



გარემოს დაცვისა და სოფლის
მეურნეობის სამინისტრო



Governance Reform Fund (GRF) Project
Supporting the Government of Georgia in Enhancing Governance & Policies
for a Transition to a Circular Economy

Circularity Roadmap for Georgia
2024

Dr Dariusz Prasek

Dr Medgar Tchelidze

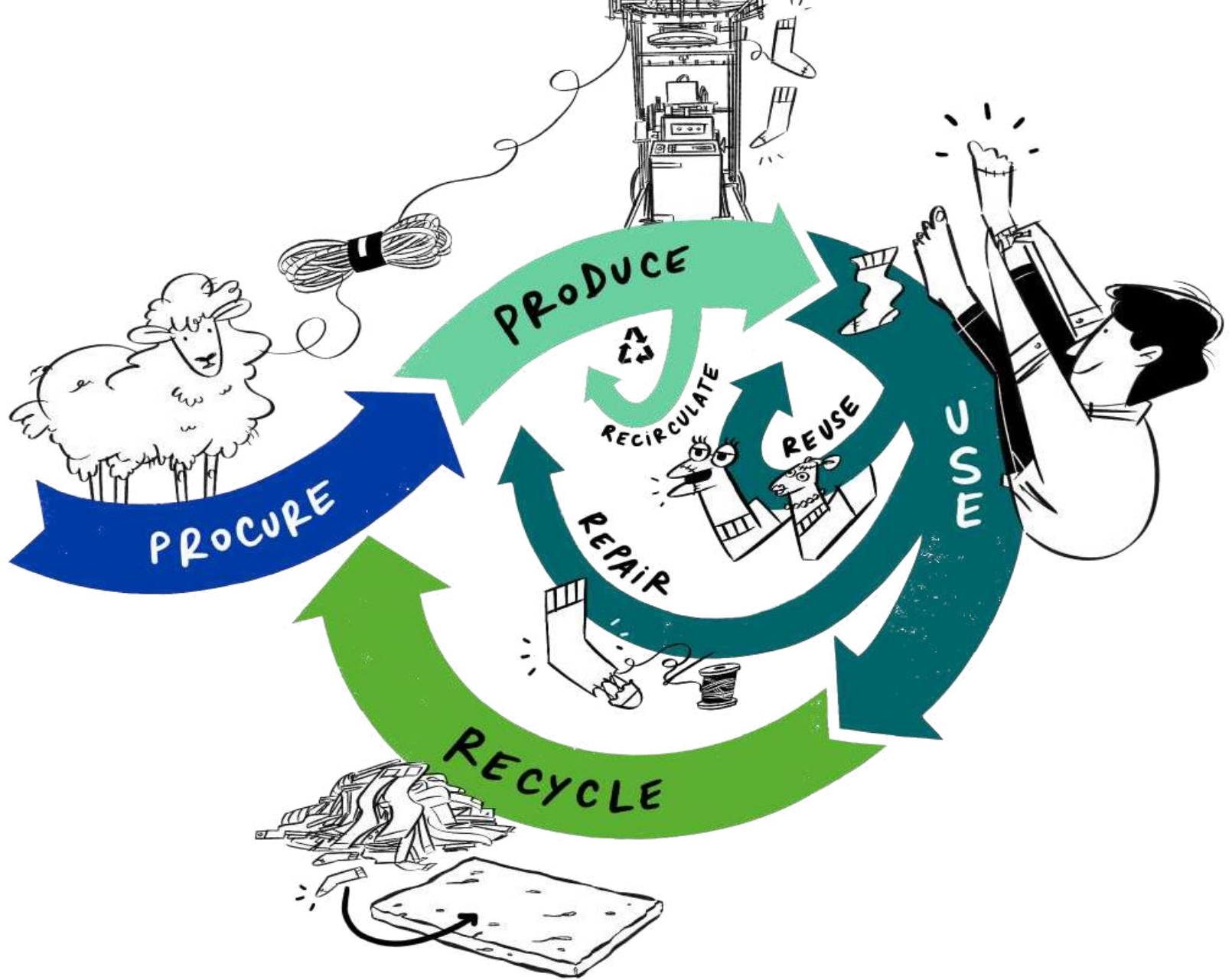
Georgian Society of Nature Explorers “Orchis”

10th September 2024

Dr Dariusz Prasek



Georgia 2050



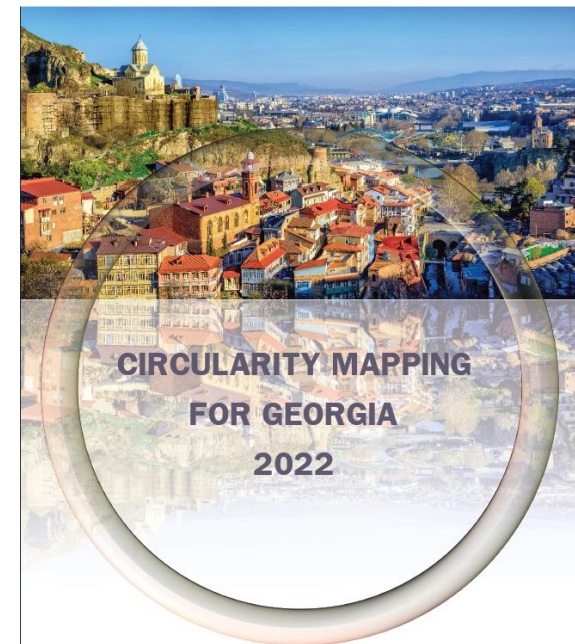
CIRCULAR ECONOMY

What Has Already Been Accomplished In Georgia

- Georgia is currently a clear regional leader in the accelerated path towards circularity. With the general objective of replacing the ‘end-of-life’ concept with an economic system that closes material loops, Georgia embarked in **2018** on an accelerated path to transition to the circular economy with enacting the concept of the Extended Producers Responsibility (EPR) in the national Waste Management Code.
- With the concerted efforts of the GoG, CSOs, academia and international partners, Georgia has initiated the development of the National Circular Economy Strategy and Roadmap based on a comprehensive multidimensional approach that covers production, consumption, waste management, secondary raw materials, innovation, investments as well as ongoing initiatives in different sectors implemented by different players that are at different stages of the value chain or different stages of development.
- We have also law on energy efficiency and renewable energy, law on food donation, also laws and regulations that are under the development
- National Bank of Georgia is promoting sustainable finance and ESG
- The GoG strongly believes that CE strategies benefit from inclusive partnerships, and different players need to work together to bring about a paradigm shift with the general objective of replacing the ‘end-of-life’ concept with an economic system that closes material loops. The GoG is working with various donors to progress the transition to the Circular Economy and finance green economy initiatives.

