preserve water resources

As discussed during the interview, there exists significant interest among MSMEs in the reuse of greywater. However, interview participants highlighted that the technology and expertise pertaining to greywater treatment in Mongolia are not well-established. For instance, the majority (ten out of eleven) of greywater treatment companies noted that the filtered water is unsuitable for irrigating trees and vegetables.

Representation of Interviewees

Quotation 6. Waste reduction endeavors at the "Nogoodoy" vegetable processing plan

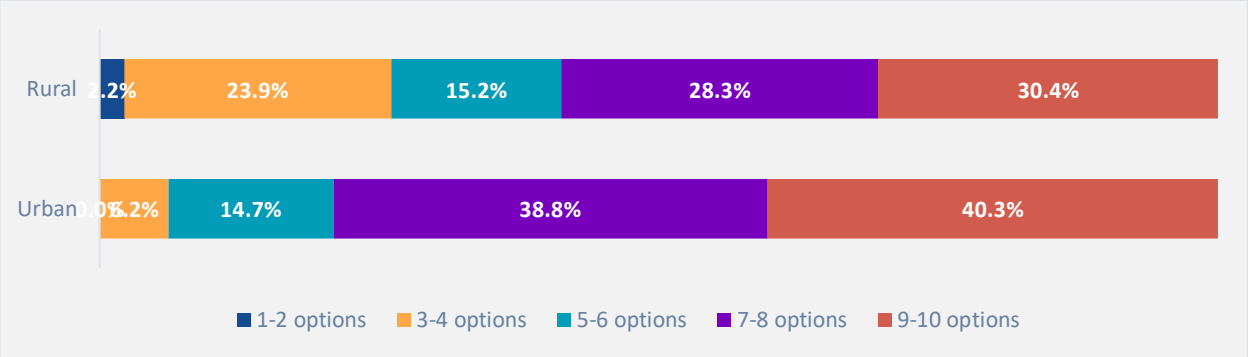
Fifty kilograms of vegetable waste are produced daily. In the past, this waste was provided to animals; however, the herders ceased accepting it during the warmer months. Subsequently, an experiment was undertaken to transform this vegetable waste into soil compost. Yet, accomplishing this necessitates a larger composting tank with a 100 kg capacity and the introduction of supplementary bacteria. By means of waste management training and the inception of recycling initiatives, the quantity of other waste generated plummeted to a mere 1 kg. Cardboard cartons and plastic bags are transported to a recycling center.

Representation of Interviewees

The depicted figure indicates that manufacturers lack substantial familiarity with systematic auditing and the execution of Resource Efficient and Clean Production (RECP) initiatives. Approximately 34.3% of service providers have undertaken evaluations related to resource-efficient and clean production (RECP), yet merely around 58% have intentions to incorporate a RECP program into their operations.

Urban service providers exhibit a greater array of resource efficiency (RE) options compared to their rural counterparts. Furthermore, companies with larger employee counts possess a broader spectrum of resource efficiency (RE) options in contrast to those with fewer employees. These findings underscore that the comprehension of Resource Efficient Clean Production (RECP) tends to be comparatively higher among larger enterprises and within urban companies, as opposed to smaller companies and rural regions. In essence, a distinction in knowledge and practices is evident.

Figure 37. Comparison of "Yes" responses for resource saving increase scenario in urban and rural areas (%)



Source: middle Users, Count = 178

When analyzing the count of Resource Efficient Clean Production (RECP) options based on activity types, it becomes evident that providers of hotel rooms and camping facilities exhibit a greater number of options compared to food service providers and grocery stores. This disparity could suggest a unique perspective on RECP within the lodging sector or could indicate a more systematic approach in their initiatives. Notably, the number of RECP options (ranging from 7-8 and 9-10 options) exhibited no significant variation between Food & Beverage (F&B) providers and grocery stores. This similarity in options might be attributed to shared practices within the industry.

Based on research conducted in tourist camps, intermediate users are actively striving to implement various solutions within their services, with a focus on energy efficiency and water conservation. Illustrative examples encompass the adoption of energy-efficient light bulbs, employing "turn off the lights" prompts, and providing water conservation guidelines. For instance, Jamogrand LLC's tourist camps employ Standard Operating Procedures (SOPs) to ensure judicious water usage during dishwashing activities. Additionally, new employees receive training in SOP methodologies, which are then practiced under the guidance and oversight of the manager.

I. Product (re)design phase

Manufacturers have the opportunity to explore and implement tailored circular economy solutions for each stage of a product's life cycle. Survey results reveal that around 24.7% of MSMEs operating within the food industry were involved in efforts related to product and service redesign. In comparison, for MSMEs in the water, beverage, and packaging sectors, the engagement rates in product and service redesign were significantly higher, standing at 40% and 33.3% respectively.

Companies situated in rural areas are relatively more engaged in the redesign stage, accounting for 31.9% and 26.3% participation rates. These figures can be indicative of companies' design capabilities and the demands placed upon their products by customers. The design phase holds significance as it can determine up to 80% of a product's environmental impact. Design plays a pivotal role in bolstering and effectively implementing product innovation. Nonetheless, the integration of product design or redesign into business operations encounters challenges due to constraints such as cumbersome design processes and limited budgets.

Regarding the intermediate user group, research data reaffirms the modest involvement of aforementioned companies in the design phase, while larger companies allocate greater attention to this stage. (69% of

responses from companies with 50-249 employees) The design phase is progressively gaining prominence among service providers as it empowers them to assess, mitigate, or eliminate factors like environmental impact, operational efficiency, waste generation, and processing. These aspects confer distinct advantages. For instance, accommodation providers can adopt eco-design or green design that harmonizes traditional hotel components. They may also incorporate eco-design furniture and introduce novel technologies and equipment aimed at curbing energy, water, waste, and carbon emissions. Likewise, restaurants can optimize menus and portion sizes to minimize food waste, employ energy-efficient appliances to conserve energy and water, and embrace innovative technologies to mitigate waste.

Table 42. Proportion of companies engaged in product (Re)design stage by region and sector

Product and service design		Producers		middle customers	
		No	Yes	No	Yes
Location	Urban	73.70%	26.30%	77.1%	22.9%
	Rural	68.10%	31.90%	72.3%	27.7%
Producers	Food industry	75.30%	24.70%		
	Beverage industry	60.00%	40.00%		
	Food production and services	71.70%	28.30%		
	Package	66.70%	33.30%		
Service providers	providers of hotel rooms and camping			75.0%	25.0%
	Food and water service provider			75.0%	25.0%
	Grocery store			79.4%	20.6%

The research findings mentioned above are consistent with trends observed among small and medium enterprises (SMEs) worldwide. Design responsibilities and solutions often fall into the hands of non-design professionals, leading to ad hoc, unplanned, and unstructured product development and innovation processes within MSMEs (Carneiro et al., 2021). To surmount this challenge, it becomes imperative for MSME managers to accord higher significance to eco- and sustainable design activities. Allocating essential resources and investments to design endeavors is crucial. MSMEs can engage external designers or other expertise for product development, with a vital consideration being to consult external Circular Economy (CE) experts to gain support from external sources. This may involve outsourcing design tasks to cultivate fresh ideas, innovations, and creativity.

Furthermore, MSMEs can foster exchanges of insights into the latest trends with Circular Economy experts. Collaborations with customers to formulate inventive designs also hold promise in devising potential solutions. Embracing sustainable materials (such as bio-based, recyclable, or naturally derived packaging materials), adopting energy-efficient and resource-conscious production processes and distribution strategies (like minimizing gasoline consumption during transportation), and effectively managing the end-of-life phase of products (involving storage logistics to mitigate resource loss) are all pivotal considerations. The overarching objective is to formulate and implement strategic solutions aimed at reducing the quantity of materials used, particularly primary raw materials, in each product unit. This pursuit must simultaneously align with consumer needs while minimizing the impact on the environment and human health.

Rethink, Reduce (in design)

Rethinking entails companies opting for more circular materials in product manufacturing (such as bio-based ingredients, recycled materials, or natural packaging), striving for more efficient resource and energy utilization in production and distribution (e.g., minimizing gasoline consumption during transportation), and ensuring an efficient initial lifecycle for end products (e.g., effective resource logistics to mitigate waste). Strategies that companies can explore include reusable design, modular design, and lightweight design.

Employing a "rethinking" approach, particularly within the intermediate user group, can bolster the adoption of Circular Economy solutions. From a design perspective, "rethinking" involves redesigning or recreating spaces, buildings, furniture, structures, and other components to be more sustainable and circular. Noteworthy examples include hotels incorporating indoor plants that absorb carbon dioxide (CO2) and purify the air as they grow. Some facilities also integrate clear laminated wood, which boasts triple the strength of conventional wood, and repurpose gray water for horticultural needs. An increasing number of hotels infuse traditional elements reflecting local culture into their designs. Following a similar ethos, restaurants and food stalls can enhance their sustainability by using local and organic ingredients, crafting seasonal menus, embracing "sustainable" equipment, and implementing organic waste composting practices.

One of the core principles of reduction (through design) involves using less material per product unit, curbing resource and energy consumption per unit of space, and minimizing waste, emissions, and pollution right from the inception stage. This principle is particularly relevant in the Mongolian context. During the design phase, it's also essential to seek prospective solutions across other phases, such as furniture and building material procurement, product manufacturing, utilization, and the post-use phase.

Production stage

The majority of manufacturing MSMEs are engaged in the production stage, accounting for 68% of participation. Within this, the food industry constitutes 72.6%, food production and service encompass 67.4%, and the packaging industry contributes 66.7%. However, only 20% of water and beverage companies indicated their involvement in the production stage of MSMEs. On the other hand, the proportion of companies producing products in rural areas (70.2%) surpasses that in urban areas (67.4%). The elevated rates associated with the manufacturing phase indicate that many MSMEs prioritize resource efficiency and waste reduction.

It is crucial to comprehend production as the process of creating and delivering services to customers, as highlighted earlier in relation to the production stage for service providers within the intermediate user group. There exists minimal disparity between urban and rural service providers in terms of service creation, with approximately 48.9% of urban service providers and 44.7% of rural service providers affirming their positive engagement. For instance, housing suppliers exhibit a relatively higher participation rate in the production stage, at 58.6%. Conversely, the relatively limited involvement of grocers and food service providers in the production phase reflects the conventional business model of purchasing and selling processed food, water, and beverages. Among small service providers with 1-10 employees, 43.7% participate in the production phase. Comparatively, other larger-scale service providers show a similar level of engagement in this stage (60% of MSMEs responded positively). This underlines the heightened awareness among larger service providers regarding the significance of creating and offering their services.

Table 43. Percentage of companies engaged in the production stage by region and sector

Product, service design		Manufacturer		intermediate user	
		No	Yes	No	Yes
Location	Urban	32.6%	67.4%	51.1%	48.9%
	Rural	29.8%	70.2%	55.3%	44.7%
Manufacturer N=222	Food industry	27.4%	72.6%		
	Beverage industry	80.0%	20.0%		
	Food production and services	32.6%	67.4%		
	Package	33.3%	66.7%		
Service provider N=178	Accommodation provider	41.4%	58.6%		
	Food and water service provider	62.5%	37.5%		
	Grocery store	88.2%	11.8%		

Among manufacturers, 37.4% indicated a lack of familiarity with Resource Efficient and Clean Production (RECP), while 61.3% did not prioritize Clean Production (CP). Additionally, a certain number of enterprises might struggle to identify potential solutions for Resource Efficiency (RE). This underscores the necessity for training and practical programs aimed at introducing and implementing RECP assessments within MSMEs. Local service providers or consulting firms offering RECP audit services can wield significant influence within the industry. Certain technology suppliers might also offer more sustainable technologies that enhance efficiency and economy.

The establishment of a policy framework featuring suitable and innovative incentives holds promise. For instance, providing tax credits to incentivize the reduction of industrial plastic waste, establishing credit sources to enhance resource conservation, and creating a credit trust fund for sustainable technology investments can collectively contribute to fostering resource conservation improvements within enterprises.

Relevant R's: Reduce, Reuse, Repair, Recover, Reuse, Recycle

In this context, "Rethinking" can serve as an effective strategy for the intermediate user group. This strategy involves transitioning from conventional business approaches to novel and innovative methods that align with customer expectations, experiences, and demands. During this phase, several pivotal elements come to the forefront, including the establishment of personalized service and feedback systems, anticipation of customer requirements, swift responsiveness, and the generation of inventive solutions to any challenges that arise. The integration of new information technologies has the potential to expedite and enhance the process of transformation.

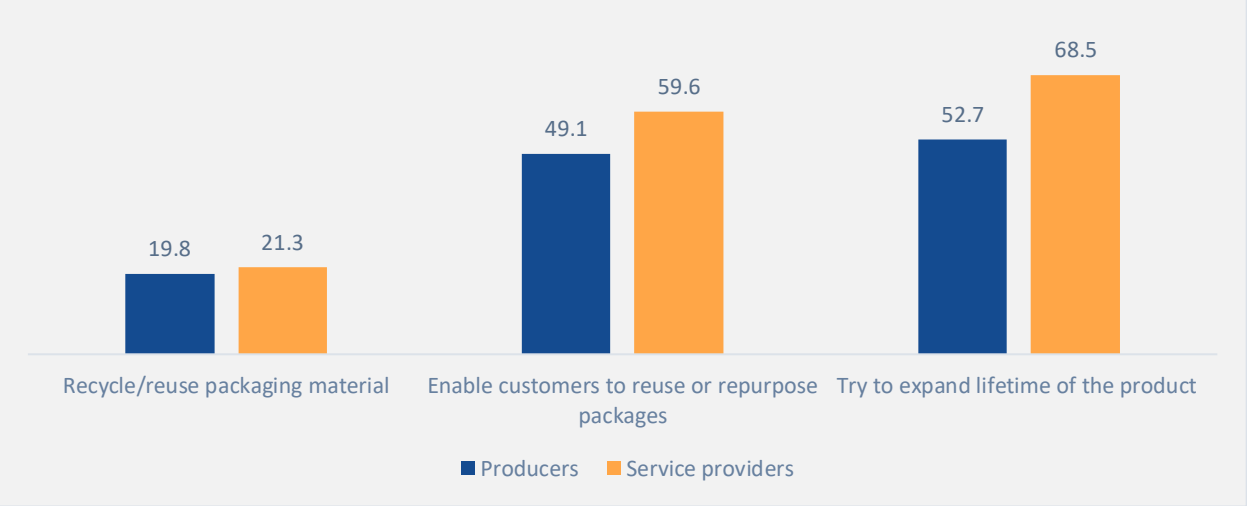
Related R: Rethinking

Strategies to prolong product usage

When examining manufacturers, a significant question arises regarding the potential for suppliers to extend the shelf life of their products. This inquiry holds particular relevance within the packaging industry, with an even stronger emphasis on products related to food and beverages. Effective strategies aimed at prolonging the lifespan of products encompass practices such as reclaiming packaging materials for reuse, emphasizing resource logistics, advocating for reusable products, and promoting immediate reuse following the initial use. Given the prevalent use of plastic in packaging, MSMEs have the opportunity to explore alternatives, such as incorporating paper and eco-friendly materials, to reduce their reliance on plastic packaging. Interestingly, around 50% of MSME respondents within this category are actively embracing Circular Economy strategies to extend the lifecycles of their products. However, a notable challenge persists, as 80.2% of the participating MSMEs do not engage in the recycling or reusing of packaging materials, as depicted in Figure 41.

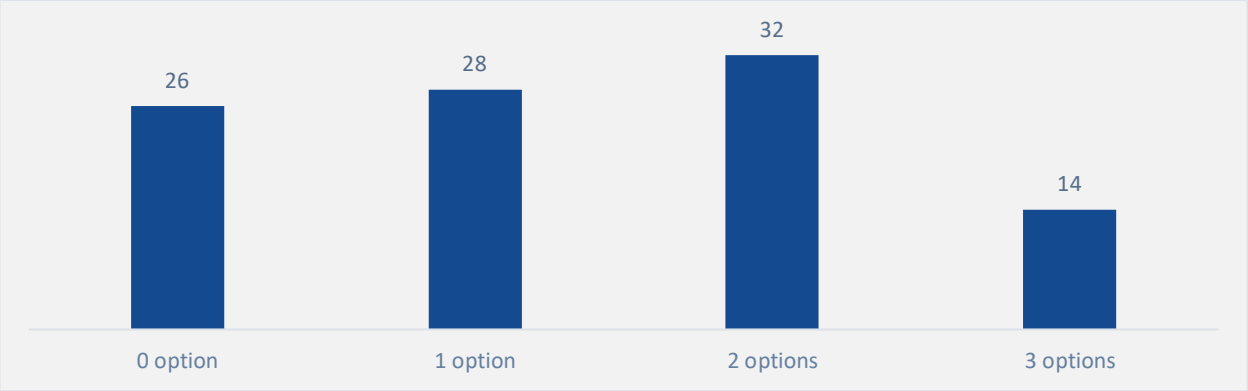
Shifting focus to the intermediate user group, the concept of product life extension takes on a broader meaning, encompassing support for the prolonged usability of various items, including equipment, furniture, and packaging. Service providers within this group have actively implemented a range of solutions toward this goal, such as prioritizing equipment maintenance and adopting a zero-waste policy to minimize waste generation. One standout aspect is that surveyed service providers are making commendable efforts to provide their customers with the option to reuse product packaging, resulting in a positive response rate of 59.6%. However, it's noteworthy that only 21.3% of respondents are actively engaged in the practice of reusing and recycling their packaging materials. This highlights a potential area for improvement in sustainable practices within this context.

Figure 38. Percentage of "Yes" responses for extending product life



When specifying the number of strategic options chosen by MSMEs for extending product life, the average selection amounted to 1.34 options.

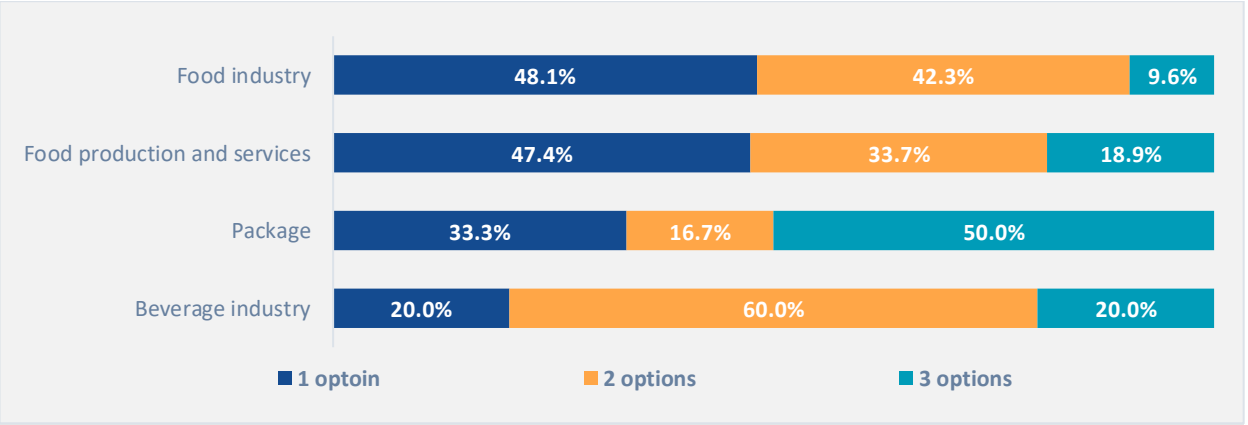
Figure 39. Percentage of strategies for extending product use



While manufacturers are making strides in implementing packaging recall initiatives, MSMEs encounter challenges stemming from logistical limitations and consumer behavioral factors. The return of used product containers is primarily observed among a small segment of loyal customers. For instance, only a limited number of customers at the "Nogoodoy" vegetable processing plant choose to bring back their old containers when purchasing new products. Similarly, "Necta" beekeeping faces difficulties in collecting honey bottles from customers, presenting a hurdle in the packaging reclamation process.

Consequently, in the pursuit of reducing packaging waste, viable solutions are being explored. One approach involves encouraging customers to bring their own jars for honey, which would facilitate refilling rather than requiring new containers. In certain cases, food producers opt to purchase or collect used glass containers, often sourcing them from facilities like the Eco Glass Recycling Plant. Given the scarcity of reusable glass within Mongolia, manufacturers frequently import packaging glass from China as an alternative resource.

Figure 40. Number of options related to "Extending Product Life" by sector



Source: Number of suppliers=222

The report illustrates the distribution of MSMEs across different sectors within the producers' group and relates their responses to several options linked to the circular economy strategy of extending product usage. Notably, 50% of MSMES in the packaging industry selected three answers from the questionnaire, while 60% of MSMES in the water and beverage industry chose two answers – the highest proportion among sectors opting for two answers. The packaging industry emerges as having the greatest potential for prolonging product life. Although packaging materials are employed in the food and beverage sector, numerous opportunities for reuse and repurposing exist.

Within this CIRCULAR ECONOMY strategy and its capabilities, suppliers are well-informed about these solutions and can assess their readiness to replicate them. A systematic approach to the CIRCULAR ECONOMY is crucial, involving activities such as awareness campaigns, training, and mentorship to enhance comprehensive understanding. This approach encompasses integrating elements like eco-friendly or sustainable design and exploring the possibility of replicating the successful application of the circular economy to enhance efficiency among MSMEs.

In addition, it's important to mention that manufacturing companies utilize various equipment and tools (computers, motors, etc.), and the matter of extending their usage lifespan deserves attention. The most prevalent method is equipment repair, selected by 83.8%. Other potential solutions might include regular inspections to ensure equipment integrity and the consideration of purchasing higher quality products.

For instance, end-users like tourist camps and tour operators exhibit practices such as segregating reusable or recyclable waste, primarily plastic and glass containers. They strive to minimize the purchase of single-use containers to curtail waste production. Illustratively, surveyed tourist camps such as Jamogrand and DMD encourage tourists and customers to refill their own reusable bottles instead of buying bottled water. Additionally, nearly all camps and tour operators provide their staff with waste management training before the tourist season.

Among this supplier group, the preferred approach to extending product life is prioritizing equipment repair, yet a multitude of alternative options is available. The simplest and most widespread option involves regular equipment maintenance. Equipment upgrades also remain a viable choice. Furthermore, an opportunity exists to sell used equipment in the second-hand market.

III. Stage of product usage

This phase holds relatively little relevance to the "producer" side, as the group of producers primarily utilizes raw materials, resources, and energy to manufacture products. However, from the perspective of suppliers, they procure and utilize products from other manufacturers. Therefore, options to avoid waste may include reusing, repurposing, or recycling these products on-site. If the product is repurposed for another purpose, it can be covered by the "repurposing" principle. A common example in the water and beverage industry is through a deposit scheme, where consumers pay for the bottle when they buy a product, and get the money back when they return the bottle in its entirety after using the product.

Related R's: Reuse, Repair, Recycle

A common practice among end-user suppliers to extend product life is prioritizing equipment repair, but there are many other options available. The simplest and most extensive option is regular maintenance of equipment. Upgrading the equipment is also an option. In addition, there is an opportunity to sell used equipment on the second-hand market.

Related R: Repair

IV. Post-Product usage phase

In the case of manufacturers, the engagement of the surveyed MSMEs in the post-consumer phase was notably low, standing at 20.3%. This can be attributed to the fact that only a minority of them are involved in activities related to this phase, such as packaging, collection, sorting, and processing of end-of-life products, including food and various types of solid waste. Among the manufacturers, packaging MSMEs

demonstrated the highest involvement in this phase at 16.7%, while the food industry had the lowest participation rate at 7.9%. Slightly over 9% of MSMEs indicated some level of activity associated with the post-consumer stage, regardless of the total number of employees.