CE Strategy, Mapping and Roadmap

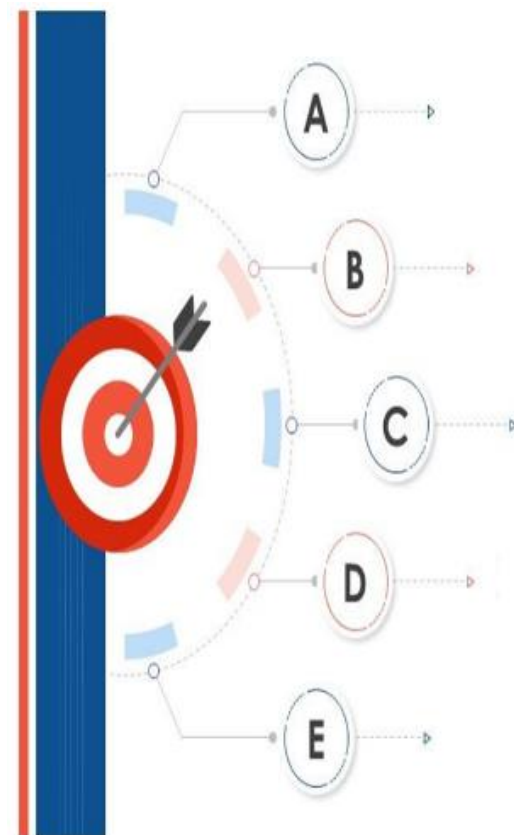
- The transition from the end-of-life concept to a circular economy means a paradigm shift, and requires a huge transformation in the ways of producing and also consuming. For that reason, the Government of Georgia (GoG) has decided to lead the development of a CE Transition Strategy, inviting a cross-sector group of organisations to help it define concrete goals and objectives to make Georgia a circular country.
- As a first step for developing strategy a preliminary assessment of the Georgia's economy under the context of circularity have been conducted in 2022. The Circularity Mapping has been prepared by CSO Georgian Society of Nature Explorers "Orchis" (GSNE "Orchis") in close cooperation with the GoG and with the financial support of the Government of Sweden through the Swedish International Development Cooperation Agency (SIDA).
- The key stakeholders in this process were the representatives of the GoG represented by the Inter-Ministerial Coordination Board consisting of 36 experts from various ministries and governmental agencies under the leadership of the Deputy Minister at the Ministry of Environmental Protection and Agriculture of Georgia Acad. Solomon Pavliashvili.



CE Strategy, Mapping and Roadmap

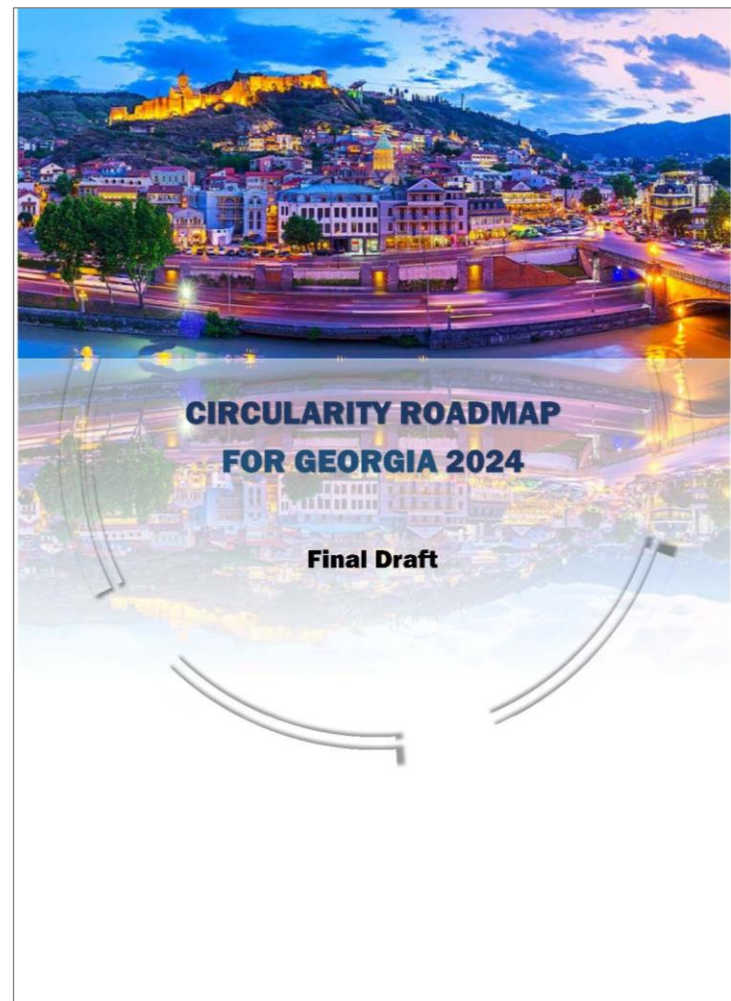
The **key objectives** of the circularity mapping report for Georgia:

- Provide a snapshot of how circular Georgia is by applying an internationally recognized circularity metric methodology.
- Identify priority aspects for CE Transition planning (priority sectors of economy; priority types of intervention etc.)
- Identify how materials flow throughout the economy and how they may limit or boost the current circularity metric.
- Spotlight possible interventions within significant industries that can aid Georgia's transition to circularity and reduce its material footprint.
- Spotlight avenues for businesses and governments to change their behaviour to encourage circular consumption.
- Provide recommendations for the development of the Road Map to Circular Economy in Georgia.



CE Strategy and Roadmap

- The development of the Roadmap has been based on the circularity mapping prepared in 2021 – 2022.
- The Circularity Roadmap for Georgia has been coordinated by the GoG and implemented by GSNE “Orchis” within the framework of the “Supporting the Government of Georgia in Enhancing Governance and Policies for a Transition to a Circular Economy” Sub-Project of the UNDP’s Governance Reform Fund (GRF) Project funded by the Government of Sweden.
- The key stakeholders in this process were the representatives of the GoG represented by the Inter-Ministerial Coordination Board consisting of 36 experts from various ministries and governmental agencies under the leadership of the Deputy Minister at the Ministry of Environmental Protection and Agriculture of Georgia Acad. Solomon Pavliashvili.



CE Strategy and Roadmap

To develop a Roadmap and then a strategy and action plan for the transition to a circular economy model, it is necessary, first of all, to describe the general structure of the Georgian economy, its features that determine the current level of circularity and prospects for the development of circular models. Naturally, the description should reflect the specifics of Georgia's economic structure.

At the same time, it is important to take into account that:

- The circular economy model is not limited to the issue of waste reduction and recycling, but also includes optimization of resource management, material consumption and energy consumption.
- Any changes that lead to an increase or preservation of the contribution to GDP, while reducing the consumption of materials and energy and the natural resources used (land, water, minerals, etc.), should be considered as a shift towards the circular model.
- The ultimate goal of preliminary assessments of the economic structure is to identify possible types of interventions that are practically feasible and at relatively low cost of material and human resources, would achieve maximum results in terms of increasing the level of circularity.



Specific Features of Georgia's Economy

- Agriculture is the leading sector of the economy in Georgia by its input in GDP and number of employees
- About 60% of production belongs to the food industry, 11% falls on the manufacturing of mineral fertilizers and 17% on the production of base metals
- Machinery and equipment, computers and telephones, household items and household chemicals are produced in extremely small quantities and are mainly imported
- Wholesale and retail trade provides input to GDP equal to 15.6%
- Tourism is an essential branch of the economy: in the statistical tables, tourism is not singled out as a separate type of activity, but indicators related to tourism are indirectly reflected in the nomination Accommodation and food service activities
- Construction is another sector that provides significant input in GDP during the last years. In 2023 this input was equal to 7.9%.
- Agriculture, trading and constructions represent the sectors, which engages most part of employees



Specific Features of Georgia's Economy



- The extremely low level of manufacturing goods and products other than agriculture products results that the actions aiming increasing durability and life span of the products are not directly applicable in Georgia and could be taken into account only in trading schemes, via participation in international CE platforms.



- The unusually high level of losses in gas distribution networks and power transmission lines makes it efficient and significant in terms of increasing circularity the actions aimed on rehabilitation of infrastructure and minimization of losses and GHG emissions.



- The improper management of pastures and deterioration of the old irrigation systems makes it important to improve the resource management systems. This is assumed that improvements in this field will enable to increase the material productivity and input in GDP without using new land resources.



- The waste recycling in different sectors is not well established practice and provides a space for further improvements. Thus, the actions aimed on waste collection, recycling and recovery of materials are among the priority activities to increase circularity.

Why A Circular Economy Roadmap For Georgia

CONFRONT
GLOBAL
CHALLENGES



RESOURCE SCARCITY

DEGRADATION OF ECOSYSTEMS

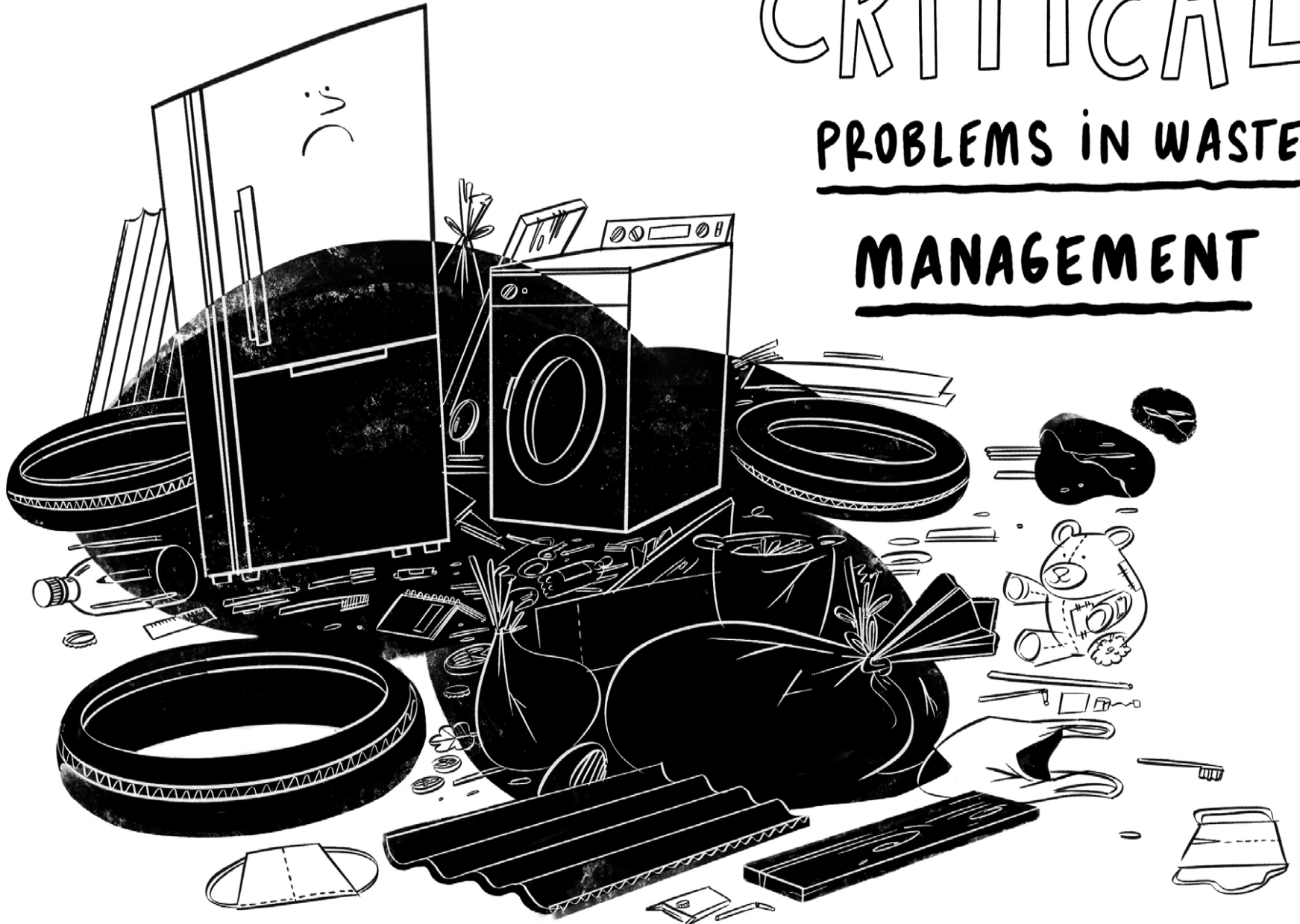
CLIMATE CHANGE



CRITICAL

PROBLEMS IN WASTE

MANAGEMENT



OVERCOME DILEMMA

BETWEEN ECONOMIC DEVELOPMENT

AND ENVIRONMENTAL PROTECTION



Georgia's Vision of Circularity by 2050

- **Circular Economy Culture:** Circular economy principles are deeply embedded in the culture, influencing sustainable production and consumption across all levels of society.
- **Education and Awareness:** Education, communication, and widespread information dissemination have raised awareness of linear economy issues, guiding decisions and actions towards circular practices.
- **Environmental Regeneration:** Circular practices have regenerated nature, improving soil, water, and ecosystem health, and fostering biodiversity.
- **Spatial Planning:** Regenerative principles are integrated into spatial planning, enhancing resilience and natural wealth while promoting public health and well-being.
- **Innovation and Circular Entrepreneurship:** The circular economy has unleashed innovation, making circular business models, clean technologies, and low-impact designs the norm, establishing Georgia as a regional leader.
- **Sustainable Local Development:** The circular economy supports sustainable local development across all regions, respecting geographic diversity, strengthening local economies, and maintaining community identities.
- **Job Creation and Fair Transition:** The circular economy has created diverse job opportunities, emphasizing skills training and inclusion of vulnerable groups to ensure a just and fair transition.

**A LONG TERM
VISION**



**A
SHARED
PATH**

Short-term Actions Proposed for the Roadmap

The Roadmap stipulates a number of short, medium and long term measures to accelerate the circularity of the Georgian economy and achieve the 2050 goals.

The proposed **short-term actions** comprise:

- Development of binding, permissive and encouraging regulations
- Development of policies, strategies and Strategic Action Plans
- Development of indicators and standards for estimation of the circularity performance of stakeholders
- Development of consultancy services, capacity building and awareness raising programs
- Establishment of circular business incubators
- Implementation of the pilot projects



Medium to Long-term Actions

- Implementation of new binding, permissive and encouraging regulations; creation of the efficient enforcement mechanisms
- Implementation of the developed policies, strategies and Strategic Action Plans aimed in CE transition
- Establishment of the standardization system and ecolabeling
- Development of consultancy services, implementation of the capacity building and awareness raising programs
- Expansion and operationalisation of business incubators
- Development of the international CE platforms.
- Completions of works on developing indicators and standards for estimation of the circularity performance of stakeholders



Intermediate and Long-term Goals

1. Generate new green jobs

2. Decrease municipal solid waste per capita

3. Decrease total waste generation

4. Increase material productivity

5. Increase general recycling rate

6. Increase municipal solid waste recycling rate

7. Recover land affected by illegal dump sites

8. Minimize the energy and material losses in transport networks

9. Increase energy efficiency

10. Improve the land and water resource management and material productivity

Four Pillars of Circular Economy

- 1. Circular innovation** includes actions to create a robust national innovation system for a circular economy in Georgia, by embedding circular design principles in the creation of products, services, and processes.
- 2. Circular culture** includes actions to make circular habits and practices the norm, through education and skills development, communications campaigns, and actions to strengthen transparency and monitoring.
- 3. Circular regulation** includes actions to adjust Georgia's regulatory framework to support circular practices, by expanding the range of products subject to the Extended Producer Responsibility scheme, promoting reuse and recovery of waste, and incentivising and facilitating waste separation at source.
- 4. Circular regions** include actions to adapt to the different contexts and priorities of Georgia's regions, and distribute resources across the country, by providing waste management infrastructure, developing regenerative rural production, and growing secondary markets for local materials.