The post-consumer phase presents a significant potential for Circular Economy initiatives, particularly in the areas of waste collection, sorting, and recycling. The relatively low percentage underscores that MSME operators generally don't bear full responsibility for the waste generated after the sale and consumption of their products by end consumers. This implies that producers might not have complete control over the waste stemming from the production process, which is preferable to the waste being handled by external entities, often through less sustainable methods like landfilling. This stage necessitates more effective measures to enhance the preparedness of MSMEs in addressing post-consumer waste management challenges.

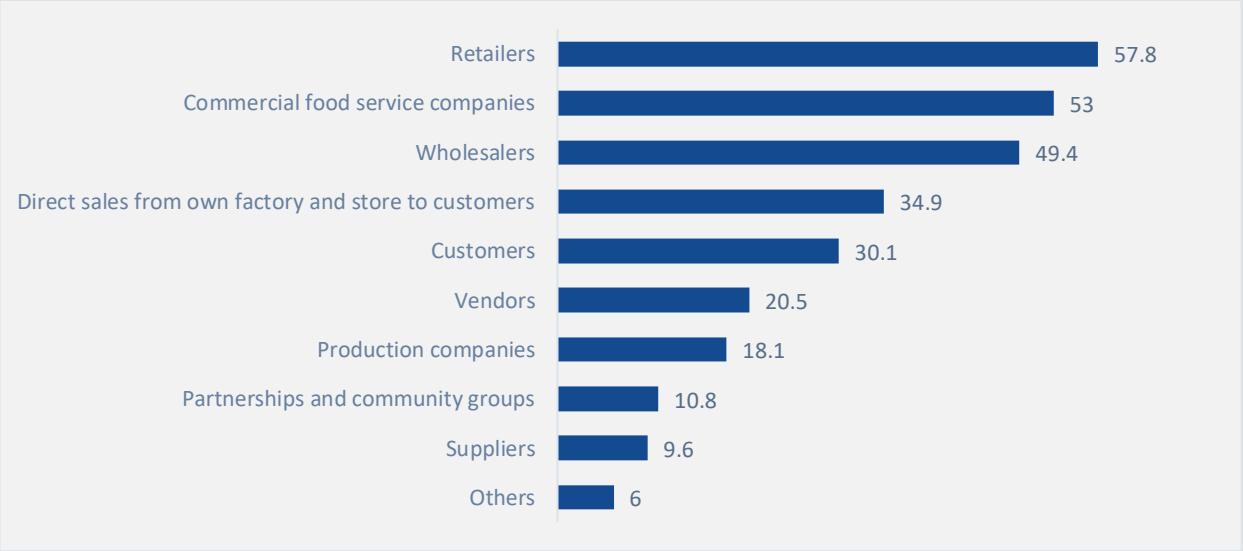
Table 44. Participation of MSMEs from the initial supplier group in the post-use phase

Post-product activities phase		Manufacturer	
		No	Yes
Areas of activity	Food industry	83.6%	16.4%
	Beverage industry	80.0%	20.0%
	Food production and services	79.0%	21.0%
	Package	50.0%	50.0%
Number of Employees in the Organization	1-10	81.7%	18.3%
	11-49	72.7%	27.3%
	50-249	71.4%	28.6%

Source: Number of suppliers=222

The challenge of accountability at the post-consumer stage may be related to their customers, as shown in Figure 44, where a significant proportion of their products are sold to retailers (57.8%), commercial food service companies (53%), and wholesalers (49.4%). The most relevant sector, the packaging industry, continues to face challenges in reclaiming packaging materials. The solution can be based on an effective and innovative producer responsibility system, coupled with the capacity of the waste management sector (separation, collection, and recycling) and appropriate legislation.

Figure 41. Customer distribution of company product sales



Source: Number of suppliers=222

Relevant R's: redesign, reuse, recycle

In the middle consumer group, consumers are provided with the choice to reuse packaging and recycle packaging materials, although their engagement in the post-use phase remains limited. This implies that several waste and sewage solutions are yet to be integrated. Globally, various practices are evident, such as repurposing gray water for horticultural purposes, composting organic waste, and utilizing compost in gardening.

Relevant R's: Remanufacture, Reuse, Recycle (for more details, refer to previous sections)

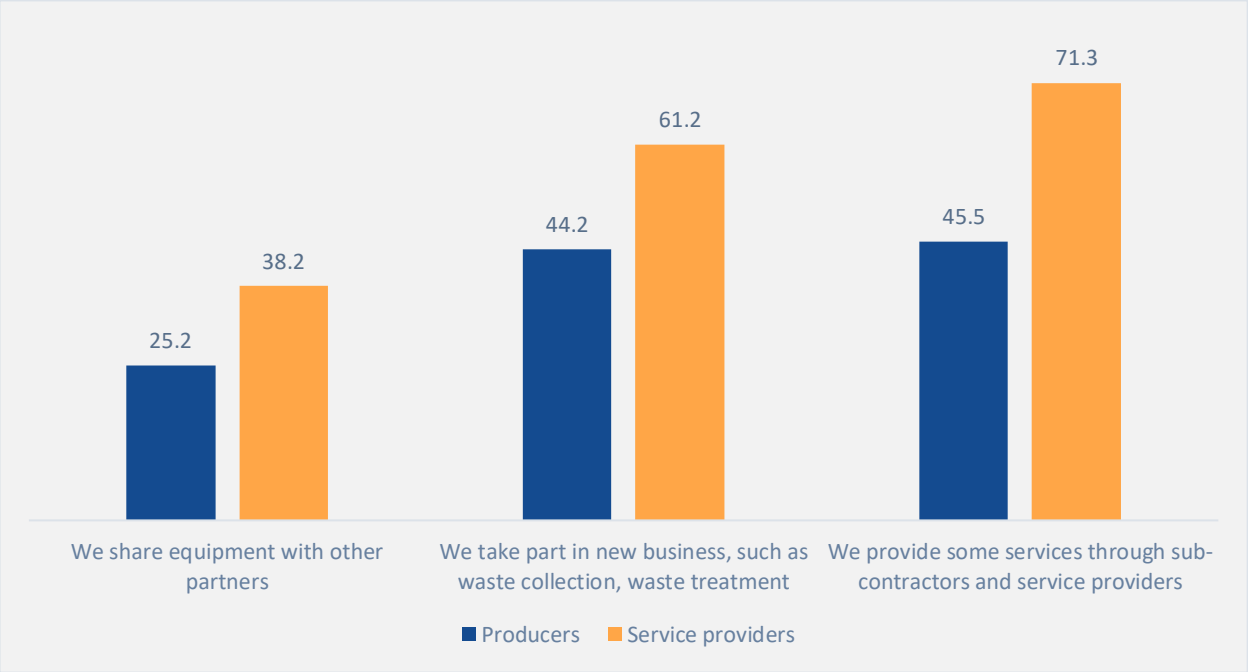
Strategies for shifting to a service-based model

The circular economy brings about a transformation in the conventional business approach by introducing a model that prioritizes providing services over merely selling products. The challenges tied to the adoption of new circular economy business models, such as asset and equipment sharing, service-based offerings, and ventures related to waste collection and recycling, are quite evident. Nonetheless, customer-centric business models equipped with appropriate strategies, processes, and marketing strategies to meet customer demands are also prevalent (UNEP, 2019). During interviews and in case studies, manufacturers have mentioned their utilization of online stores and delivery services for product distribution, thereby reducing the reliance on individual vehicles. Within the realm of circular economy business models, the product-service model stands out as a crucial one. An illustrative instance of this model is the chemical leasing or performance-based payment model (UNIDO, 2017). Instead of selling cleaning products by weight, suppliers offer them based on daily usage per room. Another example involves implementing a pay-per-wash model for leasing durable goods like washing machines, including the provision of detergents.

Among the surveyed MSMES, 25.2% revealed their practice of sharing equipment with others, potentially driven by their involvement in service-oriented activities. It's possible that the product-service concept might not be fully comprehended by the respondents. A similar inquiry could be directed towards their engagement in novel business areas like waste collection and processing. The potential profitability of investing in waste collection and processing from diverse sources might not be entirely realized.

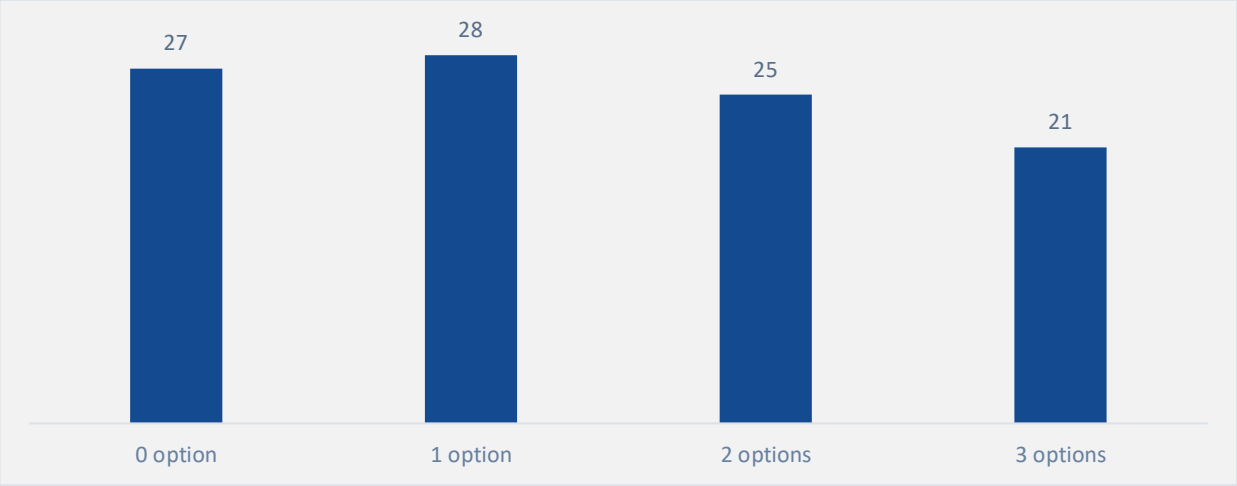
While grasping and implementing circular economy business models might take time, this can be overcome by raising awareness among both producers and consumers, learning from successful instances within analogous sectors, introducing policy and economic incentives, or fostering information sharing. This indicates that implementing the circular economy business model of delivering products as services to suppliers could be challenging. In simpler terms, the circular economy business model like chemical leasing could be presented as a service to other suppliers. However, these notions might be relatively novel for Mongolian producers. Among the various circular economy business models, equipment sharing and online platform-based product sales emerge as the most common. As highlighted earlier, the service-based models are pivotal in the circular economy's strategic framework, offering functional services instead of mere products. As previously discussed in the context of circular economy strategies and opportunities, the service-based model stands as the cornerstone of circular economy business models, focusing on providing activities and services from suppliers rather than just selling the products themselves. Some prevalent circular economy business models aligned with this approach include chemical leasing, access-based models, and performance-based business models. For example, instead of purchasing cleaning chemicals and products by weight for hotel cleaning and household use, these chemicals could be offered at a daily cost per room. Another instance is leasing washing machines, where consumers pay per load, and the manufacturer provides the appliances, electricity, and detergents.

Figure 42. Adoption of service-based model among participating MSMEs: Percentage of participants responding affirmatively



To determine the number of options chosen by MSMEs from the three strategic options for transitioning to a service-based model, the average number of options selected was 1.4.

Figure 43. Transition to Service-Based Model Among Participating MSMEs: Percentage of Participants Who Answered Yes



Sales and marketing stage

For manufacturers, the sales and marketing participants ranked second after the production stage, are responsible for 42.3% of MSMEs. 33.3% of packaging and beverage manufacturers are heavily involved in this stage (the highest percentage of any other life cycle). Companies in urban areas are 5% more involved in sales and marketing than those in rural areas, and firms with more employees take this step more seriously. (**Error! Reference source not found.**) A compilation of the concept and knowledge about the CE for MSMEs may be one of the optimal ways to convey the CE approach to consumers.

Middle consumers are more involved in the stage. Given the limitations concerning the implementation of the CE strategy, such as the low involvement in the design and post-utilization stage, extension of the product lifespan, adoption of the service-based model, and post-disposal recovery, it is necessary to develop a comprehensive and systematic approach where the sales and marketing of CE service providers are more innovative, more sustainable, more achievable. In particular, innovative sales and marketing strategies need to be seriously considered.

Related R: Rethink

Table 45. Sales and marketing participation of MSMEs of the first group of suppliers, %

Sales and marketing		Manufacturers	
		No	Yes
Location	Urban	56.6%	43.4%
	Rural	61.7%	38.3%
Operational area	Food industry	52.1%	47.9%
	Beverage industry	20.0%	80.0%
	Food production and services	64.5%	35.5%
	Packaging	0.0%	100.0%
Number of employees of the entperprise	1-10	64.0%	36.0%
	11-49	39.4%	60.6%
	50-249	21.4%	78.6%

Source: Number of suppliers=222

Post-disposal rehabilitation strategies

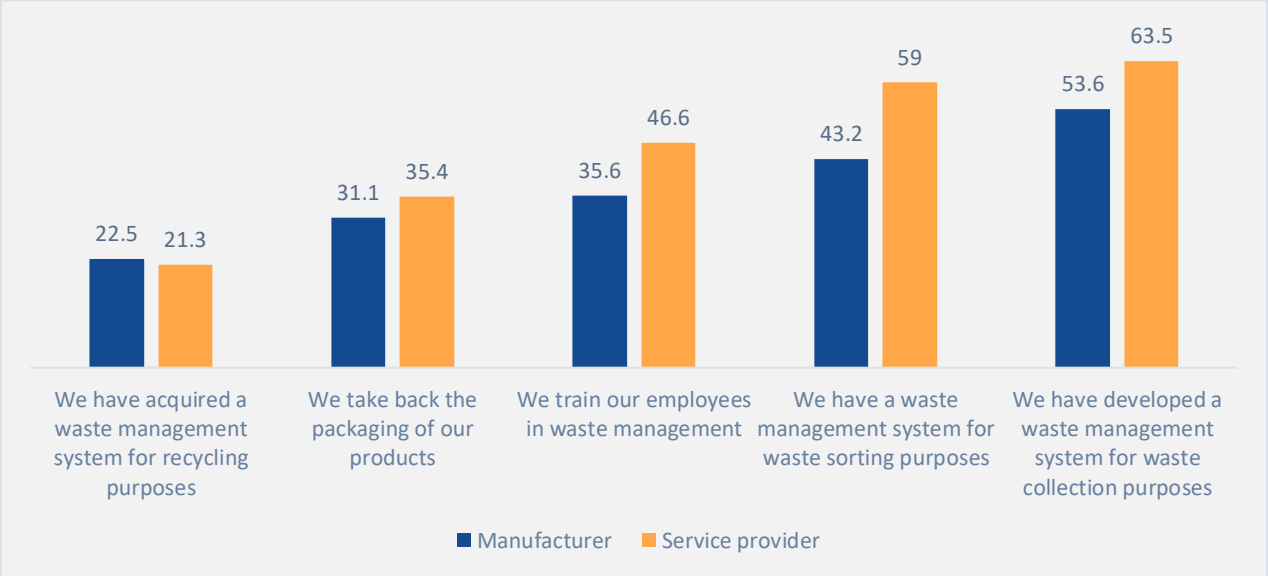
This strategy focuses on exploring opportunities to prevent any resource from exiting the circle. In other words, it is concerned with studying waste processing and applicable solutions from the CE point of view of waste management. As mentioned earlier, the understanding of the CE of the surveyed MSMEs is mainly focused on waste management. 50% of manufacturing MSMEs have introduced waste management systems that have activities such as waste collection and sorting. Only 22.5% of MSMEs have acquired a system to support waste recycling, and about 35.6% provide training to employees in the field of waste management. Companies in urban areas have opted for more responses to post-disposal rehabilitation than those in rural areas.

For the middle consumer group, it can be seen that the majority has introduced waste management systems. More precisely, 63.5% have acquired sorting, 59% collection and recycling mechanisms (a minimum of 21.3% has developed a waste management system). 46.6% of service providers run waste management training, while 35.4% take back their product packages. With regard to the survey responses (up to five maximum), 14.7% of service providers in rural areas prefer all five options more than those in urban areas (12.7%). This can be explained due to the space availability that can provide conditions viable for waste management. Moreover, companies with many employees chose more options regarding the CE strategy, and food and beverage service providers also opted for more options than the other two groups.

Middle consumers, such as tourist camps and tour operators, conduct separate waste sorting operations for the recycling and reuse of plastics and glass bottles. Its main purpose is to reduce waste by avoiding the purchase of new products. For example, tourist camps such as Jamogrand LLC and D M D LLC offer their customers to fill their water bottles instead of buying bottled water.

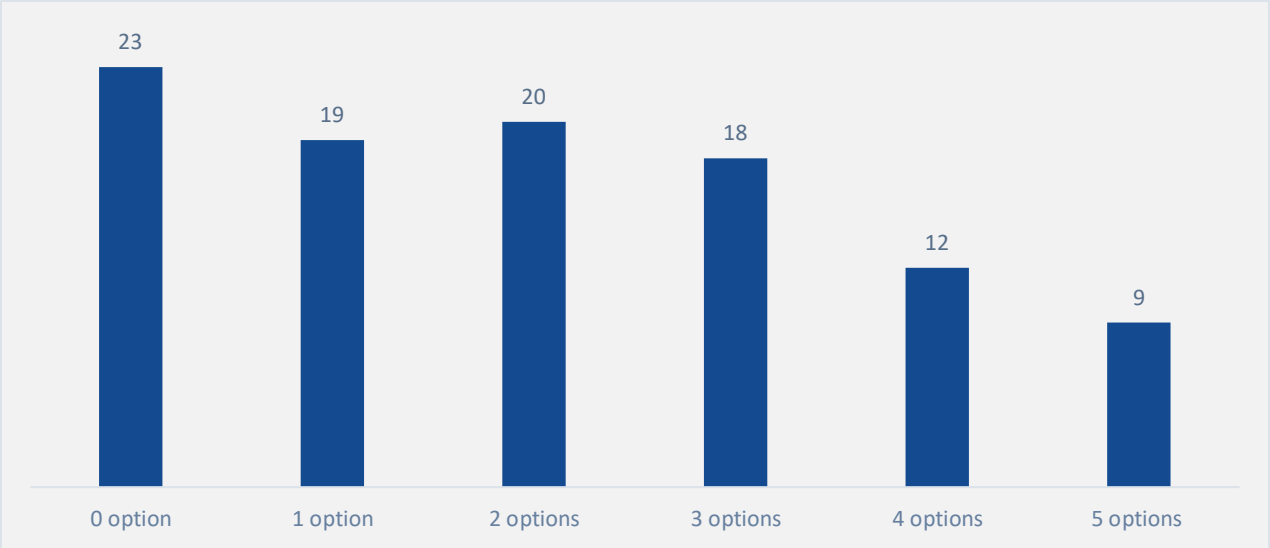
Most tourist camps and tour operators train their staff on waste management before the peak season.

Figure 44. Post-disposal recovery, percentage of participants who responded yes



Upon examining options the MSMEs have selected among five options for post-disposal recovery strategy, they have opted for an average of 2.04 options.

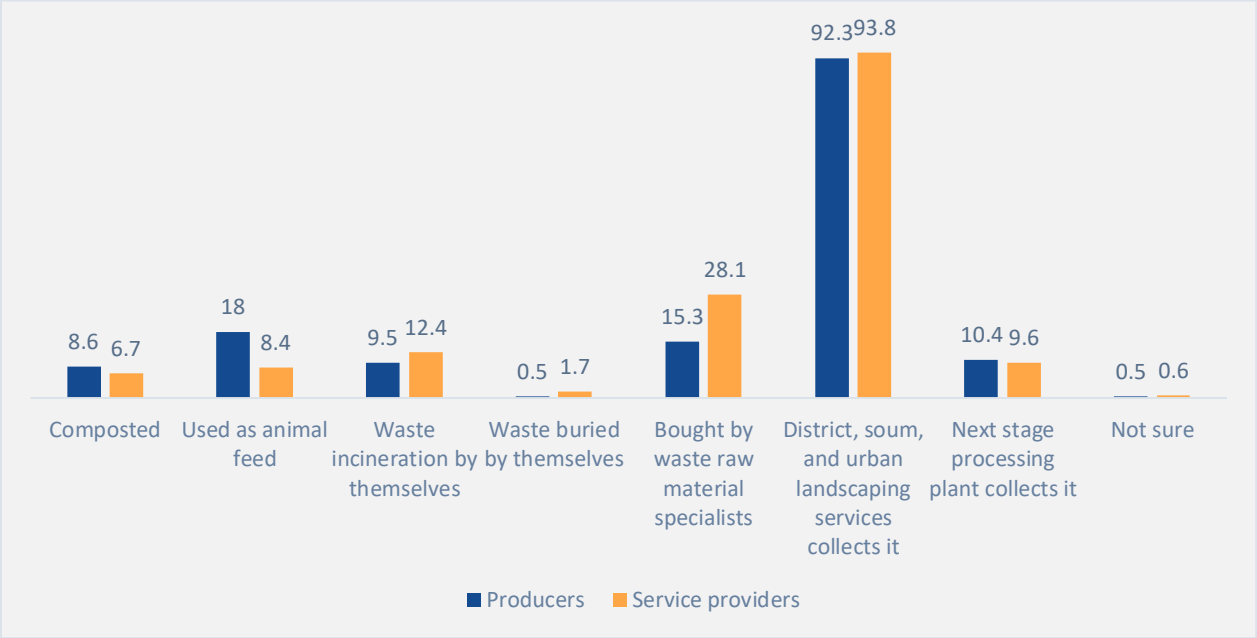
Figure 45. Post-disposal recover, percentage of participants who said yes



For producers, depending on the production, waste is treated in different ways, such as composting (mostly food producers), using it as animal feed (mostly food and beverage producers), etc. In reality, approximately 92.3% of the first group of suppliers bury their waste in landfills. For organic waste, a part is used as animal feed and sold to merchants, while a part is given to other processing plants. However, the remaining 9.5% of the waste is disposed of by incineration.

Looking at the waste management methods of service providers, 93.8% of the generated waste is buried in the ground, and 12.4% is incinerated. A large amount of waste is outflown or is lost as a resource, and the amount that goes for reusability, such as composting, animal feed, and sales, is relatively small.

Figure 46. Final waste processing methods of MSMEs, in percentage



For producers, open dumping, incineration (not for heat recovery purposes), and burying waste according to the CE principles means not only disposing of utilizable resources (outside the closed-loop recycling), but also causing a negative impact on health and the environment. In the short term, since there is a lack of infrastructure to support waste management alternatives, it hinders the MSMEs from

practicing the CE solutions, given the circumstances. For example, the absence of a Material Recovery Facility (MRF) or a waste heat recovery system limits the availability of waste management options. Considering the readiness of MSMEs, they are not ready to acquire the CE option for post-disposal recovery.

In Mongolia, a lack of a comprehensive system for waste collection, sorting, recycling, and monitoring is one of the problems in the development of the CE.

Quotation 7. There is no comprehensive system for waste collection, sorting, and recycling

> Existing recycling plants are unable to operate at full capacity due to a lack of raw materials. If you look deeper, there is a problem of collecting raw materials. Some are collected at the center of the Tuvshin saikhan, others are collected by themselves. Some of them send a truck and sort it themselves, while others pick it up from a recycling center or a landfill. We need a workshop that sorts them. In short, there is no comprehensive system for collecting, sorting and recycling waste at all.
>
> Interviewee representative

Therefore, comprehensive waste solutions can be initiated by startups with their innovative ideas, and it would be favorable if the government could give policy support. In addition, it is necessary to strengthen the CE capacity of MSMEs.