Key Recommended Actions of the Roadmap (1)

- **Subsidies** should be removed and the negative externalities of linear economic activities internalised.
- **Public tools** such as public procurement should be used to accelerate the market for circular economy products and services. The use of GPP should be incentivised.
- **Public funds** should be activated as a ‘de-risking’ instrument to mobilise more private capital for scale-ups with a circular scope.
- **Technical assistance** should be provided to help businesses and local administrations understand linear risks and the economic and societal benefits of the circular economy.
- **Response measures** which mitigate the economic and social impacts of communities, sectors and regions particularly exposed to the legacy of linear economic systems (e.g., mining) should be introduced.
- **Priority** should be given to policy interventions that comprehensively address multiple environment, social and governance risks.

Key Recommended Actions of the Roadmap (2)

- **Develop reporting standards** for Georgian companies aligned with those proposed within EU for linear risks of investments and businesses and incorporate them into standard accounting practices could help to ensure that linear risks are sufficiently evaluated and disclosed.
- **The reporting standards** should provide a methodology for corporates and financial institutions to identify the exposure to linear risks within their portfolios or operations.
- **Further refine the definition for the circular economy** and develop a definition of circular economy finance.
- **Establish in Georgia technical and financial advisory services** to support the development of business models for circular economy businesses or projects seeking finance that effectively capture and articulate the benefits of circular economy strategies.
- **Establish a dedicated proportion of finance** within selected financial instruments existing or planned in Georgia to support circular economy investments and businesses.

Key Recommended Actions of the Roadmap (3)

- **Develop metrics and indicators** to complement the existing in Georgia macroeconomic indicators adopted at national level.
- **Make circular economy indicators** mainstream part of statistical reporting.
- **Set targets** using suitable indicators. Where mandatory targets are not politically feasible, set non-binding aspirational targets that can serve as a basis for voluntary agreements with industries.
- **Map where national fiscal policies in Georgia provide subsidies** and price signals in favour of the linear economy.
- **Expand the scope of EPR schemes**, currently under implementation in Georgia, to additional products.
- **Analyse where the existing EPR systems** need to be modified in order to favour the production of high-quality secondary materials, e.g. via modulated fees.



Key Recommended Actions of the Roadmap (4)

- **Set national target dates for ending landfilling.** Reduce landfilling and incineration by applying increasing taxes on these activities.
- **Develop benchmarks for circular aspects of product performance,** including benchmarks for durability, reparability, recyclability, minimum recycled content and hazardous substances content,
- **Apply these benchmarks to remove underperforming products** from the national market (e.g. via implementing measures such as those stipulated by the EU Eco-design Directive that extend to non-energy related products).
- **Stimulate the adoption of high-performance products** through fiscal and ‘reputational’ incentives (e.g. reduced VAT, eco-labels). Make the information about circular aspects of products available in business to business and business to consumers transactions through product information requirements (e.g. the product passports) or publicly accessible databases.
- **Conduct checks and revisions** of existing and planned relevant sectoral policies which may conflict with the objectives and actions described above.

Key Recommended Actions of the Roadmap (5)

- **Develop regional and national circular economy strategies** that include collaboration with other countries and regions; on the regional level, ensure that regional authorities include circular economy opportunities in their smart specialisation strategies.
- **Link the circular economy to other societal challenges and transitions**, such as climate change in order to create a coherent strategic environment for businesses and facilitate synergies across different public initiatives.
- **Develop innovative forms of collaboration** within and between value chains and innovative ways of sharing costs and benefits of circular economy projects between companies who otherwise have no market incentive to collaborate.
- **Allocate public funds to circular projects** that bring significant benefits to the community to ensure that these projects materialise and are financially viable. This may include direct payments for public services but also indirect support such as guarantee schemes.
- **Stimulate demand and create new markets for circular products** and services through Green Public Procurement.

A COUNTRY WHERE
NOTHING GETS WASTED
AND EVERYTHING



is
TRANSFORMED
FOR THE CARE OF LIFE

Dr Medgar Tchelidze

Basic outcomes of Mapping Circularity in Georgia

Priority Sectors for Circular Economy

Agriculture, fishing and Manufacture of Food Products

- Annual crop production (agriculture)
- Permanent crop production and manufacture of food products (agriculture)
- Grape cultivation and wine making
- Animal husbandry and manufacture of food products
- Fishery and fish processing

Forestry, logging and Manufacture of Wood Products

- Forestry and logging
- Manufacture of wood products

- Mining and quarrying (except oil and gas)
- Construction
- Manufacture of basic metals
- Manufacture of other goods and products
- Electric power generation, transmission and distribution/ Manufacture of gas; distribution of gaseous through mains
- Waste collection, treatment and disposal activities; Waste utilization, remediation and other waste management services
- Wholesale and retail trade
- Transportation and storage
- Tourism, accommodation and food service activities

Criteria Used for Clustering Economic sectors

1. Types of priority actions aimed at implementing the principles of the circular economy:

- Reuse of products, recovery of materials or recycling of waste
- Reduction of material and energy losses
- Efficient use of resources
- Reducing the amount of waste by ensuring the supply of spare parts and repair services
- Increasing the life span of products

2. The type of regulations necessary for the CE transformation:

- Binding laws and technical regulations
- Permissive laws and regulations that allow for actions that were not previously permitted or were subject to additional costs (taxes, etc.)
- Encouraging regulations that provide additional economic benefits or economic advantages to companies implementing the principles of the circular economy
- Development of indicators and standards that allow assessing the activities of economic entities in terms of their compliance with the principles of circularity
- Policy, strategies and strategic action plans

Criteria Used for Clustering Economic sectors

3. Economical and financial viability of the proposed actions in long-term and scheme of the initial investments

4. Entities responsible for the execution of actions aimed at implementing the principles of the circular economy:

- Government organizations or companies engaged in this type of activity
- A narrow circle of large private companies, which limit the number of subjects engaged in this type of economic activity
- A wide range of private companies (small and medium-sized businesses) engaged in this type of economic activity



Cluster 1. Management of Resources and Losses

Types of actions	<ul style="list-style-type: none">- Reduction of material and energy losses- Efficient use of resources
The type of regulations	<ul style="list-style-type: none">- Policy, strategic action plans
Entities responsible for the enforcement	<ul style="list-style-type: none">- Government organizations (ministries, agencies or companies) engaged in this type of activity
Economical and financial viability of the proposed actions in long-term:	<ul style="list-style-type: none">- Need of significant initial investments, however in a long-term they increase the productivity and incomes of the beneficiaries;- The investments should be either incurred by the responsible governmental organizations, or by the private operators under the terms of investments agreed with the Government- The maintenance costs are covered through the service fees by the beneficiaries
Types of activities included in cluster 1:	<ul style="list-style-type: none">▪ Agriculture, fishing and Manufacture of Food Products (annual and permanent crop production; grape cultivation and wine making; animal husbandry and manufacture of food products);▪ Electric power generation, transmission and distribution/ Manufacture of gas; distribution of gaseous fuels through mains

Cluster 2. Mining and Basic Metal Manufacture

Types of actions	<ul style="list-style-type: none">- Reuse of products, recovery of materials or recycling of waste
The type of regulations	<ul style="list-style-type: none">- Binding laws and technical regulations- Encouraging regulations that provide additional economic benefits or economic advantages
Entities responsible for the enforcement	<ul style="list-style-type: none">- A narrow circle of large private companies, which limit the number of subjects engaged in this type of economic activity
Economical and financial viability of the proposed actions in long-term:	<ul style="list-style-type: none">- The planned activities require significant initial investments, however the investments are economically feasible and the activities are self-sustainable. The investment schemes correspond to usual business planning models for feasible projects.
Types of activities included in cluster 2:	<ul style="list-style-type: none">▪ Mining and quarrying (except oil and gas extraction)▪ Manufacture of basic metals

Cluster 3. Basic Industrial and Municipal Waste Streams Management

Types of actions	- Reuse of products, recovery of materials or recycling of waste
The type of regulations	<ul style="list-style-type: none"> - Binding laws and technical regulations - Permissive laws and regulations - Encouraging regulations that provide economic benefits or advantages - Development of indicators and standards for estimation of CE level
Entities responsible for the enforcement	- A wide range of private companies (small and medium-sized businesses) and PROs and other associations created by them
Economical and financial viability of the proposed actions in long-term:	- Economic viability is conditional: In most cases, the planned activities are not associated with the additional incomes sufficient for covering related expenses. In such cases the PROs are sustained through service fees paid by the waste producers (polluters). In other cases, the waste recycling activities may become economically viable if supported by incentivizing regulations and financial mechanisms
Types of activities included in cluster 3	<ul style="list-style-type: none"> ▪ Waste Management Activities: (Waste collection, treatment and disposal activities; waste management services) ▪ Agriculture, fishing and Manufacture of Food Products ▪ Forestry, logging and Manufacture of Wood Products ▪ Construction ▪ Manufacture of other goods and products ▪ Wholesale and retail trade ▪ Transportation and storage ▪ Tourism, accommodation and food service activities

Cluster 4. Energy Efficiency and Renewable Energy

Types of actions	<ul style="list-style-type: none">- Efficient use of resources- Minimization of Energy losses- Increasing the share of renewables
The type of regulations	<ul style="list-style-type: none">- Binding laws and technical regulations- Encouraging regulations that provide economic benefits or advantages- Development of indicators and standards for estimation of CE level
Entities responsible for the enforcement	<ul style="list-style-type: none">- A wide range of private companies (small and medium-sized businesses)- Construction companies- Energy sector operators
Economical and financial viability of the proposed actions in long-term:	<ul style="list-style-type: none">- The planned activities require significant initial investments. The CE activities will become economically viable in mid-term and long-term, especially in case if they are if supported by incentivizing regulations and financial mechanisms (taxes; investment grants etc.)
Types of activities included in cluster 4	<ul style="list-style-type: none">▪ Energy sector▪ Construction▪ First category enterprises of different economic sectors

Actions and Timeline for Cluster 1 - Agriculture

▶ Short term actions:

- Complete the Law on Sustainable Pasture Management
- Develop the Pasture Management Strategy and Action Plan for 2025 – 2030 in compliance with the National Pasturelands Management Policy Document (NPMPD)
- Implement Irrigation Strategy for Georgia 2017-2025
- Develop Irrigation strategy for 2025 – 2030



▶ Mid-term and long-term actions:

- Implement the Pasture Management Strategy and Action Plan for 2025 – 2030 in compliance with the National Pasturelands Management Policy Document (NPMPD)
- Implement Irrigation Strategy for Georgia 2025 – 2030
- Create a capacity building programmes, technological and business consulting capacity that supports Sustainable Pasture Management and Sustainable Management of the Irrigation Systems at the community/end users level (creation and management of the irrigation associations)

Responsible Entities and Viability for Cluster 1 - Agriculture

► Entities responsible for the implementation of the Planned Actions

- Ministry of Environmental Protection and Agriculture
- Georgian Amelioration LTD (Government owned company established to manage the irrigation matters)
- Governmental CE Commission
- Municipalities (to support implementation of the strategies and strategic action plans)
- Businesses and farmer associations engaged in agriculture (to support implementation of the strategies and strategic action plans)

► Economical and financial viability of the proposed actions in long-term and scheme of the initial investments

- Initial investments should be incurred by Government
- Additional income generated due to improvement the pastures and irrigation infrastructure will allow to spent some part of this additional income (fees paid by end-users) for the maintenance needs.

Cluster 1: Electric power generation and distribution

► Mid-term and Long-term Actions:

- Develop particular projects aimed on optimization of the import-consumption-storage-export schemes: projects of energy storages (batteries; Hydropumped reservoirs etc.)
- Establish the system for financing and managing Energy efficiency projects
- Establish/improve the construction supervision system to ensure implementation of the Net-Zero Consumption Buildings Strategy

► Entities responsible for the implementation of the Planned Actions:

- MESD; MEPA; GSE; Governmental CE Commission
- Businesses engaged in energy generation and operation of the electric networks

► Economical and financial viability of the actions:

- Initial investments should be incurred by the GoG or by the private companies on the terms agreed with GoG. The energy fee collection mechanisms and export incomes ensures sustainable operation of the systems.



Cluster 1: Distribution of Gaseous Fuels through Mains

► Gaps in Circularity:

- In 2015, the total losses in the internal gas distribution network amounted to 103.8 million m³, 64% of which came from KazTransGas-Tbilisi.
- Georgia's energy balance (Geostat) shows that average losses of natural gas during 2018 - 2020 accounted for 96,9 million m³ (3.7% of inflow and 5.1% of Final Consumption). According to the Georgian NECP, it is planned to reduce losses by 4% by 2030.
- Inefficient schemes of import, consumption, storage, processing and export: absence of gas storage facilities. The absence of the gas storage facilities is associated with direct income losses: the opportunity of additional income that could be gained due to the seasonal variations of the gas import/export prices is lost.

► Short term actions:

- Rehabilitation of the Gas transport networks to reduce losses of gas in networks by 4% by 2030, as it is planned in NECP.
- Implement the strategic gas storage projects till 2030.
- Promote and develop a project of delivering in Greece and Italy LNG and receiving the same amount of natural gas by Georgia [project Under the Projects of Energy Community Interest (PECI) and Projects of Mutual Interest (PMI)]

Cluster 1: Distribution of Gaseous Fuels through Mains

▶ Mid-term and long-term actions:

- Promote and develop a project of transforming the natural gas in other products (LNG and CNG) and generating LPG from oil
- Develop strategies for natural gas storage and schemes for generation of additional incomes due to variations of gas prices (gas storage; gas products; generation of electricity etc.);

▶ Entities responsible for the implementation of the Planned Actions:

- MESD; MEPA; GSE; Governmental CE Commission
- Businesses engaged in energy generation and operation of the pipelines and gas distribution networks



▶ Economical and financial viability of the actions:

- Initial investments should be incurred by the GoG or by the private companies on the terms agreed with GoG. The energy fee collection mechanisms and export incomes ensures sustainable operation of the systems.