Quotation 8. Policy support is needed for waste recycling plants.

> The biggest challenge for recycling plants is, first, collecting raw materials. Second, there is no funding for technology development. There's absolutely no profit or reward if they've managed to develop it. There is little support available to them. Even if the eco-label is issued, the evaluation criteria are not clear. If you calculate your carbon credit, you will be able to get external financing.
>
> Interviewee representative

Associated R: Recovery, Reuse (more details in the previous section)

For mid-users, effective waste management solutions include government waste planning initiatives (outsourcing) and service providers' proactive implementation of the combination of "R" principles (Repair (by design), Remanufacture, Recycle, Reuse, or Repurpose, etc.).

Sales and marketing, production, and utilization phase: see previous sections for more details.

Associated R's: Rethink, Reuse, Recycle, Repurpose

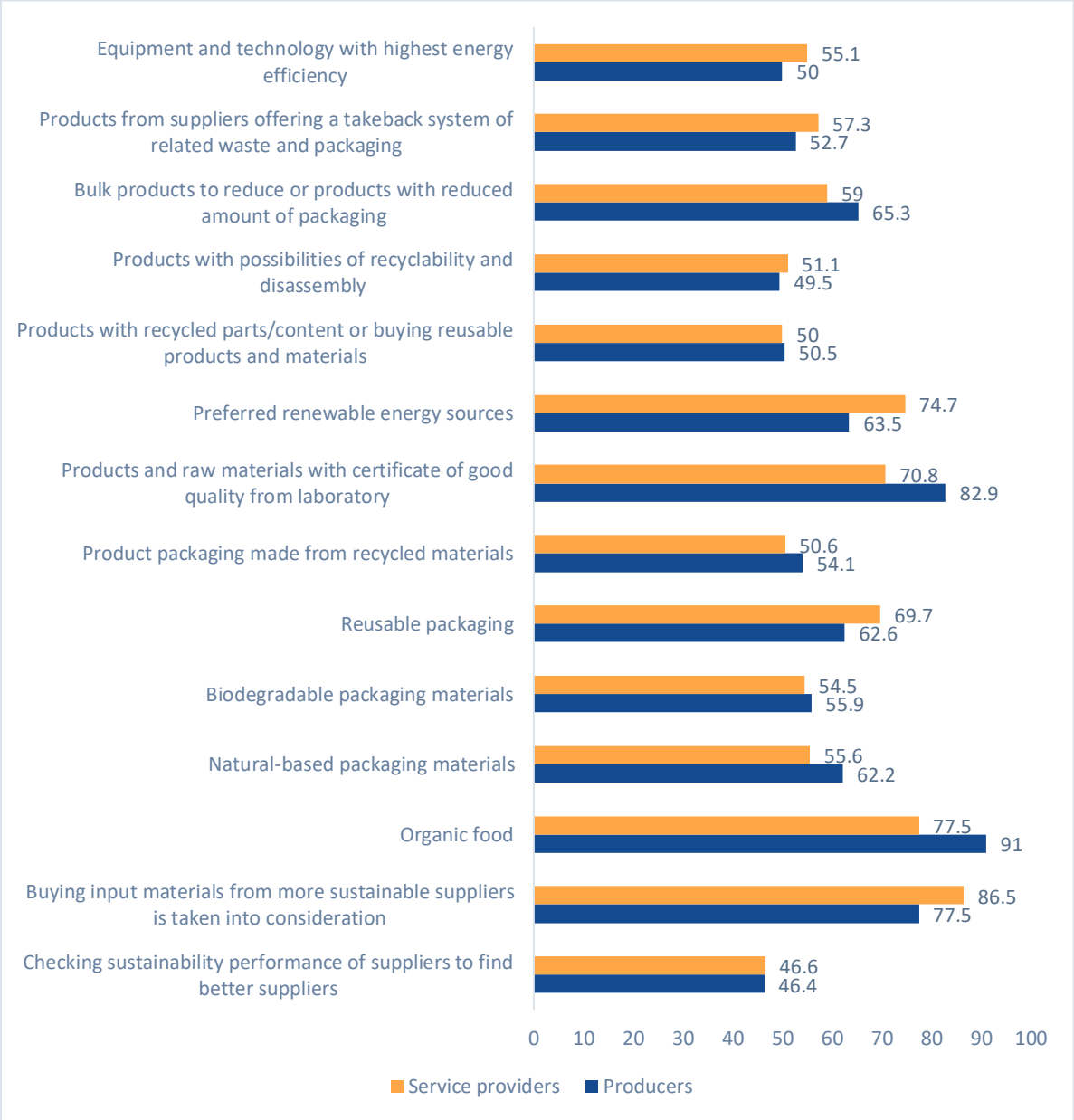
Strategy to introduce the supply into the circle:

This strategy focuses on the supply chain of products and services. The transition to a circular supply chain involves not only raw materials and resources but also energy. Producing MSMEs have some level of understanding of their supply chain, and they have welcomed the use of more sustainable inputs and materials as well as sustainable resources and energy. They preferred environmentally friendly, green, or waste-free resources (materials, products, and services) or organic food (more than 91 % of respondents). Suppliers were also interested in methods such as the use of biodegradable or reusable bio-based packaging materials, the use of renewable energy, and the introduction of return systems.

On the other hand, 50%-86.5% of respondents representing the middle consumer group expressed their preference for sustainable practices. These include choosing recycled materials, biodegradable or bio-based packaging materials, implementing waste return systems, sourcing raw materials from

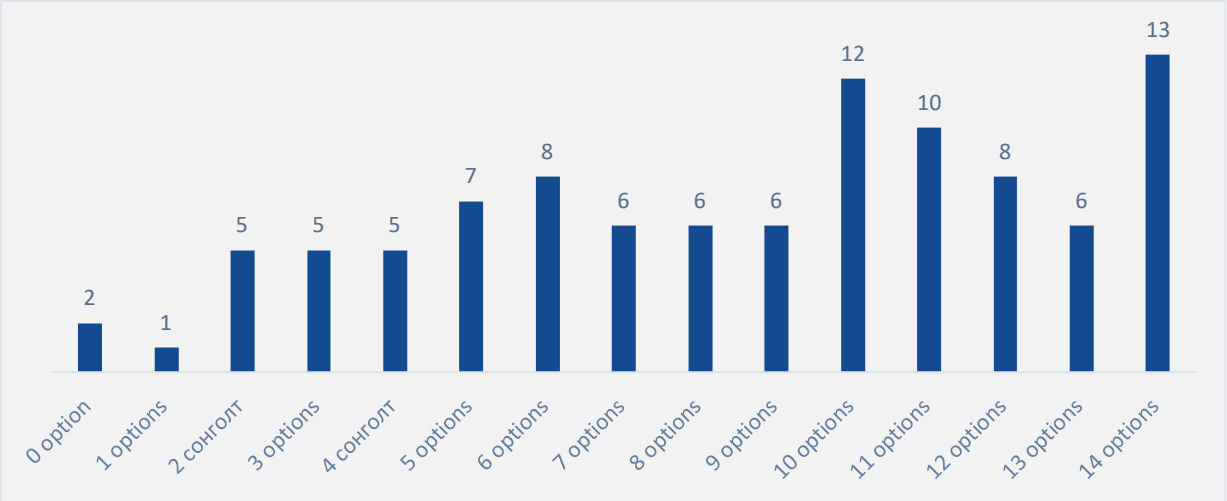
"sustainable" suppliers, offering organic food options, and using renewable energy sources. These figures show their desire to seek and buy from better suppliers.

Figure 47. Percentage of MSMEs who answered yes for transitioning to the circular supply



Of the 14 options of the strategy to adopt the circular supply, the MSMEs, on average, chose 8.62 options.

Figure 48. Percentage of MSMEs who answered yes to the adoption of the circular supply



For the middle group, these figures demonstrate that food stores selected the most options (13-14), or 30.3%, compared to the accommodation (25.2%) and food service providers (18.8%). This may be due to the aforementioned factors, such as geographic location and space availability.

Jamogrand LLC orders liquid food and beverage materials from the APU for its restaurants and customers, as APU takes back its bottles and packaging.

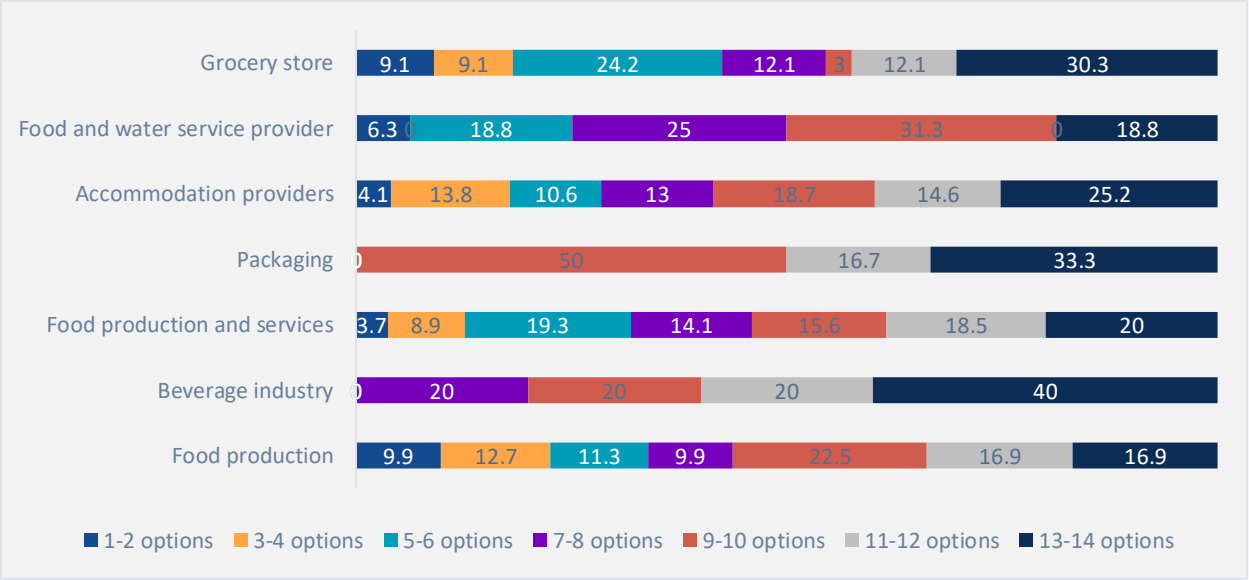
Among rural area consumers, the number of respondents who chose more options is higher than those in urban areas. This may be a result of the fact that organic food resources and natural and biodegradable packaging materials are more readily available in rural areas than in urban areas.

have identically opted for 9-10 options or 40% with

The number of options selected by service providers with 50-249 employees is equal to the group that opted for 9-10 options as well as that one for 11-12 options, or at 40 %. Service providers with 11-49 employees had the highest number of options selected at 36.1%, higher than the 50-249 and 1-10 employee groups.

It is worth re-mentioning that the rural producer group selected more options from the questionnaire with regard to the adoption of circular supply compared to the urban producers. This may be due to the fact that the information on the CE and sustainability is more accessible to them than those in urban areas.

Figure 49. Respondents who opted for the adoption of the circular supply, by sectors



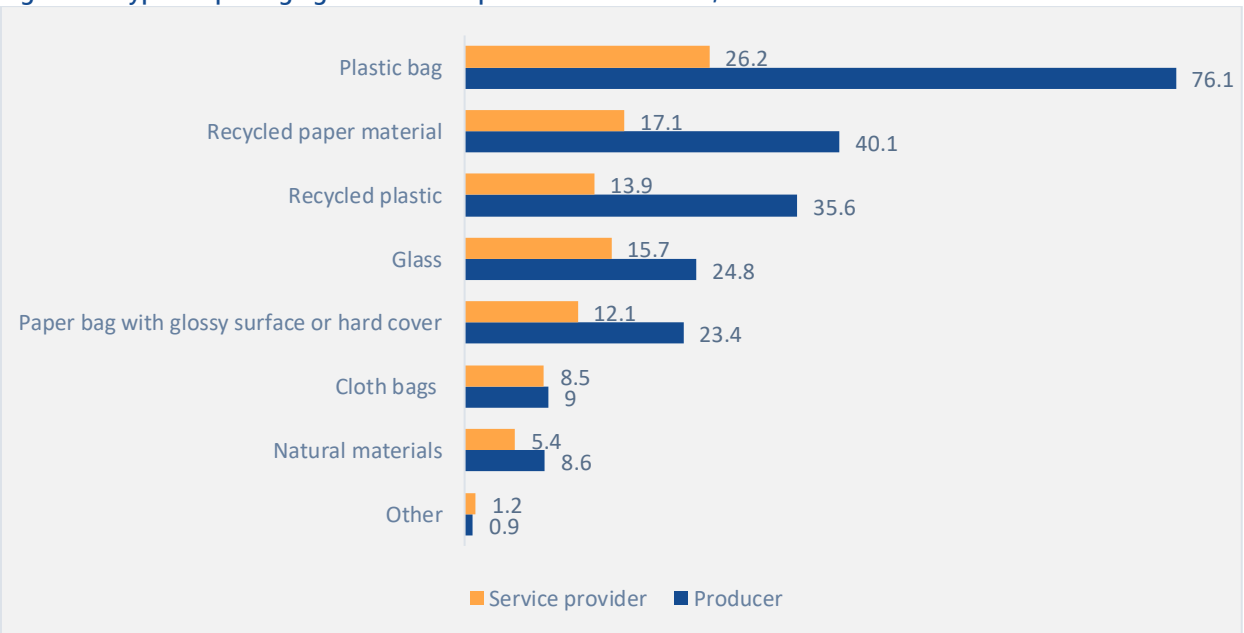
For producers, plastic bags are used mostly (76.1%) as packaging materials. Recycled paper, plastic, glass, and paper bags are also used. About 8.6% of the surveyed MSMEs use natural materials for packaging. Widespread use of plastic packaging is common in other developing countries as well.

In terms of energy consumption, electricity from coal is the main source of energy. 96.4% of the surveyed MSMEs purchase energy from central energy. A small number of MSMEs use electricity from solar energy and biomass or other types of energy sources.

The middle consumer group has a high level of awareness and desire for sustainability and circularity, while service groups still use plastic materials for packaging and get a large portion of their electricity from coal-fired power plants.

For this group, the most relevant phase of the CE Strategy and Opportunities is Procurement. However, design and manufacturing, especially the design phase, can have a significant impact on them.

Figure 50. Types of packaging materials for products and services, %



For producers, transitioning to the circular supply will require not only a willingness to use sustainable resources and renewable energy from MSMEs but also the readiness of suppliers. Some external factors, such as renewable energy and its availability, may hinder the MSME transition to the circular supply. However, some of the impacts can be altered by the MSMEs themselves, and here, we can see that they are ready to adapt to certain situations. Provided the suppliers of sustainable products exist, and customers and service providers are aware of such products, and the demand and supply linkages are in place, the alternatives to plastic packaging and single-use plastic products can be supplied to hotels, food, and beverage service providers. External CE forces, such as policy frameworks and incentives, can stimulate the above efforts and readiness of MSMEs.

Procurement stage

For producers, this stage is more closely and directly related to the strategy of "Putting supply into the circle". It involves supplying resources, materials, and energy from more sustainable sources. In most cases, more sustainable and CE-enabled solutions need to be explored for feasibility from the design stage. The applicability of CE-enabled solutions also depends on market readiness.

Associated R's: Refuse, Rethink, Recycle

For middle consumers, it means providing relevant resources, materials, and energy more circularly and sustainably. The introduction of more circular alternatives also depends on their availability in the market. Service providers can interact with more suppliers when sourcing products and implementing new business CE models.

Table 46. Comparison of procurement stage, by location and activity type, in percentage

Procurement		Middle consumers	
		No	Yes
Location	Urban area	86.3%	13.7%
	Rural rea	55.3%	44.7%
Area of operation	Accommodation provider	82.8%	17.2%
	Food and beverage service provider	87.5%	12.5%
	Grocery store	55.9%	44.1%

Source: Middle consumers, count=178

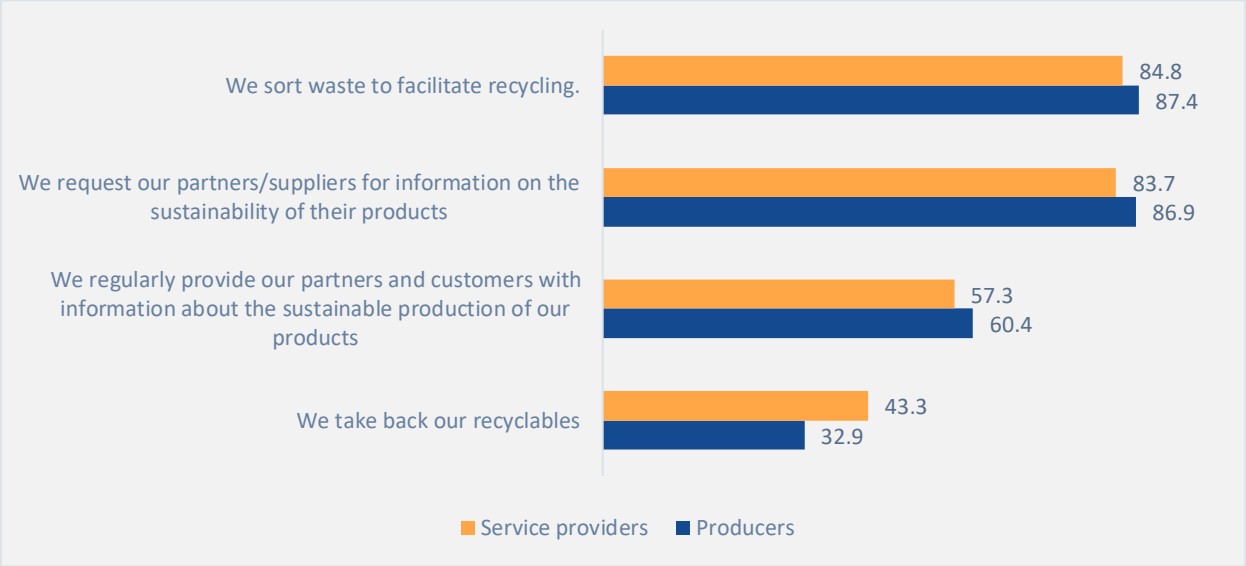
Strategy to promote demand for circular products and services

To encourage demand for circular products and services, suppliers need to educate customers about the sustainability of their products and services. These activities can be done through the use of media such as commercial advertisements, product labeling, other marketing materials, and media (e.g., websites). A good experience is that 87.4% of MSMEs included in this group have contributed to recycling by sorting their waste. 86.9% of them asked their suppliers to provide information about the sustainability of their products, and 60.4% regularly communicated this information with their partners and customers. Only 32.9% of them took specific actions to take back their recyclable products. (**Error! Reference source not found.**)

For middle consumers, promoting the demand for circular products and services has two meanings: customers and suppliers. This is expressed in the form of sorting waste to promote recycling, and this option was chosen by 84.8% of participants in the service group. It can also mean customers and suppliers exchange information about their products/services. Requesting product sustainability

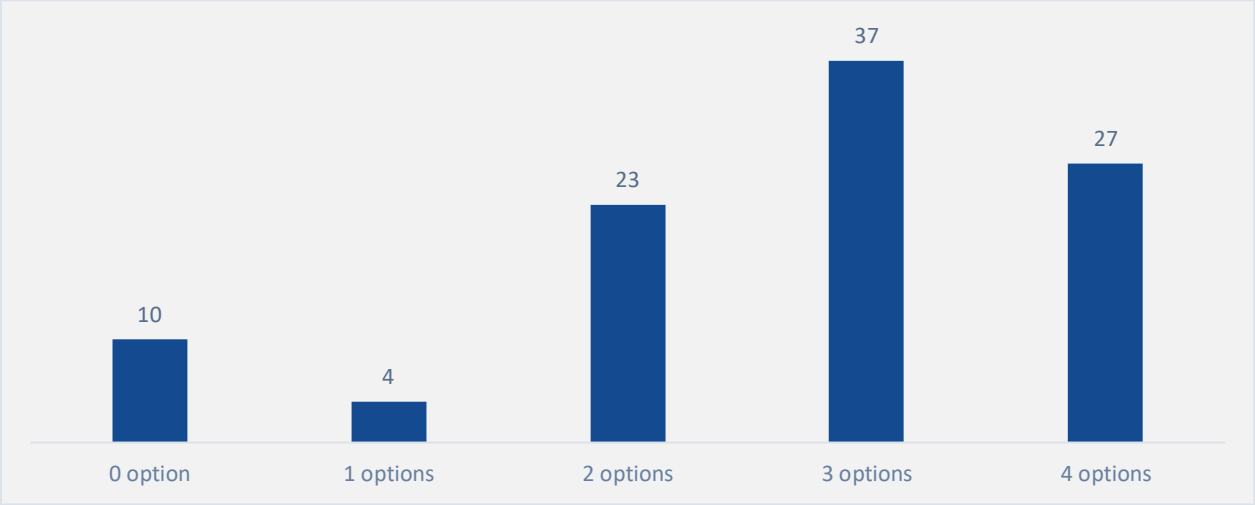
information from suppliers was more common among surveyed service providers (83.7%) than suppliers proactively providing such information about their products/services (57.3%). However, this practice is not a proactive way of sharing information for the service provider group.

Figure 51. Promoting demand for circular products and services, %



With regard to the promotion of the demand for circular products and services, of 4 strategic options, the MSMEs made a selection of an average of 2.68 options.

Figure 52. Promoting demand for circular products and services, in percentage



For producers, it is not surprising that urban enterprises and larger companies with more employees have more options for this CE strategy.

The packaging industry has the most options among other industries. While the figures show a positive trend to support demand for circular products and services, capacity-building activities are still needed to foster readiness. This includes establishing regular communication channels with partners about sustainability and adopting a systematic approach to dealing with waste in a more circular manner. In addition, there could be some legislative policy to encourage communication on the sustainable quality of products and services as well as to certify qualified persons.

For middle consumers, regarding the question on the CE strategy, service providers in rural areas chose at most 4 options (41.7%), which is almost 11% higher than those in urban areas. Service providers with 11-49 employees chose the most options at the highest percentage compared to the other two groups.

Moreover, grocery stores selected the most options (41.9%), food service providers 35.7%, and accommodation providers opted for the lowest or 30.7%. Several factors contributed to these indicators. These could include resources to support waste management, proximity between service providers and customers, and consumer expectations of sustainable operations, among other factors.

Associated R: Rethink, Reuse

The successful implementation of the CE depends on the readiness of the MSMEs which are influenced by internal and external factors (Prieto-Sandoval et al., 20186). External factors include government policies, market conditions, technological developments, and others. Internal factors include the existing resources (capital, money, human resources, etc.), capabilities, research, product development, business sustainability, and strategy or industrial competence. According to the findings, these internal factors still "require improvement." At present, the supply-side MSMEs conduct their business activities in the conventional way, i.e., purchasing raw materials and energy, manufacturing products, and selling them on the market. These companies are less involved in product design and post-consumption stages. Stepping out of one's comfort zone and entering other phases, such as applying the re-design principle, are considered a more effective waste reduction approach. Moreover, this could open the door to exploring other possibilities of the CE. Since operating in a conventional manner, most CE solutions currently focus on increasing resource efficiency, energy conservation, clean production, maintenance, reduction, and in some ways, reuse and recovery principles.