Cluster 2: Mining and Manufacture of basic metals

► Gaps:

- The Waste Management Code does not regulate waste generated from extractive industries or manufacture of basic metals.
- Certain, particular wastes generated in Mining sector is classified as extremely hazardous waste (arsenic wastes; cyanides etc.) and poses community health risks.
- Existing practice of tailing recycling and recovery is very limited in Georgia due to lack of fiscal incentives and limited access to modern Technologies. By-products stored in tailings are not processed; Current level of circularity is very low (0.85%)

► Short term actions:

- For the next 5/10 years the target could be recovery of materials reprocessing at least 5% of tailings stored near the mines and basic metal manufacture facilities.
- Update the waste management legislation and regulations to specifically address the issue of the metal mining and manufacture tails, including mandatory requirements for recycling of tails and recovery of valuable materials. Include permissive clauses, enabling the private companies to use their own waste (tailing) for recovering materials.
- Develop a policy and strategic action plans to manage tailings and hazardous wastes related to mining sector; Develop projects to eliminate hazardous waste associated risks

Cluster 2: Mining and Manufacture of basic metals

► Mid-term and long-term actions:

- Awareness building programs
- Provide technological consulting capacity, networking opportunities and financial mechanisms supporting the producers in developing the waste recycling and material recovery projects

► Entities responsible for the implementation of the Planned Actions:

- A narrow circle of large private companies, which limit the number of subjects engaged in this type of economic activity
- Supporting organizations: MESD; MEPA; Governmental CE Commission



► Economical and financial viability of the actions:

- The specific feature of the cluster 2 is that with the modern technologies, the recovery of the valuable materials from tailings is economically viable. Investments should be incurred by the private companies.

3.1 Municipal (Household) Waste Management

► CE Gaps in Municipal Waste Management System

- Existing practice of waste preventing, reuse, recycling and recovery is very limited in Georgia. Data on these activities are also very limited. The reporting obligation for companies and treatment facilities has entered into force only from 1 August 2016.
- Due to lack of fiscal incentives, reuse is limited in Georgia and applies only to e.g. glass bottles. A limited number of installations for recycling of waste materials such as paper, glass, plastic and others exist in Georgia; however, data on amounts of recycled materials is not available nor in this case. Recycling is only carried out by private companies for those waste materials for which the cost (per tonne) for collection and treatment is lower than the price of virgin materials. With the support of IFIs first steps are made for gradual implementation of source separation practices.
- Incineration of waste for recovery of energy does not exist in Georgia.
- Approval of the fifth EPR regulation related to packaging waste management is pending for too long and still needs to be finalized



3.2 Agriculture and Manufacture of Food Products

► Circularity Gaps:

- Agricultural waste generated by individual households and enterprises is collected by the municipal services. Separation at source is poor. 90% part of agricultural waste goes mixed with other types of waste to the official and illegal landfills.
- Current level of circularity is extremely low. Small part of organic waste is used for feeding animals and very small part is used for composting. By-products generated in food processing industry, as well as food waste are not recycled and reused. There is lack of awareness about circular technologies and business models encouraging the enterprises to implement them. Recycling and reuse of the packaging waste is poor. Technical regulation under the Extended Producer's Responsibility (EPR) is not yet approved.
- The UN Food and Agriculture Organization studied and found that a large amount of food is generated as waste and ends up in landfills, while there is a real possibility that such food could be delivered for people who need it.
- The WM Code and the Technical Regulation on management of non-food products of animal origin do not provide incentives and requirements for circularity, but mostly make focus on safety and waste utilization aspects. There are no fiscal and other incentives for producers and traders to apply recycling and material reuse Technologies.
- In 2023 the Parliament adopted the law "On Food Losses, Food Waste Reduction and Donation". The new legislative initiative needs enforcement and capacity building and training programs for fiscal and administrative organizations and businesses.

3.3 Forestry logging and Manufacture of Wood Products

► Gaps in Circularity:

- Current material efficiency of timber harvesting and wood processing industries is very low.
- Residuals and wastes of roundwood production and manufacture of wood products are used minimally (if any) and in a non-systemic manner. Lion's portion of harvested timber resources is used as fuel (firewood) that is a low value application.
- In relation with the commercial users the Regulations on Forest Management Rules do not add any meaningful details to the general requirements of the WM Code.
- There are no fiscal and other incentives for commercial users to apply recycling and material reuse Technologies.
- For the communities and local population, the current fee for collecting the wood residues on a state forest land is too high and not attractive.
- There is lack of awareness about technologies and business models encouraging the communities to establish joint entities and enterprises and feasible schemes of the wood waste recycling.



3.4 Construction

► Circularity Gaps:

- The construction waste disposal and treatment is not well regulated by legislation. In 2022 a thematic study on Sustainable Management of the Inert Wastes has been conducted by the Georgian Parliament and first concept notes have been produced. However, this is only beginning of the long process.
- No special landfills or treatment facilities are available to recycle the construction wastes. A lot of construction wastes are irregularly disposed on municipal landfills, on surrounding territories and in a thousand of illegal dumpsites (mostly in gorges and wastelands near the settlements).
- Recycling of wastes and recovery of materials is minimal and spontaneous
- Taking into account that the deposits of sand, gravel and other basic construction materials is limited in Georgia and export and transportation costs are high, there is a space for developing new plants, which can use materials of the demolished buildings and other inert wastes for production of construction materials. Crushed remains of concrete, stones and rocks could be used in replacement of gravel, as well as for producing artificial composite materials.



3.5 Wholesale and Retail Trading

► Circularity Gaps:

- Existing practice of waste preventing, reuse, recycling and recovery is very limited in Georgia due to lack of fiscal incentives and poor source separation.
- Food waste generated in trade wholesale and retail trade sector is not recycled.
- Wastes produced in Motor vehicle trade and repair sector (consumer level) to great extent are covered by EPR regulations :
 - Recycled used oil - 2,050 tonnes (max. 32%)
 - Recycled and reused accumulators (locally or exported for recycling) - 6,350 tonnes /year (100%)
 - Recycled and reused tiers (locally or exported for recycling) - 7,000 tonnes /year (max. 22%)



3.6 Tourism, accommodation and food service activities

► Gaps

- In general, food waste (food and associated inedible parts removed from the human food supply chain) is the main type of waste generated in sectors of economy, such as accommodation and food services.
- Another important type of waste generated in this sector is packaging (plastic and glass bottles and other packaging wastes).
- At present most part of food waste is disposed at the landfills:
 - Separation of organic wastes and recycling is very poor.
 - There is no practice of donating edible food remains.
 - Part of the returned expired products are used by the farms for feeding animals.
 - Only PET and glass bottles are to some extent separated and recycled. However, the share of recycled waste is small: total 180 900 tons of plastic products were manufactured and imported in Georgia in 2020. The analysis shows that 93% of these (i.e. 168 300 ton) becomes waste, and the recycling volume does not exceed 7% for plastic. In Georgia, 26 companies work on plastic recycling, and 15 of them produces intermediate products (shredded plastics, granulated plastics).