This may be due to external factors such as lack of economic and financial resources (59%), limited access to support, and lack of investment (52%), according to MSMEs. In addition, based on the research findings, it can be suggested that inadequate access to information about environmentally friendly technological advances, lack of knowledge about global, regional, and national trends in energy efficiency, and insufficient support and incentives of the current legislation weaken the readiness of the MSMEs. In order to introduce the CE and increase its capacity, it is crucial to create a favorable legal environment. This includes providing capacity-building programs for policymakers, organizing initiatives to promote sustainable development, and emphasizing the role of financial institutions (including local banks) in developing and making green financing options available.

3.2.2. Stance of end-users

100 tourists were included in the end-user survey, of which 20% were foreign tourists who had traveled to Mongolia in the last two years, and 80% were domestic tourists. The average age of the participants was 36.7, the youngest was 18, and the oldest was 82. In terms of gender, 39% are men and 61% are women.

Domestic and foreign travelers were asked to identify what could be improved in order to reduce the negative environmental impact of the camps where they spent the night, 63% mentioned the separation of recyclable waste and sending it to a recycling center, 36% stressed the disposal of the waste to a treatment facility without being openly dumped into the river, and 32% stated the placement of information boards and reminders for vacationers to treat nature properly.

One of the main problems of the tourism region is the problem of waste. This is because most domestic tourists travel by privately owned cars and tents, resulting in conditions for waste generation everywhere, not in the approved places for camping or waste disposal points. Furthermore, according to the Law on Waste (16.8. It is prohibited to establish ordinary waste recovery, recycling, disposal, and burying facilities in green areas, resorts, tourism, camping, housing, public areas, water reservoirs, special and ordinary protection zones of water sources, and drinking and domestic water supply sources, and in places where mineral resources have been determined or in areas prohibited by other laws. Within the framework of this provision, there is a provision to transfer and bury the waste generated in the tourist areas in nearby villages and settlements, however, due to the local budget and monetary limitations, the waste accumulation tends to take place in the tourist areas.

Table 47. What needs to be improved to make the camping location more environmentally friendly or to reduce its environmental impact

No	Indicator	Internal	External	Total
1	Sort recyclable waste and send it to a recycling point	61.3%	70%	63%
2	Waste should be pumped to an appropriate treatment facility without dumping it in the river or openly	35%	40%	36%
3	Place information boards and reminders for vacationers to treat nature properly	32.5%	30%	32%
4	Introduction of appropriate use of groundwater (use groundwater for only food purposes, systematize rainwater reuse)	17.5%	20%	18%
5	Save energy by reducing heat loss in the yurt and houses	5%	15%	7%
6	Completely unaware of these things (skip to next question)	3.8%	10%	5%
7	Other (toilet in the designated place)	3.8%	0.0%	3%

Source: End-user survey, N=100

The travelers were asked if they had expressed their opinions regarding the non-environmentally friendly actions of the camps where they stayed or the enterprises that are providing tourist reception services, 18.1% expressed their opinion, while 81.1% did not. There is no significant difference between foreign and domestic tourists in expressing their opinions. According to this, it is not enough for travelers to demand environmental protection and service standards.

Travelers' behavior

40% of foreign travelers stayed in hotels, while domestic travelers did not stay at hotels at all. Moreover, 22.4% of domestic tourists used camping points, while foreign tourists did not use them at all. Whereas the usage of rest areas, yurt camps, and guesthouse houses was the same. 8% of all travelers stayed in hotels, 30% in resorts, 29% in yurts, 15% in yurt guesthouses, and 18% in camping points. According to the readiness assessment, the introduction of CE methods and technologies in these facilities is insufficient.

Table 48. Accommodation and location used for traveling

No	Types of travellers	Hotel	Resort (House, building)	Yurt	Yurt house (guest- house)	Camping
1	Domestic traveler		33.8%	30%	13.8%	22.4%
2	Foreign traveler	40%	15%	25%	20%	
3	Total	8%	30%	29%	15%	18%

Source: End-user survey, N=100

For travelers and tourists, comfort, location, eco- and environmentally-friendly operations, and the taste and quality of food are more crucial when choosing an accommodation. There is no significant difference between foreign and domestic travelers in terms of the things that are more important for the places they go for travel and vacation. According to the Bank of Mongolia's 2019 survey, the most difficult problem faced by foreign tourists traveling in Mongolia is the availability of public toilets and sanitation. In Mongolia's tourism industry, public toilets, sanitary facilities, and waste are the main causes of soil and water pollution.

Table 49. Key considerations for the places one chooses for travel and vacation, %

1	Comfort and rating	38%	14%	8%	5%	17%	7%	11%
2	Price	18%	16%	17%	11%	18%	9%	11%
3	Location	26%	11%	11%	17%	7%	12%	16%
4	Diversity of services	19%	12%	10%	13%	14%	16%	16%
5	Eco- or environmentally-friendliness	23%	16%	9%	13%	10%	14%	15%
6	Infrastructure – Provision of toilets, showers etc	20%	20%	18%	7%	16%	8%	11%
7	Food taste and quality	24%	10%	10%	12%	12%	14%	18%

Source: End-user survey, N=100

Travelers and tourists were asked where they would be camping in case there was no designated service point, and 33% stayed in designated or approved spots, while the remaining 67% stayed in unauthorized spots. Local interviewees pointed out that one of the main reasons for the waste generation in tourist areas is camping in unauthorized spots. The Ministry of Environment and Tourism has launched a campaign to set up camping points in key tourism areas.

Figure 53. A place to stay, in case the service points and tourist camps are not available, %

Source: End-user survey, N=100

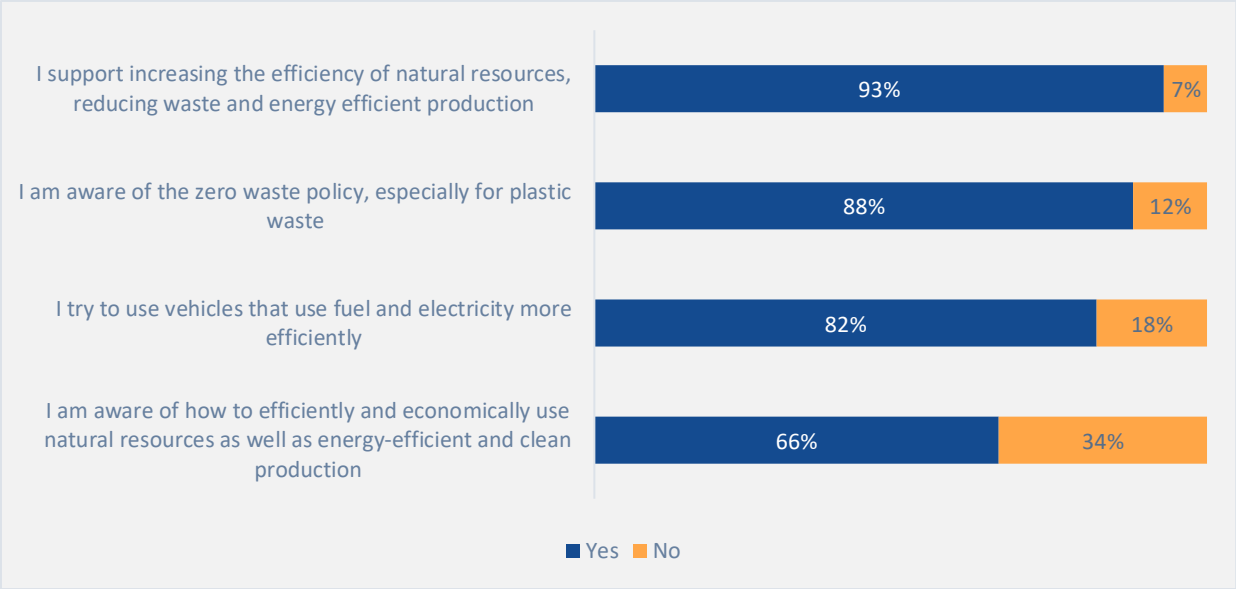
CE strategies and opportunities

Within the scope of the survey, tourists, who are the end-users, identified 5 areas of the 6 strategic areas of the Adelphi model: resource efficiency, extending the product lifespan, post-disposal waste recovery, inclusion in the supply circle, and increasing the demand for circular products and services. This is because the strategy for adopting a service-based model is irrelevant to end-user operations.

A. Increase resource efficiency

For the survey participants, activities in the direction of increasing resource efficiency are prioritized. For example, when asked about their understanding and attitude towards zero-waste economy and green development, 93% of them mentioned that they favored increased efficiency of natural resources, waste reduction, and efficient water and electricity production, 88% were aware of the zero-waste policy, especially for plastic waste, and 82% preferred to use vehicles that have more efficient fuel and electricity consumption, while 66% supported increased natural resources efficiency, waste reduction, and efficient production of water and electricity. Although there is a high interest among users to increase resource efficiency, implementation is weak compared to other indicators.

Figure 54. Increasing resource efficiency

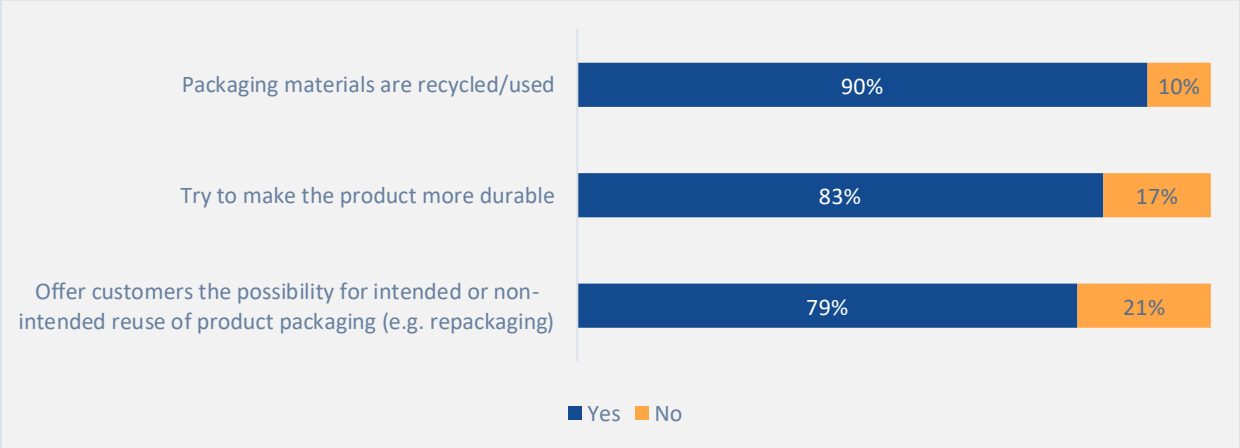


Source: End -user survey, N=100

B. Extension of the product lifespan

Participants were inquired if their purchases would be affected by eco- and environmentally-friendly products and services, 90% of them mentioned they reused containers and packaging materials, 83% tried to enhance product durability, and 79% of them preferred the customers use product packaging for their intended or non-purposed purposes. emphasis on reuse. However, there are no recycled containers and packaging products produced by the Mongolian domestic market or domestic producers. Garbage bags are the most common final product produced by domestic recycling companies that are operating in the domestic recycling market. Specifically, 33.3% of the surveyed producers, or one of every three factories, said they produced garbage bags. As for recycling factories, there is no production for food packaging. The reason for such underproduction is due to the "absence of detailed standards for food packaging as well as a lack of comprehensive standards, rules and regulations on what ingredients and levels of recycled plastic can be used in food production"19.

Figure 55. Extension of the product lifespan



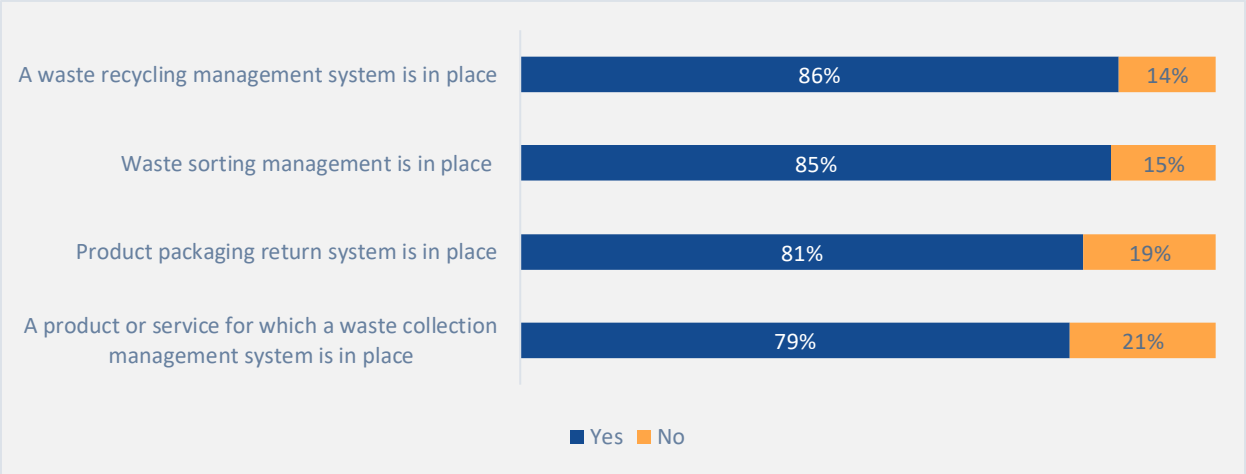
19 In 2022, the MIRIM Consultant Ltd carried out the "Sustainable Plastic Recycling in Mongolia", research report, funded by the European Union

Source: End-user survey, N=100

V. Recovery after disposal

Travelers were asked if their purchases would be affected if they were offered eco- or environmentally-friendly products and services, 86% mentioned they would consider if there was a waste recycling management system, 85% if there was a waste sorting management system in place, and 81% if there was a packaging return system, and 79% responded they would consider if there was a waste collection management system. According to this, travelers are in need of a waste recovery management system. However, service providers do not have a management system for waste sorting and re-sorting. In particular, in the case of locality, due to a lack of local waste sorting and recycling industry, active enterprises do not pay sufficient attention to waste sorting.

Figure 56. Post-disposal recovery



Source: End-user survey, N=100

G. Introducing the supply into the circle

The respondents were asked if they considered the packaging material of the product when buying liquids, and 85% of them checked the ingredients and safety of products and services before making the purchase. However, 76% of respondents considered the reusability and recyclability of packaging. According to statistical data, the packaging of liquids bought and sold in Mongolia are mostly recyclable plastic bags, packaging, and glass.

On the other hand, the primary industry of plastic processing is not well developed, and there are no recycling plants for certain types of food plastic bags and bottles. Also, it is common for MSMEs to use low-cost, non-recyclable packaging for production and services due to financial constraints.

The fact that the majority of dry and liquid food packaging is imported from China is a limiting factor in the choice of MSMEs. According to a survey conducted by the professional association, Mongolia has an annual need for packaging worth more than 520 billion MNT and about 65% is met by imports and more than 35% by domestic production. More than 90% of imported packaging products are purchased from China and the rest from Russia and other countries20.

20 MOFALI, MOFALI - offices

For MSMEs, the tendency to opt for organic paper packaging has been increasing in recent years, yet it is the main factor that increases the product costs.

Figure 57. Introducing the supply into the circle, in percentage

Source: End-user survey, N=100

As stated in the 2022 Statistics of the MOFALI, approximately 50 enterprises active in the packaging field in Mongolia provide more than 2,000 jobs and produce various types of plastic bags, food packaging, plastic bottle corks, and various types of cloth and paper bags, cloth bags, nets, heavy-duty and non-heavy-duty sacks, disposable cutlery, canisters for liquid products, and all kinds of labels are produced and sold domestically and worth more than 170 billion MNT annually.

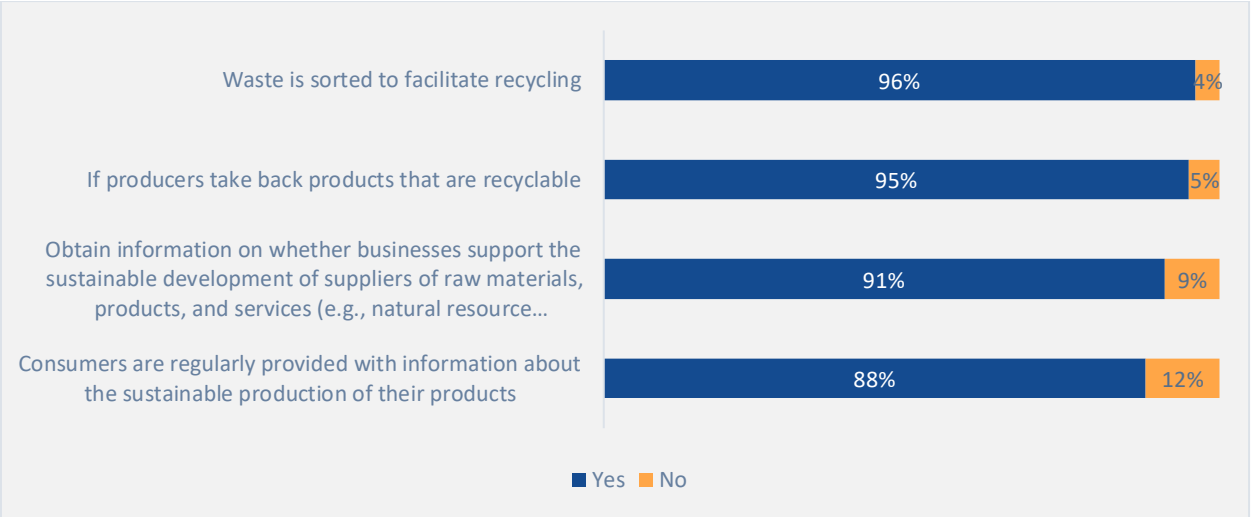
D. Increasing the demand for circular products and services

It is important for consumers if tourism service providers and food producers provide the following knowledge and information about eco- and environmentally-friendly products and services. In order to facilitate recycling for consumers, sorting and reclaiming waste is crucial, yet in the current tourism sector operators, sorting, reclaiming, and recycling activities and production are insufficient.

For example, few varieties of recyclables are being processed in Mongolia, and the production capacity is inadequate. Service points that buy plastic raw materials commonly buy three types of plastics and do not buy other types of plastics: PET, HDPE, and PE. As of 2021, these service points have purchased PET rigid plastics at an average of 191 MNT per kilogram, HDPE soft plastics at an average of 457 MNT per kilogram, and PE plastics at an average of 578 MNT per kilogram. Three service points, or 4.5% of the 67

service points that buy plastic, mentioned that they only supply to a certain established factory, while 22 points, or 32.8%, do not supply it to an established factory, they only sell the recyclables by their own choice. The remaining 42 service points, or 62.7%, flexibly go both ways, either to supply to an established factory or another factory at the time of their choice.

Figure 58. Increasing the demand for circular products and services



Source: End-user survey, N=100

According to the research report developed by the MIRIM Consultant LLC, within the framework of the "Sustainable Plastic Recycling in Mongolia", funded by the European Union, as of 2022, 18 factories actively operating in the market have the capacity to recycle approximately 18,500 tons of plastic per year, and as of 2021, an average of 52.4 % of its capacity was used. Specifically, one producer with the market sales revenue used 85% of its capacity, while the remaining producers used 50.3% of their capacity on average. This suggests that in 2021, producers recycled approximately 10,000 tons of plastic products in total. In terms of annual production capacity, 5 of the 18 surveyed factories can produce less than 500 tons, 5 can produce 501-999 tons, 3 can produce 1000-1500 tons, and the remaining 5 can produce more than 1501 tons. From this, it can be seen that large and small factories of different capacities are operating in the market. Considering the names and types of products produced by the 18 producers involved in the survey, the most common pellet products are HDPE and LDPE.

E. Travellers' habits and consumption

According to a survey conducted by the Bank of Mongolia in 2019, the amount of spending by tourists was studied. The average travel time for travelers is 14 days. According to the survey, tourists who booked a tour through their tour agent spent 2,187 USD in 14 days, while tourists who bought a tour from a Mongolian tour operator paid an average of 2,048 USD. On the other hand, the tourists who organized their trip without buying a travel package spent an average of 1,658 USD or as follows. Of these costs, 246 USD were spent on food. However, per the 2022 Domestic Traveler Behavior Survey of the MIRIM Consultant LLC, the average domestic travel period is 7.8 days. Considering the amount of travel expenses during this period averaged to 1,156,289 MNT. Of this, 32.8% or 370,000 MNT was spent on food and drinks. According to this research, when it comes to where they collect their food and drinks while traveling, 34% buy from chain stores, and 26% buy from wholesalers and bazaars in the capital. For international standard practices, there is a system where chain stores buy back recycled products that are the leftovers of the purchased products, under the terms of discounts and incentives. Therefore,

there is an opportunity for Mongolia to introduce this experience in line with this consumer buying behavior.

Figure 59. Locations where one collects travel supplies and groceries, %

Source: End-user survey, N=100

Most of the products sold in Mongolia come in plastic bags or plastic packaging. Consumers or travelers were asked how they make a choice for liquid product packaging and services, and the results are demonstrated below or they mentioned considerations such as eco-friendliness, sturdiness, easiness to carry, popularity, health benefits, recyclability, long shelf life, etc.

Table 50. Selected types of packaging materials for products or services when purchasing liquids, %

No	Type of waste	Beverages		Alcohol and beer	
		Chooses	Do not choose	Chooses	Do not choose
1	Glass	40%	60%	47%	53%
2	Can	30%	70%	48%	52%
3	Plastic	55%	45%	9%	91%
4	Paper material	30%	70%	8%	92%
5	Tetrapak packaging	19%	81%	1%	99%
6	Plastic bag	8%	92%	2%	98%
7	Other	1%	99%		

Source: End-user survey, N=100

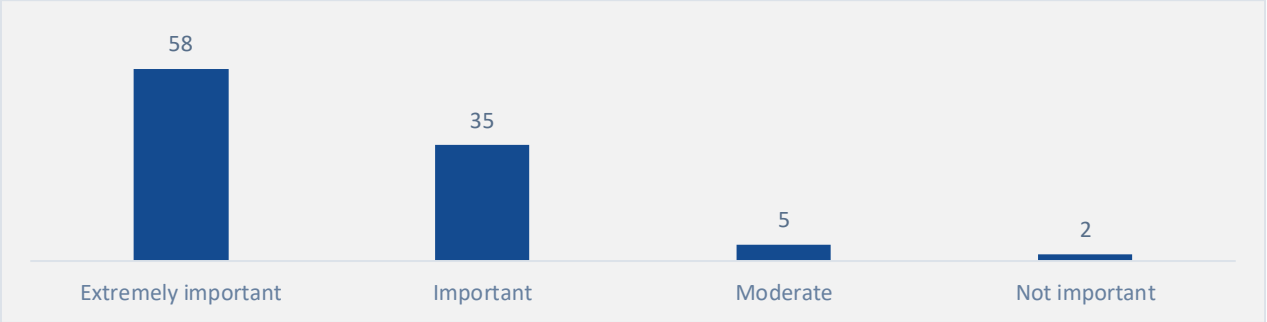
77% of travelers carry their trash bags, 70% take their trash to the nearest designated point, and 34% throw it into a trash can at a designated point for trash disposal. From this, it can be seen that although open dumping of waste has decreased, there is a lack of waste sorting and recycling culture.

Figure 60. Ways in which travelers deal with their waste, %

Source: End-user survey, N=100

For travelers, 98% believe it is of moderate or above average importance to introduce waste-free and environmentally friendly production and services in the tourism industry. Even though consumers are emphasizing the importance of waste-free, eco-friendly, and sustainable development in the tourism industry, service providers and manufacturers are not ready for this.

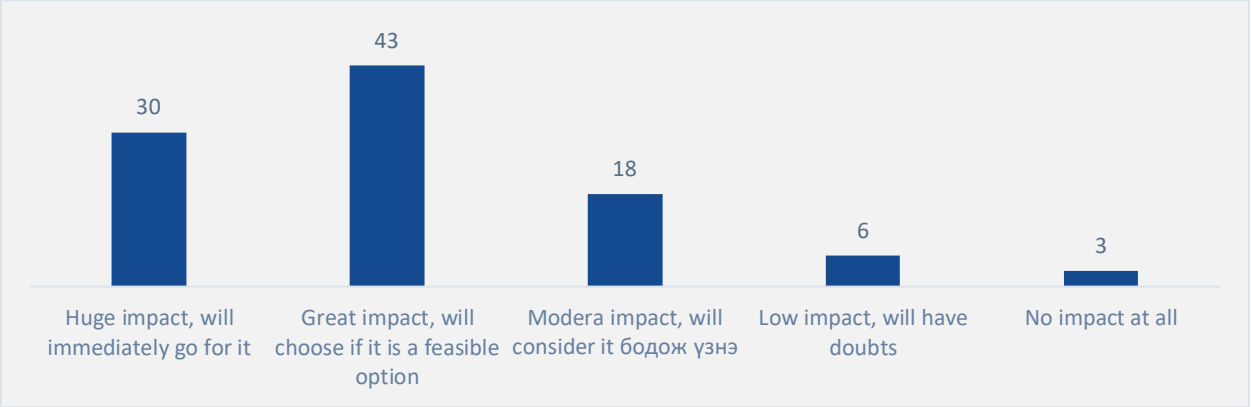
Figure 61. Importance of introducing waste-free and eco-friendly production and services in the tourism industry, in percentage



Source: End-user survey, N=100

91% of travelers said that it would have a moderate or above-average impact on their choices if the place they stayed offered eco-friendly products and services, while the remaining 9% believed it would have a low impact.

Figure 62. Impact of environmentally friendly products and services on one's choice, in percentage



Source: End-user survey, N=100

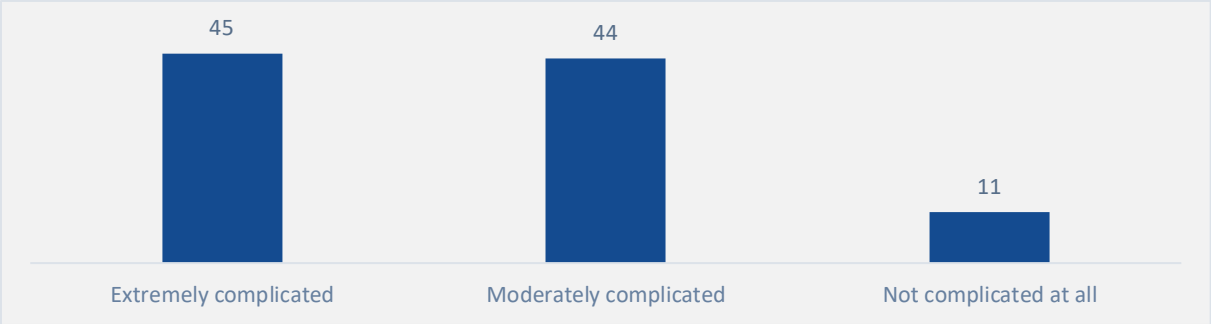
When asked if they were willing to pay a higher price for environmentally friendly products and services, 27% said they would not pay a higher price, while the remaining 73% believed that they would be willing to pay a higher price. Based on this, there is a high level of desire for environmentally friendly and waste-free willingness among consumers.

Figure 63. Purchasing eco-friendly travel services at a higher price, in percentage

Source: End-user survey, N=100

In the last five years, 16% said yes, and 84% said no when asked if they knew any small and medium-sized industries and services that have adopted environmentally friendly, low-waste services, solutions, and technologies in their operations. Also, 45% of customers answered that it was complicated for them to find eco-friendly businesses, 44% that it was moderately complicated, and 11% that it was not complicated at all. According to this, few businesses in the market offer environmentally friendly production and services.

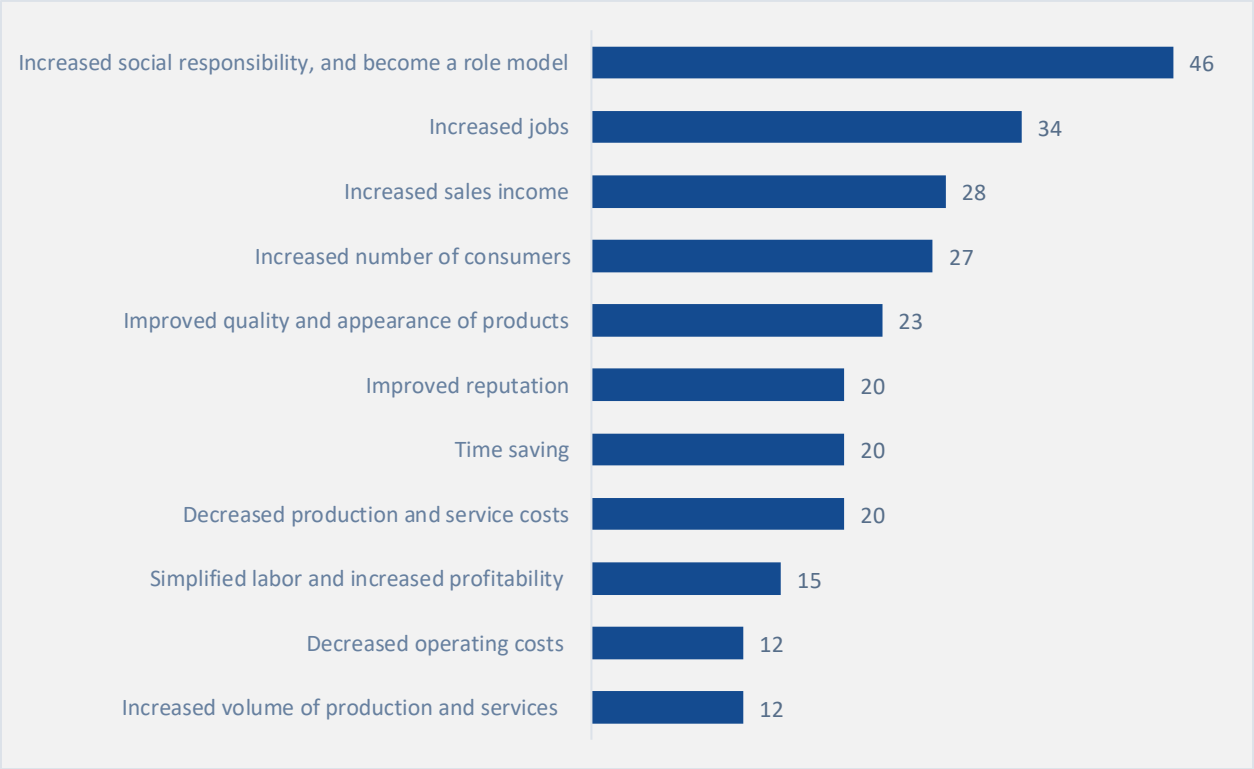
Figure 64. If it is difficult to find and use the services of an eco-friendly business, in percentage



Source: End-user survey, N=100

Consumers were asked the kinds of changes that would take place once the MSMEs operating in the tourism sector adopt green technology and move to an eco-friendly, zero-waste economic model, and 46%, 34%, 28%, and 27% expect increases in social responsibility, in jobs, in sales, in the number of consumers, respectively. While 23% assume an improvement in the quality and appearance of products and services.

Figure 65. Changes that will follow when the production and service enterprises operating in the travel and tourism sector adopt green technology and switch to an eco-friendly and zero-waste economic model, %



Source: End-user survey, N=100

4. STAKEHOLDER ASSESSMENT

4.1. Background

One of the most important pillars for the development of the CE in the tourism sector is seen as the development and improvement of stakeholders' cooperation. In the tourism sector in Mongolia, various stakeholders play important roles in shaping and developing the industry. These stakeholders collectively contribute to the growth, management, and sustainability of the tourism sector in Mongolia. Therefore, collaboration and coordination among these stakeholders are essential to ensuring CE in the tourism sector. Currently, there is no adequate information in the stakeholder mapping or analysis on CE activities in tourism.

This assessment aims to provide a general overview of the stakeholder's perspectives of the circular economy's role in collaboration within the tourism sector. In the context of Mongolia, the transition to a CE would involve various stakeholders, including government bodies, businesses, non-governmental organizations (NGOs), etc.

The objective of the stakeholder assessment

Conducting a **comprehensive stakeholder assessment** is an indispensable aspect of identifying the significance and influence of the parties involved at each phase of a CE approach in the targeted sectors and is pivotal to the success of the project. This evaluation will enable the identification of those who stand to benefit most from the adoption of a CE approach in MSMEs led by women engaged in tourism in Mongolia and those who are unlikely to make a clear impact on the sector's goals. Furthermore, this analysis will serve as a foundation for recognizing potential participants in the subsequent stage of the project, including the working group tasked with formulating the green development roadmap of the sector and the national-level policy discussion to be established within the framework of project component 3.

Scope of the stakeholder's assessment report

There are four main steps involved in stakeholder mapping.

1. Determining stakeholders: The initial work of a technical assistance project requires interaction with multiple stakeholders within the target sector, including governmental and non-governmental organizations, international organizations, etc. Therefore, it is crucial to list all potential stakeholders.
1. Stakeholder mapping and analysis: All potentially relevant stakeholders are placed and categorized on an analysis matrix. In doing so, they will be ranked based on their interest, expertise and influence. In this way, it will help to understand which issues are essential to which stakeholder, determine what adverse problems that stakeholder can cause, and further develop methods and strategies for cooperation among stakeholders.
2. Develop a communications strategy: Stakeholders with the highest degree of importance and influence will benefit from a CE approach in the future or risk suffering losses. Their activities are considered critical, so they belong to the priority communication and cooperation group. On the other hand, less important and less influential stakeholders do not benefit tot he same degree. Therefore, they do not bear the associated risks, and different communication strategies can be used to reach these stakeholder groups.

3. Conclusions and recommendations: This part will be used at multiple levels, such as to expand communication for the sector, to gain support, understanding, and motivation in the negotiation stage of the stakeholders, to gain the trust of the stakeholders with low support, and to increase the effectiveness of new activities, policies, and planning.

In general, stakeholders' analysis will help determine the most effective way to introduce a CE option to MSMEs, how to reflect their opinions and criticisms at the policy level, and how to involve them in the processes.

4.2. Methodology

Determining stakeholders is the initial step of the stakeholder analysis entails the identification of all the potential stakeholders who may impact the project and adopt the CE practices by MSMEs in the tourism sector. Qualitative analysis with the use of primary sources (expert knowledge) and secondary sources of information (desk research) was applied in this research to identify potential stakeholders. Thematic interviews with open-ended questions were used to generate data during stakeholder mapping regarding CE. The interviews aimed to create a discussion-like atmosphere rather than following a strickt question-answer dialogue format. The interview questions covered themes relating to the CE and stakeholders understanding thereof, the linkage between CE practices and collaboration in interviewee's work organizations and in Mongolia.

In total, ten professionals representing the key stakeholders were interviewed. For the desk review, we analyzed organizational strategy documents, relevant reports, and primary activity information primarily sourced from their official websites to conduct a comprehensive stakeholder assessment.

It is important to establish scoring criteria aligned with project objectives to construct a comprehensive stakeholder map that accurately reflects crucial aspects for MSMEs. Various stakeholder mapping methods utilize different criteria. Among the most pertinent criteria selected for this project were: i. interest or willingness to collaborate, ii. expertise, iii. influence/impact, and iv. capacity for engagement (in some stakeholders) in implementing CE at MSMEs in tourism in Mongolia. Guiding questions for scoring stakeholders based on the selected criteria are shown in Table 51.

Table 51. Criteria for scoring stakeholders

Criteria	Guiding Questions
Interest	What is the interest of the stakeholder in ensuring the uptake of CE practices in the food, brewery and packaging sectors in the tourism industry? Can this stakeholder directly benefit from CE practices?
Expertise	What is the expertise of the stakeholder in support, implementation or other processes of CE practices uptake?
Influence/power to the CE practices implementation	Can the stakeholder influence the capacity of the MSME to uptake CE practices?
Capacity for engagement	Does the stakeholder have a capacity for engagement in the establishment of the CE practices in MSMEs? What resources could be used for engagement?
Final score	The average of all 4 criteria

The third phase of stakeholder mapping entails the visualization of the obtained information as a result of the stakeholder scoring process. The results of the second and third phases are presented in the next parts of this document.

The stakeholder evaluation is based on qualitative scores assigned to each criterion, which are informed by expert knowledge and desk research on the stakeholder's functions, strategy, activities, projects, and

programs. Each stakeholder is rated on a scale of zero (0) to three (3), with a higher score indicating greater relevance. For example, a score of three for "interest" indicates that the stakeholder is highly interested in promoting the adoption of CE approaches in MSMEs, while a score of zero suggests no interest in CE. The average score of the four criteria is then calculated and used to position the stakeholder in the ecosystem map, with those closer to the core being more relevant.

Advantages of the assessment model

The stakeholder mapping method offers a flexible approach to data gathering data and scoring stakeholders (the criteria shown in Table 11). The data collected (See in Annex 1) provides additional information that extends beyond mere mapping purposes. One of the possibilities of use of the gathered information is the application of the Power-Interest Grid. This data enables comprehensive analysis of stakeholders' potential or existing support for adopting a Circular Economy (CE) and facilitates the development of targeted communication strategies. The following report presents the findings and recommendations derived from this process. By leveraging the flexible stakeholder mapping method and utilizing the accessible data provided in Annex 1, this report offers valuable insights into stakeholders' support for CE adoption in the tourism sector. The analysis serves as a foundation for targeted communication strategies aimed at fostering collaboration and advancing CE practices. Ultimately, this report contributes to the wider goal of transitioning the tourism industry towards a more circular and environmentally conscious approach.

Limitations or challenges of the assessment model

Stakeholder assessment is a valuable tool for understanding stakeholders' interests, influence, and potential impact on specific thematic areas. However, it is important to be aware of its limitations. Some limitations related to the stakeholder assessment are explained below:

- Static assessment – stakeholder assessment often represents stakeholders' position at a specific point in time. Stakeholder dynamics can change throughout a project, and their power and interest levels may evolve. This static assessment may not capture these dynamic changes adequately. Hence, depending on the new information inputs position of stakeholders or the strategies of collaboration with them might need an adjustment.
- Subjectivity - assessing interest, expertise, influence and capacity for engagement of stakeholders can be subjective and open to interpretation. Desk research, while valuable, can present limitations in terms of objectivity. Moreover, different individuals and teams may have varying perspectives on stakeholder positions regarding the subject, which is the adoption of CE practices in MSMEs in the tourism sector in the case of this project.
- Limited consideration of stakeholder perspectives may not fully capture their perspectives, concerns, values, or aspirations. This limitation can hinder understanding stakeholders' viewpoints and engaging them effectively.
- Inadequate consideration of external factors – the assessment based on the criteria may not account for external factors and contextual influences that impact stakeholder power and interest, such as regulatory changes, socio-political dynamics, or economic shifts. Neglecting these external factors can limit the accuracy of stakeholder assessments.

To address these limitations, it is crucial to adopt a comprehensive and iterative approach to stakeholder assessment and stakeholder engagement. This entails involving a diverse range of stakeholders, gathering information from multiple sources, fostering open and transparent communication channels, and regularly reassessing and updating stakeholder assessments to account for changes in the stakeholder landscape.

4.3. Stakeholder groups and their roles

Micro, small, and medium-sized enterprises (MSMEs) play a crucial role in the tourism sector in Mongolia, particularly those led by women in service provision and supply chains. The current stakeholder mapping has been developed with a central focus on MSMEs, specifically those who have the potential to adopt, CE approaches and improve resource efficiency in their operations.

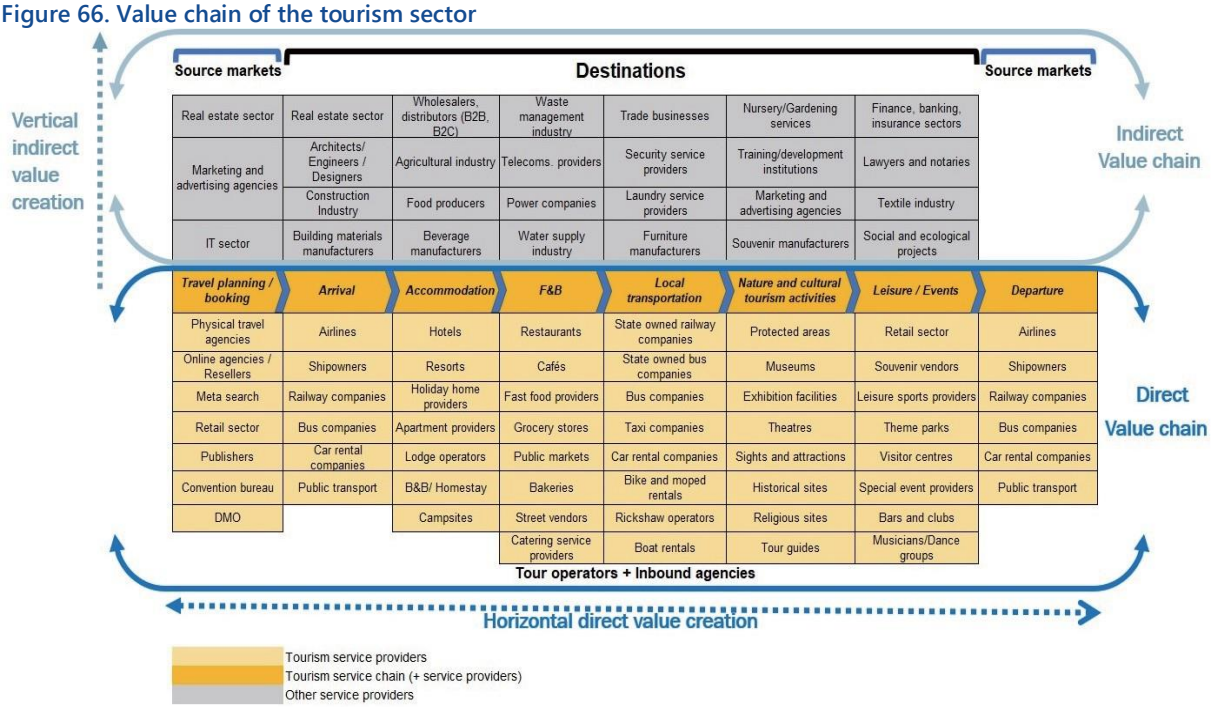
Under the Law of Mongolia on Supporting Small and Medium Enterprises and Services (2019), micro, small, and medium-sized enterprises (MSMEs) are defined as entities operating in production, trade, or services with up to 200 employees and annual sales income of up to MNT 2.5 billion[21]. In selecting project beneficiaries, consideration will also be given to self-employed and unregistered entrepreneurs.

It is essential to note that all activities and collaborations are oriented towards the success of MSMEs, with the ultimate objective being the adoption of CE practices and the reduction of their environmental impact within the accommodation, food, and beverage sectors. Thus, the stakeholder analysis has been conducted with an MSME-centric view to ensure that all efforts and initiatives align with improving resource efficiency and fostering sustainable practices in the tourism industry. In the tourism sector, various horizontal direct value creators contribute to the overall value chain and play essential roles in delivering tourism products and services. These value creators operate across different sectors and provide essential support and services to the tourism industry. Here are the main MSMEs that are considered target MSMEs in our assessment:

- **MSMEs in the accommodation:** Hospitality services encompass a wide range of businesses that directly serve tourists, such as hotels, resorts, guesthouses, and other types of accommodations. These businesses provide lodging, dining, and related services to ensure a comfortable stay for tourists.
- **MSMEs in the Food and Beverage providers:** Restaurants, cafes, bars and food service providers contribute to the tourism sector by offering dining options and culinary experiences to tourists. They showcase local cuisine, provide diverse food and beverage options, and contribute to the overall gastronomic experiences of travelers. In addition, this includes providers that offer any products or services to tourists and travelers where packaging is utilized.

[21] Sustainable Recovery Options for Mongolia's Micro, Small, and Medium-Sized Enterprises (ADB Brief No. 160)

Figure 66. Value chain of the tourism sector



The roles of stakeholder groups are defined based on desk research. Furthermore, stakeholder groups were divided into thematic groups depending on the type of intervention and support/services they have for CE implementation or working with MSMEs. Roles are based on assumptions depending on the services they provide, implemented projects, and their expertise in the field. It is important to note that although roles are defined based on sources of information some of them are assumptions and may be adapted in the future.

To create a comprehensive stakeholder map for MSMEs in the tourism sector and facilitate effective project navigation within the sector's ecosystem, the current stakeholder analysis has considered a range of relevant stakeholders, such as:

Table 52. Stakeholders: Industrial intermediaries

Industrial Intermediaries - are entities facilitating the process of registrations, capacity development, technical assistance, legal frameworks, and development of networks, etc.
• **Associations** support, and protect the rights of their thematic industries and their members. Due to the focus of the project, the stakeholder map only considers associations in the food production and tourism industry. Services of associations include support in production, training of employees, information dissemination, advisory, and other development services. • **Large industries** are large food and beverage processing and tourism-related companies. They are not the direct beneficiaries of the project but rather benefit indirectly through the possible reduction of resource losses in food and beverage processing at the lower levels of the value chain (in MSMEs) where materials for production are acquired. They may benefit in terms of improved marketing opportunities, as well as through improved image through clearer production. • **NGOs** may facilitate the process by CE technology uptake on a broader scale and depending on their capacity could provide other functions and services to MSMEs.

Table 53. Stakeholders: Technical intermediaries

Technical Intermediaries – These are actors facilitating innovation by providing technical advice and/or access to resource-efficient technologies
• **Consultancies and certification** are broadly defined as facilitators of transformation in processing; they help clients improve processes and implement technological measures to achieve resource efficiency.

- **Academia** is a source of potential CE consultants. Students and staff have the opportunity to be trained on CE and to provide their services to MSMEs during and after the project. Besides, upon completion of the project, and training, a provision for the transfer of knowledge resources to **training institutions** (for example: technical universities) for curriculum development on CE.
- **Technology suppliers** are vendors providing access to resource-efficient technologies for manufacturing enterprises.

Table 54. Stakeholders: Financial institutions

Financial Institutions (FIs) have various legal statuses. They can provide financial resources (loans, grants, equity) to MSMEs to implement high-cost CE technologies. This group includes commercial banks, microcredit organizations, international financial institutions, and possibly international development organizations that might have financial products for MSMEs.