3.7 Actions aimed to reconcile gaps for Cluster 3 and timeline

► Recommended Actions

- Further development and implementation of the EPR regulations or similar binding regulations (packaging, forestry and wood production; food and animal husbandry wastes; construction waste; etc.);
- Development of the strategy, action plan and regulations for managing wood industry wastes, food and animal husbandry wastes
- Implement the law “On Food Losses, Food Waste Reduction and Donation”.
- Implement the provisions of the “Donation” law, support creation of the charity organizations engaged in food redistribution and donation
- Create a regulatory framework that supports and incentivizes CE activities, in particular, collection and recycling of the wastes.



3.7 Actions aimed to reconcile gaps for Cluster 3 and timeline

► Short term actions:

- Develop technical standards and accountability standards to estimate circularity degree of the companies; Develop and implement Ecolabeling schemes
- Develop technological and business consulting capacity and business incubators to assist commercial companies and community associations in developing waste recycling projects
- Work with businesses to increase circular awareness. Implement Awareness programmes
- develop inert waste disposal facilities and a proper system for managing inert waste collection and disposal
- elaborate regulations and financial mechanisms motivating the constructing companies and waste operators to develop inert waste recycling enterprises



3.7 Actions aimed to reconcile gaps for Cluster 3 and timeline

► Mid-term and long-term actions:

- Propose and participate in development of the international platforms for better engagement of all participants of the production/consumption chain (producers, exporters, importers, distributors, end users) in the EPR process
- Further implement and develop the binding EPR regulations (packaging, forestry and wood production; etc.), or develop similar regulations;
- Further develop and improve a regulatory framework that supports and incentivizes CE
- Embed accountability standards to estimate circularity degree of the companies; Develop and implement Ecolabelling schemes
- Develop technological and business consulting capacity and business incubators to assist companies in developing waste recycling
- Target for 5-year program: During the 5 years it is possible to achieve recycling of the 10% of the annually produced agricultural wastes.



3.8 Entities responsible for the implementation of CE regulations and actions for Cluster 3

► Entities responsible for the implementation of the Proposed Actions

- A wide range of private companies (small and medium-sized businesses, large businesses) engaged in agriculture and manufacture of food products; tourism sector, food services and accommodation; construction, wholesale and retail trade; and associations created by them.
- As expanding EPR regulations or development and implementation of similar regulations is recommended, PROs will play a prime role for Cluster 3

The Government can support businesses creating incentives for waste separation and recycling, while the key actors for recycling and reusing wastes are first of all large and medium size businesses and to certain extent also small size enterprises.

► Supporting organizations:

- Ministry of Environmental Protection and Agriculture
- Ministry of Economy and Sustainable Development
- Governmental CE Commission

3.9 Economical and financial viability of the proposed actions in long-term and scheme of the initial investments

- Economic viability is conditional: The planned activities need significant initial investments. In most cases, the planned activities are not associated with the additional incomes sufficient for covering related expenses. In such cases the PROs are sustained through service fees paid by the waste producers (polluters) and income generated through waste recycling is just an additional income source. PROs and other entities created under the EPR or similar binding regulations are not viewed as self-sustainable economically. Income generated by the waste recycling and production of new products out of the separated waste streams will not cover total expenses.
- The main financial principle for operations of the waste collecting and processing entities is subsidies and fees paid by the waste producers under the EPR regulations. The waste management organisations (PROs etc.) get the major part of their income for providing waste management services to different producers. The income generated through manufacture of new products from the waste is considered as the additional income, but not the basic.
- In other particular cases, the waste recycling activities may become economically viable if supported by incentivizing regulations and financial mechanisms (taxes; investment grants etc.)



Cluster 4: Energy Efficiency and Renewable Energy

The Energy Efficiency regulations and requirements apply to public sector and different sectors of Economy. The Energy Efficiency matters in the context of CE should be seen first of all in their relation with the sectors of Economy, while public sector is engaged indirectly (through construction and delivery of electricity and heating services).

Among the sectors of Economy, some sectors have a special importance and place in the entire system aimed on increasing Energy Efficiency. These specific sectors are: Construction and Energy Sector (generation, transmission, distribution). Thus the cluster 4 is represented by Construction, Energy sector and all other businesses, who are considered as energy consumers and also have certain obligations in terms of supporting energy efficiency.

- Construction Sector
- Energy Sector (generation, transmission, distribution)
- First Category Enterprises

Enterprise of the first category is an enterprise whose performance indicators at the end of the annual reporting period meet a least 2 of the following 3 criteria:

- the total value of its assets exceeds 50 million GEL;
- its income exceeds 100 million GEL;
- its average number of employees in the reporting period exceeds 250;



Cluster 4: Energy Efficiency and Renewable Energy

► Short-term Actions:

• First Category Enterprises:

- Implement the legislation, bylaws, regulations, strategies, policy and strategic action plans developed in a field of energy efficiency and renewable energy
- Introduce mandatory energy audits / implementation of ISO 50001 Energy management systems
- Introduce voluntary energy audits for SMEs

• Energy Sector (generation, transmission, distribution):

- Implement the legislation, bylaws, regulations, strategies, policy and strategic action plans developed in a field of energy efficiency and renewable energy
- Achieve 27.4% share of renewable energy in final energy consumption by 2030.
- Facilitating the gradual introduction of smart meters
- Rehabilitate the transmission lines to minimize energy losses in the mainline transmission lines managed by GSE to meet the target levels and timelines set forth in NECP. The target for 10 years (till 2030) is to reduce the losses from 7.7% to 5.0% as minimum.
- The average losses of natural gas during 2018 - 2020 accounted for 96,9 m³ (3.7% of inflow and 5.1% of Final Consumption). According to the Georgian National Integrated Energy and Climate Plan (NECP), it is planned to reduce losses by 4% by 2030.

Cluster 4: Energy Efficiency and Renewable Energy

- **Public Sector:**

- Implement the legislation, bylaws, regulations, strategies, policy and strategic action plans developed in a field of energy efficiency and renewable energy
- 1% energy-efficient renovation of buildings (this obligation increases to 3% from 2024)
- Public procurement (monetary thresholds, building certification, energy labeling)
- Promotion of ESCO market (introduction of energy performance contract practice)

- **Construction:**

- Implement the legislation, bylaws, regulations, strategies, policy and strategic action plans developed in a field of energy efficiency and renewable energy
- Establish/improve the construction supervision system to ensure implementation of the Net-Zero Consumption Buildings Strategy
- Achieve 1% energy-efficient renovation of buildings (this obligation increases to 3% from 2024)



Cluster 4: Energy Efficiency and Renewable Energy

▶ Mid-term and Long-term Actions

- First Category Enterprises
- Mandatory energy audits / implementation of ISO 50001 Energy management systems
- Voluntary energy audits for SMEs

▶ Energy Sector (generation, transmission, distribution)

- Energy distributors (must ensure efficient energy consumption by end users through various measures)
- Facilitating the gradual introduction of smart meters

▶ Public Sector

- 1% energy-efficient renovation of buildings (this obligation increases to 3% from 2024)
- Public procurement (monetary thresholds, building certification, energy labeling)
- Promotion of ESCO market (introduction of energy performance contract practice)

Cluster 4: Energy Efficiency and Renewable Energy

► Construction Sector

- Develop new skills for the construction sector to achieve European energy targets
- Training construction and design companies and workers on energy efficient building practices
- Green training for construction managers
- Developing energy-efficient competencies in tomorrow's building managers
- Establish platform delivering zero energy training resource
- Building professionals can improve their energy efficiency skills using a new EU-funded online platform. Training materials are freely available to help architects, engineers and other professionals better design and build low energy constructions.