- **International FIs** include institutions such as international banks, donor organizations, foundations, and facilities. They provide funds through different programs for clean production, resource efficiency, climate neutrality, etc. International FI's use different channels to provide funding: i. local facilities representing their interests and providing direct funds; ii. Local financial institutions engaged to distribute dedicated funds based on a contractual basis, for example, local banks or microcredit organizations.
- **National FIs** include central/national banks, local commercial banks, local microcredit organizations, and other types of institutions (ministries) that provide loans or grants to the local population. These financial institutions have the potential to contribute to the CE implementation process by developing cleantech financing schemes, in particular for the acquisition of CE technologies or improvement of existing technologies. Funds for credit lines for CE implementation at local financial institutions may have different sources of origin. In practice, these credit lines are not necessarily exclusively CE-related, depending on the local financial environment these can be credit lines for clean energy, climate neutrality (mitigation), etc. Nevertheless, the scope of seeking funds should not be limited to the wording, as good funding opportunities can exist without a specific purpose of the funds or a credit line.

Table 55. Stakeholders: Development organizations

Development organizations are governmental organizations and international development organizations that support the development of the economic sector by providing policy support through the establishment of legal regulations and development programs and projects and monitoring the implementation of programs and strategies.

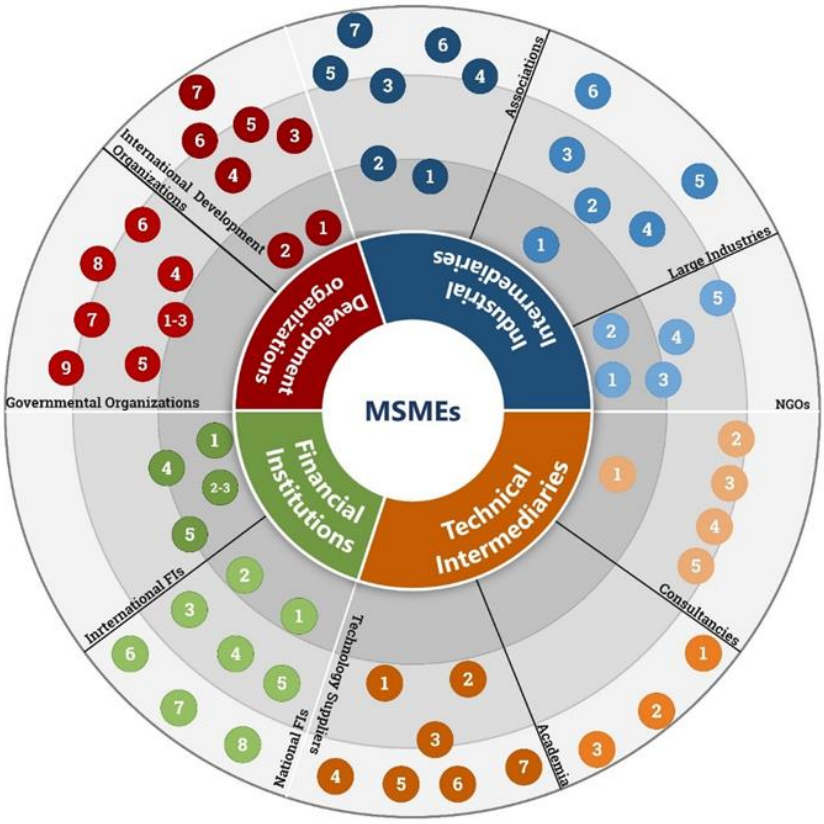
- **National Governmental organizations** comprise relevant ministries and governmental institutes as agencies, committees, etc. These are governmental bodies, institutions, and relevant ministries that enable and ensure the implementation of CE technologies through various development strategies such as green economy, energy efficiency, and others. These stakeholders have regulatory and monitoring functions in the implementation and enforcement of laws.
    - Ministries involved in the implementation of CE set the rules of the game on a legal basis by creating incentive mechanisms for CE practices by developing policies and legal instruments for resource efficiency as roadmaps, acts, plans, schemes, government programs, and strategies.
    - Governmental institutions (national and local levels) support the implementation of programs, agendas, and projects initiated by ministries by providing services to MSMEs, such as standardization, certification and technical support.
- **International development organizations** provide technical advice, support in the overall promotion of CE, financial support, and support in the dialogue with policymakers. Since the functions of international development organizations sometimes include financial support, this stakeholder group may also belong to the funding organizations

All these defined stakeholder categories are important for the promotion, implementation, and dissemination of CE at the national and regional levels. Some of them might not be directly related to the CE, but they might have an indirect effect on the CE uptake.

4.4. Stakeholder mapping and analysis

The result of the analysis of the stakeholder's relevance is provided below. The stakeholder map displays only the stakeholders who have received high scores, indicating their high relevance to the project.

Figure 67. Stakeholder analysis mapping in tourism industry of Mongolia

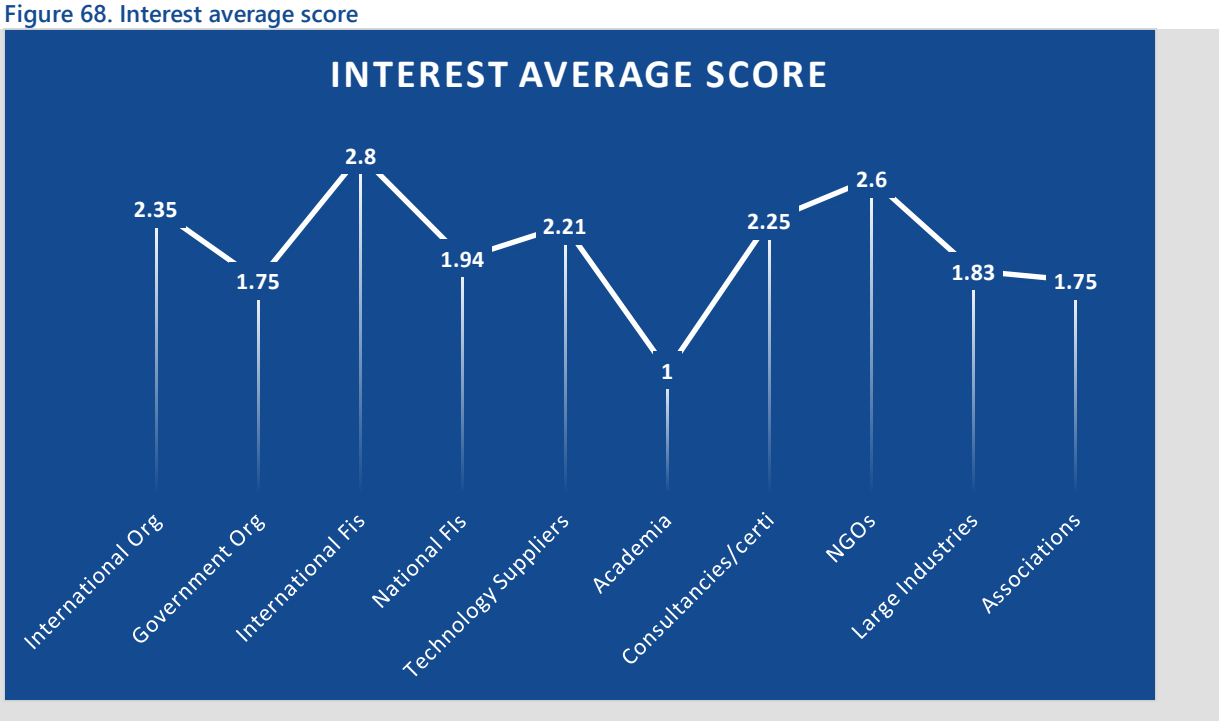


At the current stage of the project, the selection is based on the criteria of interest, experience and influence. The capacity for engagement of stakeholders has to be determined through direct interaction with them, therefore only has been determined in direct interaction with the Financial Institutions group.

Interest

Interest regarding ensuring the uptake of CE practices in the food, beverage and packaging sector in the tourism industry varied among the studied stakeholders.

Figure 68. Interest average score



Overall, the Government's Organisation's interest in uptaking in CE was generally average compared to other stakeholders. For example, the Ministry of Environment, Tourism Mongolia and Local Governers and City Tourism Department have received the highest score among the other government organizations. Other national-level stakeholders—had medium to low interest that just broadly considered economic, ecological and social sustainability strategy in their vision or had auditing and monitoring factors in both the short and long run. In addition, national CE-related legislation and regulations were considered to be important and beneficial for sustainable development in various documents. On the other hand, International organizations had the highest interest among all other stakeholders regarding the uptaking of CE practices in general. Most of the national CE-related projects were managed by international organizations. Their interest in promoting CE was clearly connected to making it more economically, ecologically and socially sustainable.

Industry organizations, specifically NGO groups viewed the CE as a tool for introducing sustainability to the logic of business and for facilitating holistic, sustainable value creation. The associations and large industries had a medium interest in building CEs for the tourism sector MSMEs. Although, MNCCI had the highest score among the associations, as it had the green hotel certification and certified organic certification process.

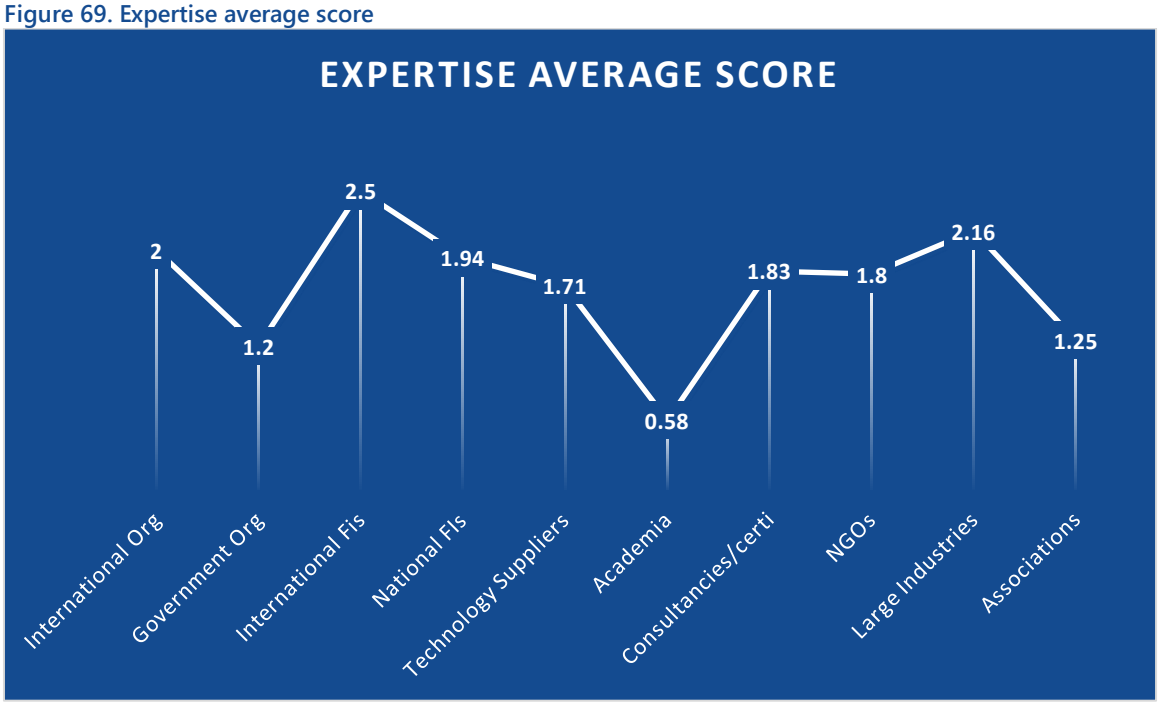
At the FIs level, the promotion of the CE and sustainability was considered as the highest interest, important and necessary value, specifically in International FIs. The average score for International FIs (2.8) was 0.9 points higher than comparing of National FIs (1.9).

In general, technical intermediaries including technical suppliers, consultancies and certification-related stakeholders had a medium interest. As it was mainly motivated by economic perspectives, with environmental and social dimensions rarely being discussed. In this respect, these values incorporated features of economic and, to a small extent, ecological sustainability.

Expertise

Stakeholders' expertise regarding sustainable CE varied from broad sustainability objectives to more precise actor-oriented expertise.

Figure 69. Expertise average score



At the national level, the government organizations had general expertise policies and regulations that encourage the adoption of CE practices in the tourism sector but it was relatively dependent on its direct functions. Therefore, direct expertise was lower than most of the other stakeholder groups. On the other hand, International FIs and International Development Organizations had the highest expertise in implementing various CE-oriented activities in the tourism sector and in general. These organizations considered the CE to be an opportunity to promote sustainable development and change as well as to resolve ecological problems in society.

Consultancies and certification bodies, such as the Sustainable Finance Association and Green Orbit Standard System, play a vital role in promoting sustainable practices. They raise awareness, provide guidance and certification programs, and facilitate knowledge sharing among the other stakeholders.

The National FIs' experience in CE is directly associated with financial loan programs that will promote new business and innovation opportunities for MSMEs and thereby promote CE in the tourism sector in Mongolia.

Large industries considered the CE to be a valuable way to improve their image, vitality and competitiveness and to generate welfare as well as to facilitate the recruitment of value-based, skilled employees in the future. The expertise of the companies was mainly for economic and business purposes. Technical supplies stakeholders were more likely to offer environmentally friendly product-producing expertise.

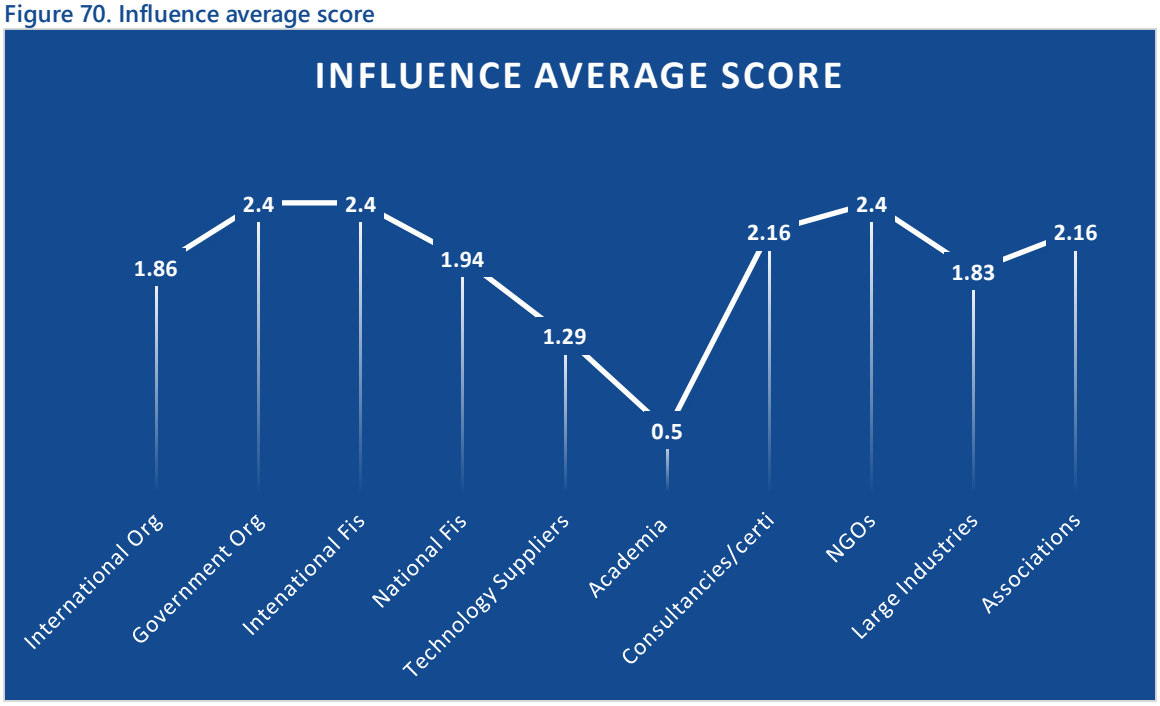
The lowest expertise listed in Academia stakeholders, as they did not have sufficient course programs and curriculum in the CE model, as well knowledge-sharing activities for students were lacking. Overall, the activities of preparing specialists and implementing training. Conducting research or studies under this theme is insufficient at this moment.

Tourism NGOs and environmental organizations often work alongside tourism stakeholders to promote sustainability and advocate for the adoption of CE principles. They mostly had expertise in raising awareness, providing guidance, and collaborating on initiatives that address environmental and social issues related to tourism.

Influence/Impact

MSMEs often face resource constraints, limited knowledge, and financial challenges so the influence and support from stakeholders are important. All of the stakeholders had their unique influences but, simultaneously, also possessed similarities related to legal and economic influence.

Figure 70. Influence average score



Currently, the status of the influence on the capacity of MSMEs to adopt and implement CE practices was above the medium in eight stakeholder groups. At the national level, government organizations are supportive of creating policies and programs specifically designed for MSMEs to transition to CE practices in line with long-term policy documents. Guiding and supporting mechanisms such as financial incentives, grants, and subsidies to support MSMSs in adopting sustainable technologies, improving resource efficiency, and implementing CE practices are being introduced. However, it is not under a comprehensive/unified policy and plan at the national level, it is chaotically located within the different functions and responsibilities of government organizations.

International and National FIs, including banks, investment funds, and impact investors, influence MSMEs' capacity to adopt CE practices by providing access to financial and capital. They are offering specialized funding options, such as green loans or supporting sustainable initiatives. By easing the financial burden and providing affordable capital, FIs can help MSMEs invest in CE practices. Collaboration with larger businesses and supply chain partners can enhance MSMEs' capacity to adopt CE practices. They can also support the development of sustainable supply chains by working closely with MSMEs to integrate CE principles into operations.

Academia had the lowest score among all stakeholders. Academia can contribute to MSMEs' capacity building by conducting research, providing access to knowledge and expertise, and developing tools and guidelines through their curriculum and courses. At this moment, there is not enough training

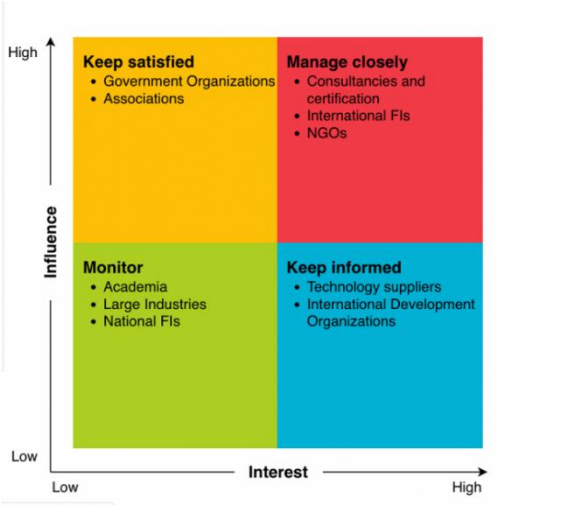
module and programs specifically tailored to MSMEs, to help them understand and implement CE practices. NGOs and Associations focused on the tourism industry have a crucial role in building MSMEs' capacity for CE practices since most of the tourism MSMEs are registered under different NGOs or Associations voluntarily. These organizations can also offer mentoring and coaching programs, helping MSMEs navigate the challenges and opportunities associated with CE implementation.

Conclusion of the analysis

Table 56. Stakeholder analysis

Stakeholders	Interest	Expertise	Influence
Technical intermediaries			
Consultancies and certification	2.25	1.83	2.16
Academia	1	0.5	0.5
Technology suppliers	2.21	1.71	1.28
Financial institutions			
Internationals FIs	2.8	2.5	2.4
National FIs	1.94	1.93	1.94
Development Organizations			
International Developments Org	2.35	2	1.86
Government Organizations	1.75	1.21	2.4
Industrial Intermediaries			
Associations	1.75	1.25	2.16
Large Industries	1.83	2.16	1.83
NGOs	2.6	1.8	2.4

Figure 71. Stakeholder Interest-Influence matrix



The stakeholders that fall under the **'Keep Satisfied'** category in the stakeholder matrix are the government and associations. These stakeholders have a high level of influence and interest in the CE. It is important to keep them satisfied by actively engaging them in decision-making processes, providing support and resources, and demonstrating the benefits of the CE in terms of economic growth, environmental protection, and social well-being. By keeping the government and associations satisfied, their commitment and support for CE initiatives can be ensured, leading to effective policy development and widespread adoption of circular practices within tourism industries.

The stakeholders classified as **'Manage Closely'** include consultancies and certification bodies, international FIs, and NGOs. These stakeholders possess specialized knowledge and expertise in CE practices and play an important role in guiding businesses and organizations in their CE journey. Managing them closely involves building collaborative relationships, seeking their input in policy development, and ensuring the quality and relevance of their services to meet the specific needs of MSMEs in adopting CE principles. By closely managing these stakeholders, their expertise can be harnessed, and their efforts can be aligned with CE goals, leading to effective implementation and successful outcomes.

Technology suppliers and international development organizations fall under the **'Keep Informed'** category. These stakeholders provide valuable resources, innovation, and insights related to CE practices. Keeping them informed involves sharing knowledge, trends, and specific needs related to CE implementation, as well as fostering collaboration and partnerships to ensure the availability of suitable technologies and sustainable development practices. By keeping technology suppliers and international development organizations informed, organizations can stay updated on the latest advancements and trends in CE practices, enabling them to make informed decisions and adopt relevant technologies and approaches.

The stakeholders identified under the **'Monitor'** category are academia, large industries, and national FIs. While they may not have the same level of influence or direct involvement as the stakeholders in the other categories, monitoring their actions and progress is crucial. Academia contributes to CE efforts through research, education, and knowledge dissemination, and monitoring their research findings and insights can inform CE strategies and policies. Large industries have significant resources and influence and monitoring their sustainability efforts can help identify opportunities for collaboration and encourage them to adopt CE practices. National FIs can provide financial services and support to MSMEs in adopting CE practices, and monitoring their initiatives ensures the availability of appropriate financial products for CE projects. By monitoring these stakeholders, organizations can identify areas for improvement, track progress, and leverage their actions to drive the adoption of CE practices.

The stakeholder assessment also reveals important insights into the different groups within the context of CE practices in the tourism sector MSMEs.

For the **'technical intermediaries'** group, the overall interest is high except for the academia group. This suggests that the stakeholders such as consultancies and certification and technology suppliers recognize the importance of CE and have a higher level of engagement and motivation. The expertise score shows a relatively lower level of expertise in CE practices within the tourism sector. This implies that these stakeholders may require further knowledge and specialization to effectively support and guide businesses in adopting CE principles. While these stakeholders possess some degree of influence specifically consultancies and certification stakeholders. The technical intermediaries group, which includes consultancies and certification, academia, and technology suppliers, demonstrates a moderate level of interest and influence but relatively lower expertise in CE practices within the tourism sector. Strengthening their expertise and increasing their engagement and influence can play a crucial role in successfully implementing CE initiatives and supporting businesses in the tourism sector to adopt more sustainable

practices. Collaborative efforts and knowledge sharing among stakeholders can help bridge the expertise gap and foster a more circular and sustainable tourism industry.

'Financial Institutions' recognize the importance and potential benefits of CE initiatives in the tourism sector. Also, have a reasonable understanding of CE concepts and can provide guidance and support to businesses in implementing sustainable practices. Financial institutions have the potential to influence business decisions through financial incentives, loans, funding opportunities and policy frameworks. To sum up, FIs engagement can play a vital role in supporting and financing CE initiatives, providing businesses with the necessary resources and incentives to adopt sustainable practices. Collaboration between financial institutions and other stakeholders can further enhance the impact and effectiveness of CE efforts in the tourism sector.

'International organizations' and **'government organizations'** are considering the importance and CE benefits in the context of sustainable development. For the government organizations' expertise, a relatively lower, and need for further capacity building and knowledge sharing among the organizations to effectively promote and implement CE initiatives. Developing organizations, particularly government organizations, play a significant role in policymaking and can influence the integration of CE principles into national development plans and strategies. Therefore, strengthening their expertise, particularly in terms of understanding the practical implementation of CE initiatives, can enhance their ability to provide guidance and support to MSMEs and other stakeholders. Collaboration between developing organizations, as well as with other stakeholder groups, can further amplify the impact of CE efforts and promote sustainable development in the tourism industry.

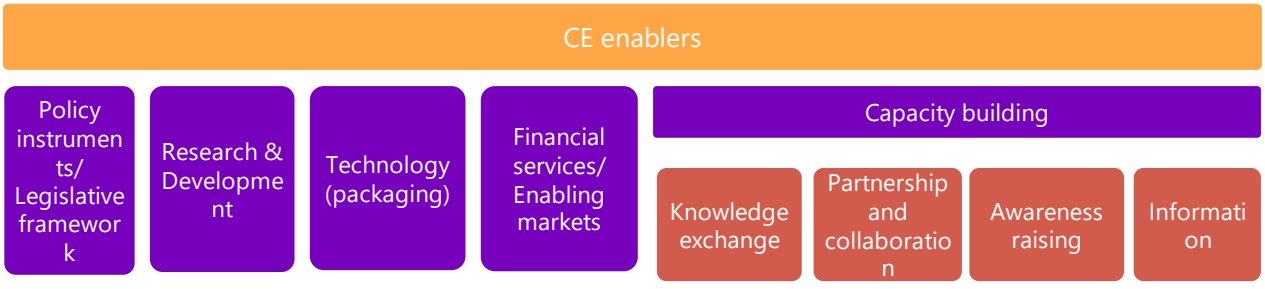
The **'industrial intermediaries'** group, consisting of associations, NGOs and large industries demonstrates a moderate level of interest and influence and a relatively lower level of expertise in CE practices (excluding large industries). This group has the potential to influence policies, practices, and collaboration among stakeholders to drive the transition towards a CE.

Overall, fostering collaboration among stakeholders, bridging expertise gaps, and promoting knowledge sharing are key strategies to advance CE practices in the tourism sector. A more circular and sustainable tourism industry can be achieved by leveraging the interest, expertise, and influence of different stakeholder groups.

Functions of Stakeholders in CE Enablers

Analyzing functions by enablers provides a comprehensive understanding of the specific roles and contributions of stakeholders in enabling the CE. Through this analysis, we tried to analyze the collaboration, resource allocation and targeted support, and identify the gaps and barriers.

Figure 72. CE enablers



Policy instruments and legislative framework: Government organizations play a key role in enabling policy instruments and legislative frameworks that support the transition to a CE. Those stakeholders are responsible for formulating policies and developing legislative frameworks that promote CE principles, not necessarily using the term CE as well as enacting laws and regulations that govern waste management, resource use, recycling, etc.

However, certain issues need to be addressed to enhance their effectiveness in this regard. Firstly, there is a limited integration of CE principles into national policies and strategies. While some governments have

Quotation 9. Case from the interviews

> *Factories have very poor understanding and willingness to recycle. Only now, thanks to the water project of the Millennium Challenge Fund, there is an understanding of how to purify and reuse wastewater. It is safe to say that there is almost no such concept. Most of the factory heads are non-professionals, so they don't think about this view because of their profit.*
>
> ***The water coming out of the factory is not sorted at all.***
>
> *Another pressing problem is that there are pit toilets in the neighborhood. This causes a lot of soil pollution. As a result, potatoes and vegetables are contaminated. Filtering technology is expensive. Factories are trying their best to detoxify, but they don't know what to do. The Ministry of Agriculture has begun to pay attention to this area. But they pay attention to the human side. The Ministry of Environment leaves this issue, too. It is difficult to make policies because our ministries are poorly coordinated.*
>
> Anonymous

recognized the importance of the CE, there might be a lack of comprehensive frameworks and strategies that fully integrate circularity across different sectors and government departments in Mongolia. This gap hinders the coordinated implementation of CE initiatives. Government organizations face capacity and expertise gaps in understanding and implementing CE principles.

Building the necessary knowledge and skills among government officials and staff is essential to effectively design, implement, and enforce CE policies and initiatives. Capacity-building programs and training opportunities can help bridge this gap. Lastly, Government organizations have challenges in engaging and involving various stakeholders, such as businesses, industry associations, NGOs, and research institutions. Inclusive and participatory approaches are needed to ensure diverse perspectives and expertise are considered in the decision-making processes.

On policy instruments and legislative frameworks, the first issue is the lack of coherence and integration between different policy instruments and legislative frameworks. In some cases, there may be overlapping or conflicting regulations, making it difficult for businesses and stakeholders to navigate the regulatory landscape. Harmonization and coordination among different policies and frameworks are necessary to provide a clear and consistent regulatory environment. Existing policy instruments and legislative frameworks may not adequately address the specific needs and requirements of the CE. As well, the concept of CE is rarely used in the official policy documents of any government agencies.

Stakeholder engagement is crucial for developing inclusive and effective policy instruments and legislative frameworks. However, stakeholders, such as MSMEs, industry associations, and NGOs, may not have sufficient opportunities for meaningful participation in the policy development process. Inclusive and participatory approaches are essential to ensure diverse perspectives and expertise are considered.

Research and Development: Stakeholders involved in research and development (R&D) contribute to the CE by driving innovation and developing new technologies, materials, and processes. Through the desk

review, government organizations face challenges in accessing sufficient funding specifically for CE R&D initiatives. Additionally, coordinating R&D efforts across the different organizations and departments of government and agencies is lacking. Large industries typically have greater resources, expertise, and research capacities. Therefore, knowledge sharing can foster collaboration and partnership opportunities between large industries and MSMEs. By exchanging knowledge, both parties can identify areas of mutual interest and explore joint research and development initiatives. This collaboration can lead to the development of new technologies, products, and services that address CE challenges, however, there is no adequate case for this collaboration at this moment.

For instance, as a representative of large industries in Mongolia, *MCS Group* is guided by ESG principles in its procurement and other operations for reducing negative impacts on the environment. It has built a model roadside rest place with environment-friendly solutions of solar, gas, and electric energy. As part of its comprehensive sustainability goals, it has also introduced heat-only boilers in its food manufacturing plant which is an emission-free, innovative engineering solution that eliminates the use of raw coal. In food and beverage packaging, *MCS Coca-Cola* LLC, one of the subsidiaries, is cutting back the amount of PET for beverage production and collecting aluminum tubes, and sending them to the waste recycling facilities while raising awareness for their customers. *APU* company also collects packages of its beverage products.

A few FIs are providing loans tailored for MSMEs engaged in CE-related R&D activities. This funding includes mostly product development, testing and scaling up innovative CE products or processes. However, this loan is not sufficient for all MSMEs and is limited in size and other scope.

Technology (packaging): Technology suppliers and developers are providing technologies that enable CE practices, such as recycling and waste management systems, renewable energy solutions, and resource-efficient manufacturing processes. However, there is no direct cooperation between technology suppliers and MSMEs. International organizations and FIs are working more cooperatively in this direction through their projects and programs. For instance, *Plastic Center* is involved in recycling plastic bag packaging and manufacturing eco-toilets and other products out of recycled materials while *Multivac* LLC sells an automatic and semi-automatic tray packaging machine for food products. For energy efficiency technology, *Green Solar Energy Mongolia* provides services for the establishment of low and medium-power renewable energy systems to homes and offices to reduce air pollution, save heat and electricity (solar water pump systems, solar and energy-efficient street lighting, heating solutions using geothermal energy, wind energy, etc). Given the cold weather of the country, energy efficiency technology is in high demand. More stakeholders in this area include *Ultrasonic* LLC (heating technologies and wastewater treatment installations), *Sankou Solar Mongolia* (solar trading and manufacturing), and *Energy Tech Progress* (energy-saving product supplier).

Financial services and enabling markets: FIs, such as banks, investment firms and microfinance institutions, provide support to MSMEs by offering financial services that help to enable CE practices. These services mostly include green loans and supporting women-owned businesses, and green finance practices. However, green loans and other programs are generally small amounts compared to the percentage of other loans and activities of the FIs. Certification and consultancies help to establish standards and criteria for sustainable and circular tourism practices, therefore, also helps to enable market transparency, guide consumer choices, and promote the adoption of circular practices for MSMEs. International organizations and FIs are supporting through its projects and programs, while government organizations (the Bank of Mongolia, Ministry of Finance, etc.) are working to promote and improve financial policy on green finance. Stakeholders' participation in financial services and enabling markets for CE are diverse but interconnected. Mongolian Bank Association and MSFA (ToC) are putting efforts into introducing sustainable finance

standards, guidelines and policies, and supporting their implementation through engaging in donor projects.

Knowledge exchange: Research institutions and academia are important parties in producing scientific studies, and case studies, conducting training and preparing specialists that contribute to the knowledge base of CE. Additionally, these stakeholders can collaborate with MSMEs, government agencies, and others to share knowledge, provide guidance, and support the implementation of CE initiatives. However, these CE-related activities and experiences are very inadequate or almost non-existent in academia. On the other hand, certain NGOs and consultancies play an important role in knowledge exchange by advocating for CE principles not only in the tourism sector and sharing best practices. They often engage with MSMEs, large industries and policymakers to promote sustainable practices and encourage the adoption of CE in the tourism industry. These organizations have the capacity to share knowledge on resources, toolkits and guidelines to help MSMEs adopt and implement CE practices. Moreover, government organizations can contribute more impactfully by organizing workshops, seminars, and conferences, and lately, the key institutions the Ministry of Environment and Tourism have organized several national conferences on supporting the country's sustainable financing and improving environmental, social and governance disclosures[22]. However, the cases and opportunities for greening growth exist mostly in the energy and mining sectors.

Based on the interviews and case studies, there is a slight notion of knowledge exchange in the tourism sector that resorts visit and learn from those who are pursuing environment-friendly measures and green economy principles in their businesses. For instance, *Jamor Grand* LLC's resorts welcome other tourist camps and stakeholders to learn from their good practices of how they are implementing the 5R principles of CE in waste management and resource (water, energy) efficiency. However, inter-sector collaboration and synergy are lacking among MSMEs in the tourism and food industry.

Quotation 10. Case from the interviews

> *"For food producers, there is an opportunity to develop as a cluster, so there is an opportunity to turn the released waste into food. For example, linking tourist resorts with farming can be mutually beneficial. The connection between them is bad in Mongolia. It does not happen because there is no such system. If we have a system, we will be able to connect with each other and support each other."*
>
> Anonymous

Partnership and Collaboration: International Organizations and International FIs are the most active stakeholders in this category with providing funding, technical assistance programs and coordination support for multi-stakeholder initiatives. While collaborations and partnerships among stakeholders are currently limited, there are significant opportunities to enhance and broaden these relationships. To improve, the initiatives of the government organizations are important in the first stage such as establishing working groups, task forces, or committees that bring together various stakeholders to collectively address CE challenges and develop strategies.

[22] ODI emerging analysis | Mongolia: Towards sustainable economic recovery

Quote 1. Case from the interviews

> *"ADB has implemented a composting project from food waste in cooperation with the municipality. The concept was to compost in the households in UB, where they put garbage cans to collect their food waste in their yards. In the end, it was heard that piling was not possible in the winter. We hear the news indirectly, we don't know exactly what they are doing through the official line, because the coordination is not good. There are a lot of funding from international donors in this field, but due to weak cooperation, the results are not realized to the expected extent.*
>
> Anonymous

The tourism industry stakeholders attempt to build collaboration that there are several numbers of associations, including the Mongolian Tourism Association, Ulaanbaatar Tourism Association, Mongolian Tourism Council of Professional Associations and other NGOs and consulting firms that are attempting to strengthen the capacity and synergy of the stakeholders. However, some of them have been less active since COVID-19.

Awareness raising: International organizations actively collaborate with governments, NGOs and MSMEs to develop and implement large-scale awareness campaigns and capacity-building programs. However, the facilitation of networking opportunities among stakeholders from different provinces to share experiences and best practices in specifically promoting CE in the tourism sector is limited. There are no direct activities on community events, workshops, and educational campaigns on CE in the tourism sector. Also, it shows that the collaboration of different stakeholders on the creation of informative materials, such as brochures, websites, and videos, that highlight CE principles and showcase successful case studies in the tourism sector is insufficient. The existing associations and NGOs in tourism (e.g., Mongolian Tourism Association, Ulaanbaatar Tourism Association, Mongolian Tourism Development Center, Sustainable Tourism Development Center), hospitality (e.g., Mongolian Tourism Council of Professional Associations, Mongolian Restaurant Association, Mongolian Hotels Association), food (e.g., Mongolian Food Industry Association) and packaging (e.g., Mongolian Union of Packaging Manufacturers) sector can play a significant role in raising awareness of CE within the relevant sectors. Local governments are also leveraged for disseminating the concept and principles of CE in aimags and soums, especially those that have a higher number of tourist destinations such as Khuvsgul, Arkhangai, Umnugobi, Bayan-Ulgii and Bulgan.

Information: Information enablers by providing comprehensive guidance and resources on CE practices in the tourism sector among the stakeholders are relatively low. There is no dedicated websites, portals, or information centers that offer access to relevant CE information, case studies (best practices), guidelines, toolkit, and policy frameworks. Associations, NGOs and consultancies can develop guides and provide practical information on adopting CE practices, on the other hand, governments and associations have the opportunity to disclose information and organize information dissemination initiatives in cooperation with international organizations.

Regarding the current enablers related to information, a database of news and information necessary for MSMEs can be found at the Small and Medium Enterprises Agency. Certain consultancies and NGOs are engaged in information disclosure of environmental issues and performances, including the Mongolian Environment and Safety Center and Center for Environment Information Training NGOs. Waste management and recycling data and research are available at the Eco Soum NGO website. Additionally, there are international initiatives on sharing green technology information including Green Technology

Selector – an online trading platform that helps vendors sell more high-end green technology products to local clients.

Overall, the analysis of enablers in the CE reveals several gaps and areas for improvement across different stakeholders in the tourism sector. Government organizations need to enhance the integration of CE principles into national policies and strategies. Capacity building is necessary to ensure government officials have the knowledge and skills to design and implement effective CE policies. Additionally, inclusive, and participatory approaches are crucial to involve diverse stakeholders in the policy development process.

Collaboration and knowledge sharing between large industries and MSMEs can foster innovation in the development of CE technologies. Access to funding and coordination among government organizations and agencies need improvement to support CE-related research and development initiatives.

Collaboration and direct cooperation between technology suppliers and MSMEs should be promoted to enable the adoption of sustainable packaging technologies. International organizations and financial institutions can facilitate partnerships and provide support in this area. Financial institutions can increase the scale and scope of green finance programs to better support MSMEs in their CE efforts. Research institutions, academia, NGOs, and consultancies play important roles in knowledge exchange by producing studies, conducting training, and sharing best practices. Efforts should be made to enhance knowledge sharing in academia and facilitate networking opportunities among stakeholders to promote CE in the tourism sector. Collaborations and partnerships among stakeholders are limited, but there are opportunities to strengthen these relationships. Establishing working groups or committees can facilitate collective action and develop strategies to address CE challenges.

More initiatives are needed to raise awareness about CE in the tourism sector through community events, workshops, and educational campaigns. Collaboration between stakeholders and the creation of informative materials can showcase successful case studies and promote the adoption of CE practices. Stakeholders should focus on providing comprehensive guidance and resources on CE practices in the tourism sector. The development of dedicated websites, portals, and information centers can offer access to relevant information, case studies, guidelines, toolkits, and policy frameworks.

By addressing these gaps and collaborating effectively, stakeholders can play a more impactful role in enabling the transition to a CE in the tourism sector, leading to more sustainable and resilient growth.

CONCLUSIONS

The goal of this assessment was to analyze the elements that hinder or facilitate the transition from a linear to a CE in the food and beverage, and tourism sector in Mongolia by identifying current and desired interactions among the ecosystem's stakeholders.

The assessment comprises of three main components: Policy analysis, Readiness assessment and Stakeholder assessment. The primary goal of the policy analysis is to determine the alignment of the government's policies and development goals in the tourism sector, especially the food and packaging sectors in connection with CE approaches and to provide general information to decision-makers by identifying CE enabling policy instruments. The Readiness assessment presents findings from an evaluation of producers and service providers in the food, beverage, and accommodation value chains of the tourism industry for adopting CE strategies and approaches. Finally, the Stakeholder assessment provides a broad overview of stakeholder perspectives on the role of CE in fostering collaboration within the tourism sector.

For the Readiness assessment, the target groups were categorized into three primary segments, in which the first and second group belong to supply side, and the third group considers as the consumption side:

1. The producer group, consisting of food, beverage, and packaging producers, as well as food production establishments such as canteens and restaurants that procure materials for meal and beverage preparation. This group included 222 MSMEs.
2. The intermediary consumers or service provider group, comprising 178 MSMEs from accommodation providers (hotels, tourist camps, etc.), food and beverage service providers (canteens, restaurants, nightclubs, street food vendors, coffee shops, etc.), and food shops.
3. The end-consumer group, which consists of travelers. A total of 100 travelers participated in the survey and interviews.

The tourism industry in Mongolia holds significant importance, contributing 6.7% to the country's GDP and accounting for 7.2% of total employment in 2019. However, the existing infrastructure and tourism service providers are not adequately equipped to handle the influx of travelers during peak seasons. It is estimated that domestic tourists generate approximately 2,500 tons of waste annually, while foreign tourists contribute around 4,000 tons. Additionally, a substantial portion of domestic travelers rely on private cars, opt for tent-based accommodations, and camp in non-designated areas, leading to environmental strain, particularly in terms of waste generation, which poses challenges in waste collection and treatment.

Overall

In general, MSMEs in targeting sectors lack experience in implementing environmentally friendly practices and measuring CE progress. However, many MSME in these sectors prioritize economically and environmentally responsible raw material choices. While internal maintenance and cleaning practices are well-established, technological capabilities for environmental impact reduction, product (re)design, and reuse are limited. MSMEs are facing certain challenges in introducing CE possibilities to meet needs and interests of tourists, such as lack of economic and financial resources and access to support, limited information about recent advancements in eco-friendly technologies and global, regional and national CE trends, absence of feasibility studies, designs, strategies, and implementation solutions, and inadequate information regarding CE and its corresponding strategies and solutions.

Policy Analysis

The Policy Analysis revealed that it is relatively well reflected in the action plan for the implementation of goals and activities supporting green development and energy efficiency. It includes a separate chapter on promoting green development, and focuses on cross-sectoral issues such as climate change, water, waste, green procurement, and green technology. In addition, the goals and activities of the Vision 2050

development policy document aligned with the short- and medium-term feasibility studies are well reflected in the 2020-2024 action program of the Government of Mongolia.

Regarding the policy objectives currently in place within the target sectors and the policy instruments supporting CE in their regulatory environment, this policy analysis has identified a total of 7 policy instrument. In detail, 2 in the cross-sector, 2 in the tourism sector, 2 in the food sector, 1 in the packaging sector, and 2 in the waste sector.

Although CE was not explicitly included in recent legislative frameworks, certain aspects of CE received some attention. CE enabling policy instruments, such as rewarding individuals, enterprises, and organizations for introducing environmentally friendly advanced methods and technologies with Eco-label or Green Certificates, tax exemption, Green Loan Fund, certification label for products produced with appropriate agricultural practices, or list of environmentally friendly techniques and equipment for efficient use of natural resources, reduction of environmental pollution and waste were established and approved by the Government.

However, policies to support in providing incentives to encourage the adoption of CE practices in a progressive manner (green production, waste management, etc.) are still missing. Specific objectives and operational strategies or actions related to sustainable and green procurement, such as measuring and reporting indicators for achieving 20% green procurement or establishing green criteria for selected products, or development of green economy for food sector, remain absent. Integration of CE into SME policies and the inclusion of CE support provisions in MSME policies and requirements are also lacking.

Moreover, in the food and packaging industry, there is no standardized definition or clear direction on aligning activities, best practices, and certifications with CE principles. This lack of coordination with other incentive mechanisms weakens the effectiveness of policy instruments supporting economic development and has adverse consequences. Consequently, sectors like food service in the hospitality industry and grocery stores have limited experience in making environmentally conscious purchases (such as GAP-labeled and organic products) and adopting practices that minimize packaging waste.

Economic policy instruments have not been formulated to promote resource conservation and the prevention and reduction of pollution and waste. There was a notable deficiency in the fact that waste targets and planned activities primarily concentrated on waste reduction measures or actions taken after materials had already become waste. In order to achieve a comprehensive implementation of CE, it appears that infrastructure-related aspects, aimed at conserving resources before they become waste, supporting the longevity of products, promoting new eco-friendly product types, and facilitating the economic reuse of waste, have been overlooked. Additionally, sector-specific policy tools for addressing waste, packaging, and the tourism industry are currently absent..

Policies related to information dissemination and training for promoting resource conservation, pollution prevention, waste reduction, and the regulation of economic incentives and discounts to the public have not been clearly established. As a result, efforts focused on providing information, raising awareness, and fostering a culture of sustainability at the enterprise level should be conducted as part of dedicated corporate initiatives. These efforts should also be coordinated with other policy instruments and comprehensively approached through collaboration with professional associations and international organizations.

Readiness assessment:

The Readiness assessment, for the supply side, with a total of 11 evaluated elements, indicates that among MSMEs in Ulaanbaatar, those with a better understanding of CE, service providers, and those with official

business registrations generally demonstrate higher levels of readiness for CE adoption when compared to other enterprises. The assessment underscores the fact that MSMEs often lack a comprehensive understanding and knowledge of CE and sustainable development, with a particular emphasis on waste management. Moreover, MSMEs tend to prioritize waste management over other groups of CE strateges, such as Extend the Life-time of products, shift to service-based business models, Shift to circular supplies, and Facilitate demands for CE products and services.

The assessment suggests that the majority of MSMEs in the supply side (Producer and intermediary consumers/service provider group) are not currently prepared to embrace CE strategies and implement CE solutions. Based on the data collected through surveys and interviews, it is evident that many of these businesses continue to react to environmental concerns and view investments in CE projects as financial burdens rather than recognizing the potential for profitability through CE practices. The establishment of clear connections between CE practices and their positive impact on profits has not yet been achieved.

From the view of consumption side, participated travellers have a certain level of knowledge toward CE and express their interest and participation in sustainable tourism, such as reducing negative environmental footprint, eco- and environmentally-friendly operations, and the taste and quality of food, waste sorting and recycling, among others. More importantly, the survey result reveals that tourists are willing to pay more for environmentally friendly products and services.

The Readiness assessment also has accessed the challenges and opportunities for adopting circular economy and taking-up circular economy solutions for each group through their involvement in whole lifecycle stages, by each group of CE strategies in corresponding to relevant lifecycle stages Rs of the 9Rs principles.

Overall, MSMEs in both the Producer and intermediary consumers/service provider group tend to prioritize their core business activities, such as purchasing, manufacturing, sales, and marketing, without venturing beyond their production domains, particularly in areas like product design and post-consumption stages. When MSMEs do not encompass the entire lifecycle of their business operations, it becomes challenging to assess the economic, environmental, and societal impacts stemming from each stage of their products (and related services), with a particular gap in understanding the design and post-consumption stage. Consequently, potential CE opportunities and solutions may go unnoticed and lack systematic integration.

Based on the findings from the survey and interviews conducted with the Producer and intermediary consumers/service provider group, it is evident that MSMEs possess a solid understanding of resource efficiency within the CE strategies of Increase resource efficiency. They demonstrate awareness of efficient resource and energy utilization, exhibit a commitment to zero waste policies, particularly with regard to plastic waste, prioritize the extension of equipment lifespans, and are knowledgeable about resource efficiency and cleaner production practices. Additionally, they actively employ energy-efficient equipment and more economical vehicles to reduce fuel and electricity consumption.