Short term, mid-term and long-term goals



Short-term Interventions

The proposed short-term actions in general comprise:

- development of binding, permissive and encouraging regulations
- development of policies, strategies and Strategic Action Plans
- Start works on developing indicators and standards for estimation of the circularity performance of stakeholders
- Development of consultancy services, capacity building and awareness raising programs
- Establishment of business incubators
- Implementation of the pilot projects



Mid-term and Long-term Interventions

The proposed mid-term and long-term actions in general comprise:

- Implementation of new binding, permissive and encouraging regulations; creation of the efficient enforcement mechanisms
- Implementation of the developed policies, strategies and Strategic Action Plans aimed in CE transition
- Completions of works on developing indicators and standards for estimation of the circularity performance of stakeholders; Establishment of the standardization system and ecolabelling.
- Development of consultancy services, implementation of the capacity building and awareness raising programs
- Establishment of business incubators



Short term goals

Development of comprehensive policies to support the transition to circular economy for all clusters and priority sectors of economy

► Objectives:

- Develop strategic documents related to CE and establish CE Transition Governmental Committee
 - Completion of the National Circular Economy Road Map for Georgia
 - Development of Circular Economy Strategy for Georgia
 - Elaboration of Strategic Action Plan for CE Development in Georgia
 - Establishment of the CE Transition Governmental Committee leaded by MEPA
 - Inclusion of the CE components in the Regional Development Strategies and Strategic Action Plans

Short term goals

Development of comprehensive policies to support the transition to circular economy

Actions:

- Develop metrics and indicators to complement the existing in Georgia macroeconomic indicators adopted at national level, in order to measure, monitor and benchmark the circular economy performance at regional, local, sector and corporate level.
- Make circular economy indicators a mainstream part of statistical reporting so that new indicators are build on and complement the existing statistical and reporting systems.
- Develop reporting standards for Georgian companies aligned with those proposed within EU for linear risks of investments and businesses and incorporate them into standard accounting practices.

Key enablers:

- Ministry of Environmental Protection and Agriculture
- Ministry of Economy and Sustainable Development
- Ministry of Finance of Georgia
- CE Transition Governmental Committee (to be established)
- National Statistics Office of Georgia (Geostat)

Supporting Stakeholders:

- Businesses associations



Short term goals

Development of comprehensive policies to support the transition to circular economy

Further Actions:

- Development and implementation of the Awareness Raising and Capacity Building Programs for various stakeholders
- Establish in Georgia technical and financial advisory services to support the development of business models for circular economy
- Development of the Business Incubators and Consultancy Services in CE field for businesses and various stakeholders

Key enablers:

- Ministry of Environmental Protection and Agriculture
- Ministry of Economy and Sustainable Development
- Ministry of Education and Science
- Georgian National Academy of Sciences
- CE Transition Governmental Committee (to be established)

Supporting Stakeholders:

- Universities and experts' society
- Business associations



Short term goals

Implementation of Circular Economy Pilot Projects

► Objectives:

- Demonstrate the practical efficiency and feasibility of the circular economy models

► Actions:

- Develop CE pilot project at municipal level
- Select CE pilot projects proposed by business sector
- Facilitate in fundraising for CE pilot projects
- Support in implementation of the CE pilot projects
- Use CE pilot projects as demonstration in awareness raising programs

Key enablers:

- Ministry of Environmental Protection and Agriculture
- Ministry of Economy and Sustainable Development
- CE Transition Governmental Committee (to be established)
- Municipal authorities

Supporting Stakeholders:

- Universities and experts' society
- Business associations
- Local communities in rural regions

Mid-term and Long-term Goals

Mid-term goals (10 years):

- ▶ **Goal 1.** Implementation of the CE Strategy and Action Plan for coming 10 years
- ▶ **Goal 2.** Implementation of the Awareness Raising and Capacity Building Programs for various stakeholders
- ▶ **Goal 3.** Create incentives and provide technical support to the business companies in recycling their own wastes and wastes generated by the similar companies operating in the sector

Key enablers:

- Ministry of Environmental Protection and Agriculture
- Ministry of Economy and Sustainable Development
- CE Transition Governmental Committee (to be established)

Supporting Stakeholders:

- Sectoral Ministries
- Universities and expert's society
- Business associations
- Regional and municipal authorities



Mid-term and Long-term Goals

Mid-term and Long-term goals: Goal 4. Create National collaborative and interactive platforms:

Actions:

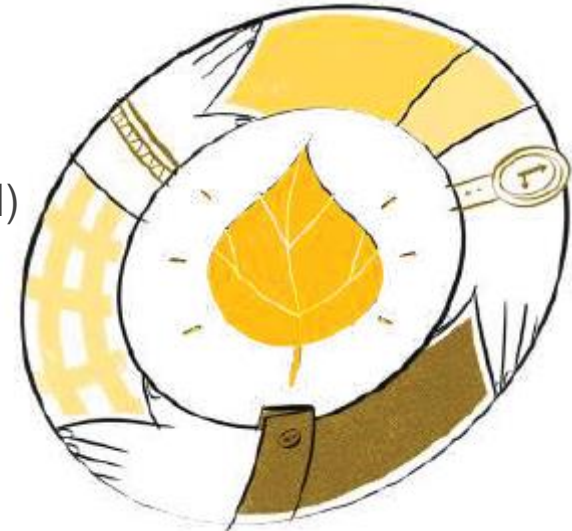
- Create National collaborative and interactive platforms for closer connections between businesses that normally do not interact on the market.
- Develop innovative forms of collaboration within and between value chains and innovative ways of sharing costs and benefits of circular economy projects between companies who otherwise have no market incentive to collaborate.
- Act as a guarantor if the risk for individual companies of being engaged in circular projects is too high.

Key enablers:

- Ministry of Environmental Protection and Agriculture
- Ministry of Economy and Sustainable Development
- CE Transition Governmental Committee (to be established)

Supporting Stakeholders:

- Business associations
- Existing International Platforms



Mid-term and Long-term Goals

Mid-term and Long-term goals: Goal 5. Creation of the international platforms

Actions:

- Support creation of new international platforms and engage the existing international platforms to ensure CE principles throughout the entire supply chain

Key enablers:

- Ministry of Environmental Protection and Agriculture
- Ministry of Economy and Sustainable Development
- CE Transition Governmental Committee (to be established)

Supporting Stakeholders:

- Business associations
- Existing International Platforms



Mid-term and Long-term Goals

Mid-term and Long-term goals: Goal 6. Establishment of public funds

Actions:

- Establishment of public funds as a ‘de-risking’ instrument to mobilise more private capital for scale-ups with a circular scope.
- Establish a dedicated proportion of finance within selected financial instruments existing or planned in Georgia to support circular economy investments and businesses. Funds or instruments for the circular economy would help to scale up finance for circular economy businesses and products.

Key enablers:

- Ministry of Environmental Protection and Agriculture
- Ministry of Finances
- Ministry of Economy and Sustainable Development
- CE Transition Governmental Committee (to be established)

Supporting Stakeholders:

- Business associations

Thank you!

Contact Details:

Dr Dariusz Prasek

deprasek@gmail.com

Dr Medgar Tchelidze

medgarcorresp@yahoo.com

orchisge@yahoo.com



გარემოს დაცვისა და სოფლის
მეურნეობის სამინისტრო



Governance Reform Fund (GRF) Project

Supporting the Government of Georgia in Enhancing Governance & Policies for a Transition to a Circular Economy