Within the CE Strategies on Extend the life-time of products, both groups of MSMEs have implemented numerous solutions in this regard, including equipment repairs and the adoption of zero-waste policies. Nevertheless, they still face challenges when it comes to recycling and reusing packaging materials.

An essential component of CE involves the emergence of new business models. CE alters conventional linear business models, with particular emphasis on the concept of servitization (CE Strategies on Shift to service-based models). This new business model is new to MSMEs as it seems confusing survey respondants as it might be understood as they undertake service offering activities. Other CE business models include sharing and renting. Among these options, sharing equipment remains the most widely adopted business model among MSMEs in those sectors.

In the context of the CE Strategy focused on recovery after disposal, which aims to prevent resources from exiting the loop, over 50% of MSMEs have established waste management procedures. However, the majority of waste is currently disposed of in landfills, which is not considered a viable Circular Economy solution.

Another CE strategy, known as the Shift to circular supplies, focuses on transforming the supply chain for products or services, encompassing not only raw materials and resources but also energy sources. MSMEs display a reasonable level of awareness regarding their supply sources, showing a willingness to adopt more sustainable input materials and to transition toward the use of eco-friendly resources and energy. They tend to favor environmentally friendly, green, or waste-free materials, including organic food. However, the availability of sustainable alternatives, such as renewable energy sources, can sometimes impede MSMEs from fully embracing circular supplies.

The CE Strategy focused on Facilitate demand for circular products and services necessitates that suppliers educate their customers and engage in communication regarding the sustainability aspects of their offerings. It appears that requesting suppliers to provide information about the sustainability attributes of their products and maintaining regular communication with their partners and customers regarding this information are common practices.

In relation to different lifecycle stages, tt is notable that MSME participation in the design stage is relatively limited, and this participation rate is even lower for the Provider group compared to the Intermediary consumers/service provider group. The latter group engages in aspects such as menu and portion design, as well as the adoption of energy-efficient equipment and new technologies to conserve energy and water when constructing facilities. However, the product development and innovation process at MSMEs turn out to be provisional, unplanned and unstructured.

Stakeholder assessment:

The Stakholder assessment has been conducted with an MSME-centric view and identified 10 stakeholder groups categorized into technical intermediaries, financial institutions, development organizations, and Industrial Intermediaries. Their respective roles and their degree of contribution to creating an enabling CE environment were evaluated.

It is evaluated that Government organizations play a pivotal role in shaping policy instruments and legislative frameworks that facilitate the transition to a CE. These stakeholders are responsible for formulating policies and establishing legislative structures that promote CE principles, even if the term 'CE' is not explicitly used. They are also tasked with enacting laws and regulations governing waste management, resource utilization, recycling, and related areas. However, Government organizations encounter difficulties in engaging and involving diverse stakeholders, including businesses, industry associations, NGOs, and research institutions. To ensure that a wide range of perspectives and expertise is considered in decision-making processes, inclusive and participatory approaches are essential. Although stakeholder engagement is crucial for developing inclusive and effective policy instruments and legislative frameworks, certain stakeholders, such as MSMEs, industry associations, and NGOs, may face limited opportunities for meaningful participation in the policy development process. Furthermore, Government organizations encounter challenges in securing adequate funding specifically for CE research and development initiatives. Additionally, there is a lack of coordination in R&D efforts across different government departments and agencies

Furthermore, the assessment revealed a lack of direct collaboration between technology suppliers and MSMEs. Notably, international organizations and financial institutions are actively promoting such collaboration through their projects and programs in this direction

Research institutions and academia play crucial roles in generating scientific studies, case studies, conducting training, and cultivating experts that enrich the knowledge foundation of CE. Moreover, these entities can engage in partnerships with MSMEs, government agencies, and other stakeholders to share knowledge, offer guidance, and bolster the implementation of CE initiatives. Nevertheless, CE-related activities and experiences within academia are currently quite limited or nearly nonexistent.

International organizations actively engage in partnerships with governments, NGOs, and MSMEs to create and execute extensive awareness campaigns and capacity-building initiatives. Nevertheless, the promotion of networking opportunities among stakeholders from various provinces, specifically for sharing experiences and best practices in advancing Circular Economy (CE) within the tourism sector, is currently limited. There are no direct initiatives focused on community events, workshops, or educational campaigns related to CE in the tourism sector. Furthermore, dedicated websites, portals, or information centers that provide access to pertinent CE information, case studies (best practices), guidelines, toolkits, and policy frameworks are notably absent.

Based on the assessment results, it can be concluded that there is a great amount of interest among various stakeholders in Mongolia's tourism sector, particularly MSMEs, to adopt CE practices and improve resource efficiency. The stakeholder mapping and analysis have identified key stakeholders from different categories, such as government organizations, industry associations, financial institutions, international development organizations, technical suppliers, consultancies and certification bodies, academia, and NGOs, who play important roles in promoting and implementing CE practices in the tourism industry.

The level of interest varies among stakeholders, with International organizations showing the highest interest in promoting CE practices and sustainability. Government organizations showed different results on interest areas, particularly MET and the city tourism department demonstrated a high level of interest in adopting CE practices. Industry organizations, such as associations and large industries recognize the value of CE for improving their image, competitiveness and environmental impact.

Stakeholders' expertise in CE also varies, with international FIs and international development organizations having the highest expertise in implementing CE-oriented activities. Consultancies, certification bodies, and environmental organizations also contribute significantly to promoting sustainable practices and raising awareness.

Regarding influence and impact, government organizations, both at the national and local levels. Have the capacity to influence MSMEs by creating policies and programs, and support mechanisms to transition to CE practices. FIs, both national and international, play a major role in providing access to financial resources and capital for MSMEs to invest in CE practices. Collaboration with large industries and supply chain partners can enhance MSMEs' capacity to adopt CE practices.

The enablers analysis has revealed various strengths and areas of improvement among different stakeholder groups. The Government organizations play a crucial role in enabling policy instruments and legislative frameworks that support the transition to a CE. However, there is a need for greater integration of CE principles into national policies and strategies. Capacity-building programs (including government officials) and inclusive approaches to stakeholder engagement are necessary to enhance their effectiveness.

On R&D, there are challenges in accessing sufficient funding for CE research initiatives and coordinating efforts among different organizations. Knowledge sharing between large industries and MSMEs can foster collaboration and partnership opportunities. Technology suppliers and developers provide technologies that enable CE practices, but there is limited direct cooperation between them and MSMEs.

FIs offer financial services that support CE practices, but the availability and size of green loans and programs are still limited compared to the number of MSMEs. Stakeholders' participation in financial services and enabling markets for CE varies but coordination and other engagement activities can be further improved. Consultancies, associations and certain NGOs play a major role in knowledge exchange and advocacy for CE principles. However, academia's engagement in CE-related activities and experience is currently inadequate.

Partnerships and collaborations among stakeholders, particularly international organizations and international FIs, are actively supported. There are opportunities to enhance and broaden these relationships by establishing working groups or committees that bring together various stakeholders. Awareness-raising efforts led by international organizations, governments, NGOs, and MSMEs are important for promoting the adoption of CE practices.

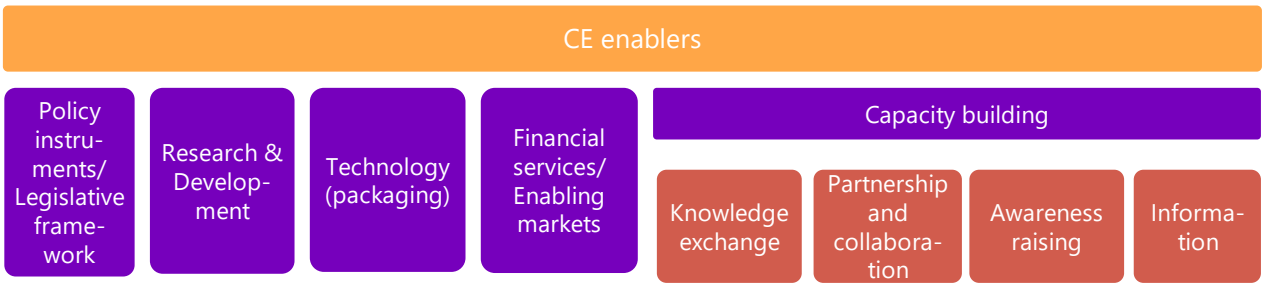
RECOMMENDATIONS

Developing targets, defining goals and developing policy measures to achieve them can provide the foundation for achieving the uptake of CE in Mongolia's tourism industry and related sectors (food, beverage and packaging). These strategic steps lay the groundwork for realizing a more sustainable and circular tourism sector and could showcase the desired political direction for the development of Mongolia's circular tourism ecosystem.

Additionally, it is advisable to draw inspiration from various CE examples in other countries, while customizing these solutions to align with national and local contexts. CE initiatives necessitate collaboration among pertinent stakeholders, and it is crucial to emphasize the importance of innovation throughout this process.

The recommendations present in this chapter stem from a comprehensive analysis of CE enablers, illustrated in **Error! Reference source not found.**. These recommendations are crafted to cater to both the broader, all-encompassing national strategy and the sector-specific needs (within the tourism, food, packaging and waste management sectors). Furthermore, the recommendations from the stakeholder's perspectives are included into the recommendations summary table below.

Figure 73. CE enablers



Error! Reference source not found. presents a strategic roadmap encompassing policy instruments and legislative initiatives. It outlines key actions, such as defining a robust national strategy tailored to the tourism sector, setting ambitious national targets for affected industries, and establishing sustainable tourism standards. Furthermore, the recommendations extend to critical areas, including energy efficiency criteria, waste management, packaging regulations, and stakeholder engagement. These recommendations seek to align Mongolia's policies policies with green goals, and promoting inclusive participation from all stakeholders.

Table 57. Recommendations for CE uptake in the Mongolia's tourism industry

Sector/Category	Policy Instruments/Legislative framework
Overall	Define a national strategy towards a circular economy in the tourism industry. Based on the strategy, seting targets on a national level for affected sectors. Develop national strategies for relevant sectors based on the priority criteria, such as urgent needs, negative impacts to environment, human health, etc.
Tourism	Develop comprehensive policies and regulations at the national level to support the adoption of CE practices in the tourism sector. Establish sustainable tourism standards.

Food and beverage	Set the criteria for meeting relevant goals related to energy efficiency in addition to the criterias for evaluating the implementation of energy efficiency related projects. Determine the infrastructural means for monitoring and evaluation of the implementation of the provisions of the Law on Appropriate Practices in the Food and Agriculture Sector through a combination of remote and on-site monitoring. Coordinate with the green development goals of Mongolia's development policy goals by including the requirements related to the standardization and measurement of the 7R practices of the CE and the standardization of good agricultural and industrial practices in the regulations for selecting and rewarding the 100 best producers in the food and agriculture sector.
Packaging	Establish Extended Producer Responsibility (EPR) for packaging. Consider banning all types of single-use and non-durable packaging, while providing alternative products. Strengthen policies for preventing imports of single-use plastic bags. Define the CE concepts for the packaging sector and develop labeling and manufacturing standards according to the definitions.
Waste management	Implement the "polluter pays" principle and eco-payments along with needed documentations and systems to ensure successful implementation of thereof.
Stakeholders	Harmonization and coordination among different policy frameworks in order to remove overlapping and conflicting regulations which make it challenging for stakeholders to navigate in the regulatory landscape. Establish an inclusive and participatory environment for increasing MSMEs, industry associations, and NGOs participation in the policy development process.
Sector/Category	**Research and Development**
Overall	Funding opportunities for CE research initiatives should be expanded, and coordination among different organizations should be improved.
Tourism	Develop new travel tours with involvement of local communities.
Food and beverage	Develop more products using local ingredients.
Packaging	Support research activities such as on new, biodegradable or natural- or plant-based packaging materials, packaging manufactures needs, equipment and information on waste generation.
Waste management	Support technological innovation for increased collection, sorting and recycling.
Stakeholders	Increase knowledge sharing to foster collaboration and partnership opportunities between large industries and MSMEs for increased collaboration for the development of new technologies, products, and services that address CE challenges. Engage academia in research and knowledge-sharing activities to support the implementation of CE practices. Academia should enhance its engagement in CE-related activities and experiences through research, training and partnerships with MSMEs. Government organizations can

	organize knowledge exchange platforms and provide support for academia's involvement in CE initiatives.
Sector/Category	**Technology**
Overall	Using emerging digital technologies, such as big data, artificial intelligence (AI), blockchain and the Internet of things (IoT), amongst others (in combination with new business models) to facilitate CE transformation. Applying innovative technologies for manufacturing to increase efficiency while reducing the negative impacts to envroment and human health at the same time.
Tourism	Use more energy efficient equipment Apply better technologies from the building phase
Food and beverage	Introduce Best Available Techniques in food and beverage manufacturing.
Packaging	Reduce and standardize packaging types to facilitate the promotion the reuse of packaging, reclaiming of packaging and other similar measures.
Waste management	Ensure sustainability of the excisting waste management and recycling fascilities. Establish new waste recycling facilities to support the increased recycling. Apply innovative technologies for resource recovery.
Stakeholders	Increase cooperation between technology suppliers and MSMEs.
Sector/Category	**Financial services/Enabling markets**
Overall	Establish clear guidance, incentives and support mechanisms, including financial incentives, grants, and subsidies in cooperation with interest and influence high stakeholders to facilitate MSMEs' transition to CE practices. Encourage financial institutions, both national and international, to develop specialized funding options for MSMEs to invest in CE technologies and improvements. Promote the availability of green loans and financial products tailored to the specific needs of MSMEs.
Tourism	Add circularity related clause when issuing loans (i.e. implementating key environmental and CE practices during the loan period.).
Food and beverage	Set a certain quota on the discounts and incentives provided in support of the industry, and reward enterprises that implement the principles of economic development in a graduated discount. Support domestically produced products and to establish competitive pricing parity with imported products, which can be achieved with different tax incentives or tax relieves on certain products and/or by providing governmental subsidies for the products.
Packaging	Support domestically produced products and to establish competitive pricing parity with imported products.
Waste management	Consider providing incentives such as exemptions from VAT and customs for ongoing expenses, or incentives and budget allocation from the government based on the amount of production to increase local waste recycling industry.

Sector/Category	Capacity building (Knowledge exchange, Partnership and collaboration, Awareness raising and Information)
Overall	Increase awareness, expertise and communication efforts among stakeholders, including MSMEs, about the benefits of CE practices and the importance of sustainability in the tourism sector. Develop communication campaigns, workshops and information dissemination channels to promote the adoption of CE practices and foster a culture of sustainability. Present the implementation results and impact assessment to the public
Stakeholders	Foster collaboration and partnerships among stakeholders to promote knowledge sharing, capacity building, and the implementation of CE practices. Encourage dialogue and cooperation between government organizations, associations, financial institutions, academia and NGOs to create a unified approach towards sustainable tourism. Foster cooperation and direct partnerships between technology suppliers and MSMEs to facilitate the adoption of sustainable packaging technologies. Enhance the expertise and knowledge of stakeholders by providing training programs, courses, and curriculum and development on CE practices, specially tailored to MSMEs in the tourism industry. Increase awareness, expertise and communication efforts among stakeholders, including MSMEs, about the benefits of CE practices and the importance of sustainability in the tourism sector. Develop communication campaigns, workshops and information dissemination channels to promote the adoption of CE practices and foster a culture of sustainability. Encouraging partnerships and knowledge sharing between international organizations, FIs, and technology suppliers can support this collaboration.

Foster collaboration and partnerships among stakeholders to promote knowledge sharing, capacity building, and the implementation of CE practices. Encourage dialogue and cooperation between government organizations, associations, financial institutions, academia and NGOs to create a unified approach towards sustainable tourism.

Develop comprehensive policies and regulations at the national level to support the adoption of CE practices in the tourism sector. Establish clear guidance, incentives and support mechanisms, including financial incentives, grants, and subsidies in cooperation with interest and influence high stakeholders to facilitate MSMEs' transition to CE practices.

Encourage financial institutions, both national and international, to develop specialized funding options for MSMEs to invest in CE technologies and improvements. Promote the availability of green loans and financial products tailored to the specific needs of MSMEs.

Enhance the expertise and knowledge of stakeholders by providing training programs, courses, and curriculum and development on CE practices, specially tailored to MSMEs in the tourism industry. Engage academia in research and knowledge-sharing activities to support the implementation of CE practices.

Increase awareness, expertise and communication efforts among stakeholders, including MSMEs, about the benefits of CE practices and the importance of sustainability in the tourism sector. Develop communication campaigns, workshops and information dissemination channels to promote the adoption of CE practices and foster a culture of sustainability.

Government organizations should prioritize integrating CE principles into national policies and strategies, while also building the capacity and expertise of government officials in understanding and implementing CE initiatives. Inclusive and participatory approaches to stakeholder engagement should be adopted.

Efforts should be made by all stakeholders to enhance research and development collaborations. Funding opportunities for CE research initiatives should be expanded, and coordination among different organizations should be improved.

Facilitating direct cooperation between technology suppliers and MSMEs can accelerate the adoption of CE technologies. Encouraging partnerships and knowledge sharing between international organizations, FIs, and technology suppliers can support this collaboration.

FIs should increase the availability and size of green loans tailored for CE initiatives. These loans can be distributed to the MSMEs based on the information from certification bodies and consultancy organizations.

Academia should enhance its engagement in CE-related activities and experiences through research, training and partnerships with MSMEs. Government organizations can organize knowledge exchange platforms and provide support for academia's involvement in CE initiatives.

All the above-mentioned stakeholders who have a high interest in CE practices should actively seek partnerships and collaborations to collectively address CE challenges. Government organizations can play a key role in establishing working groups or committees that bring together from different sectors to develop strategies and foster collaboration.

4. Communication and stakeholder engagement strategy

This part of the report is a draft of the stakeholders' communications strategy for the Ministry of Environment and Tourism based on the analysis of stakeholders' roles and categories in the CE. This will help engage stakeholders effectively, build relationships, raise awareness, mobilize support, and address concerns.

Purpose and Objectives:

- Raise awareness about CE principles in the tourism sector—to substantially improve the key stakeholders' awareness, knowledge and understanding of the CE in the tourism sector.
- Provide guidance and support to tourism MSMEs in adopting CE practices—to significantly improve the dissemination of relevant and accurate CE information for MSMEs and across different sectors.
- Engage stakeholders to promote CE initiatives—to identify stakeholders' concerns raised, analyze and organize the information that needs to be communicated according to stakeholders' needs to ensure effective engagement and partnerships.
- Highlight the benefits of CE practices for environmental sustainability and economic growth in the tourism sector—to inform development partners on the challenges and opportunities of the sector by communicating the CE activities and results through the medium available that will engage and influence them.

Channels and tactics	Key actions	Target stakeholders	M&E (success measure)
1. Raise awareness about CE principles in the tourism sector—to substantially improve the key stakeholders' awareness, knowledge and understanding of the CE in the tourism sector.			
Online platforms	Utilize websites, blogs, and social media platforms to disseminate information, share case studies, and provide updates on CE practices in the tourism sector.	Tourism sector MSMEs—hotels, resorts, restaurants, and others	Analyze the number of downloads, shares, and comments on case studies, blog posts, and other content pieces to gauge stakeholder engagement.
Workshop and training session	Organize interactive workshops and training sessions to educate stakeholders about CE principles, showcase best practices, and provide practical guidance on implementing circular practices.	Government officials and policymakers	Monitor the number of participants attending workshops and webinars, as well as their feedback and engagement during these sessions.
Webinar and online conference	Conduct webinars and online conferences featuring experts and practitioners to share insights, present research findings, and facilitate discussions on CE in the tourism sector.	Associations, NGOs, consultancies, MSMEs and academia	Monitor the number of participants attending workshops and webinars, as well as their feedback and engagement during these sessions.
Media Outreach	Collaborate with media outlets to publish articles, interviews, and opinion pieces to raise public awareness and engage a broader audience.	MSMEs, tourists and Travelers	Monitor media outlets for coverage related to CE principles in the tourism sector, including articles, interviews, and mentions, to assess the level of awareness generated by the wider public.
Partnerships	Collaborate with associations, NGOs, and consultancies to leverage their networks and	International organizations, MSMEs, NGOs,	Keep track of the number of partnerships formed, joint initiatives launched, and collaborative projects

	platforms for disseminating information and organizing events.	Associations, and consultancies	undertaken with stakeholders in the tourism sector.
2. Provide guidance and support to tourism MSMEs in adopting CE practices—to significantly improve the dissemination of relevant and accurate CE information for MSMEs and across different sectors			
Webinars and Workshops	Conduct virtual or in-person training sessions to educate MSMEs on CE practices, implementation strategies, and best practices. Create easy-to-understand guidance materials, toolkits, and checklists specifically designed for tourism MSMEs to support their adoption of CE practices	MSMEs	Track the number of MSMEs accessing the guidance materials, participating in webinars and workshops, and joining the online community.
Online Forums and Discussion Boards	Create a platform for MSMEs to engage in discussions, share experiences, and seek guidance from experts and peers.	Associations, NGOs, consultancies and MSMEs	Number of discussion topics and number of active conversation/ participants
Email Newsletters	Establish a regular newsletter to share financial updates, success stories, and relevant CE guidance with subscribed MSMEs and stakeholders.	MSMEs	Increased subscription number
Collaboration with Industry Associations and NGOs	Provide personalized guidance and support to MSMEs through consultations with experts in sustainable tourism and CE.	Associations, NGOs, consultancies and MSMEs	Track the number of consultations conducted with MSMEs. Satisfaction survey results
3. Engage stakeholders to promote CE initiatives—to identify stakeholders' concerns raised, analyze and organize the information that needs to be communicated according to stakeholders' needs to ensure effective engagement and partnerships.			
Stakeholder Meetings	Organize monthly stakeholder meetings, workshops, or roundtable discussions to facilitate direct engagement and exchange of ideas	All stakeholders especially development organizations	Number of monthly organized events
Partnerships with professional organizations	Identify opportunities for collaboration and partnership with stakeholders, such as joint projects, knowledge sharing, or resource mobilization.	All stakeholders who have high interest	Keep track of the number of partnerships formed, joint initiatives launched, and collaborative projects undertaken with stakeholders in the tourism sector.
4. Highlight the benefits of CE practices for environmental sustainability and economic growth in the tourism sector—to inform development partners on the challenges and opportunities of the sector by communicating the CE activities and results through the medium available that will engage and influence them.			
Reports and Publications	Prepare comprehensive reports and publications that outline the benefits of CE practices in the tourism sector, supported by case studies, research findings, and success stories.	MSMEs	Number of reports and number of publications

Collaborative Projects and Initiatives	Collaborate with development partners on joint projects and initiatives that demonstrate the positive outcomes of CE practices, leveraging their networks and expertise	Associations, NGOs, consultancies and MSMEs	Monitor the number of projects and initiatives, as well as their feedback and engagement during these activities.
Online Platforms and social media	Utilize websites, blogs, social media platforms, and online forums to disseminate information, share success stories, and engage with MSMEs.	Associations, NGOs, consultancies and MSMEs	Analyze the number of downloads, shares, and comments on case studies, blog posts, and other content pieces to gauge stakeholder engagement.

By implementing this communication strategy, stakeholders can effectively engage and inspire tourism MSMEs to adopt CE practices, foster collaboration and contribute to a more sustainable and circular tourism sector.