# TOWARDS A CIRCULAR ECONOMY – COUNTRY PRACTICES AND GOVERNMENT POLICY DECISIONS

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**Abstract:** The goal of this article is to analyse how some countries have managed to move forward their efforts to implement government policies, by harmonized and aligned approaches, on establishing the strategy for the transition to the circular economy. This experience could be useful for the Republic of Moldova, as our country committed to implement circular economy principles within the 2030 Agenda for Sustainable Development, as well as other main policy documents of the Government. The informational support of the researches constitutes the existing normative framework of the EU on circular economy and waste management, as well as internal regulations and official reports of some selected countries. Also, there were analysed reports and available data on specific indicators covering various aspects of the circular economy using infographics' reports of some international organizations. The research methodology was based on the following methods: analysis and synthesis, induction and deduction, methods inherent in economic disciplines - observation, reasoning, comparison, classification, which allowed a deep analysis of the research topic.

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**Jel classification:** Q53, Q58

Introduction. The Republic of Moldova has declared its interest in building a sustainable economy, through its commitment to implement the 2030 Sustainable Development Agenda, the "Moldova 2030 National Development Strategy" and a regulatory basis, in which we find the Government's intention to implement the principles of the circular economy. At the same time, although significant improvements can be observed in the regulatory framework for environmental protection, as part of the commitments taken under the Association Agreement and the Multilateral Environmental Agreement, the Republic of Moldova has not yet adopted feasible instruments for their implementation. There is no legal framework for the development of the circular economy, supposing an existing strategy and a roadmap with precise objectives and deadlines to respond effectively to the challenges. The government, local public authorities have a key role to play in designing a transition to the circular economy. There is a need for active involvement in public policy and a strong political commitment. At the same time, incentives are needed to facilitate and stimulate the transition from linear to circular production models.

Results and discussions. In foreign practice there are currently no coherent plans for government policies to promote a circular economy, so there is no single action plan that can be implemented as a model by some country, however, some general recommendations can be given to governments that are starting the process. Thus, foreign practice envisages some common stages within the process of transition to a circular economy: 1. Accepting and understanding the urgency to take the first step of changing the paradigm; 2. Launching the initiative; 3. Evaluation of the local context; 4. Developing a comprehensive strategy; 5. Involving representative actors; 6. Implementing appropriate instruments to encourage circular initiatives; 7. Monitorisation and evaluation.

So, during the first step the awareness that the current linear model can no longer be maintained should be strongly promoted by the Government, together with the idea of a change. For example, the government can start using the circular procurement instrument.

Public procurement spending plays a significant role in accelerating the transition to a more circular economy, as public procurement choices can influence the ambitions or the targets set by authorities (e.g. reducing the impacts of plastics, greenhouse gas emissions, waste reduction, etc). For example: in 2013, the city of Turin introduced several measures in the school catering contract, with requirements for the use of energy-efficient cooking appliances and low-impact means of transport. In addition, contractors were required to switch from the use of plastic to the use of reusable plates. This requirement alone has led to a reduction of 157 tonnes of plastic waste per year (EC, 2014).

It is important from the beginning to set an appropriate level of national ambition with effort and a reasonable time horizon. Objectives and targets must be set according to the local context, also strategic areas in which the principles of the circular economy will be implemented must be identified. The most relevant circular economy opportunities can be mapped and prioritized. This stage supposes creation of working groups and is based on business involvement.

Analysing different strategies from various countries, we notice the predominance of certain sectors (see figure 1).

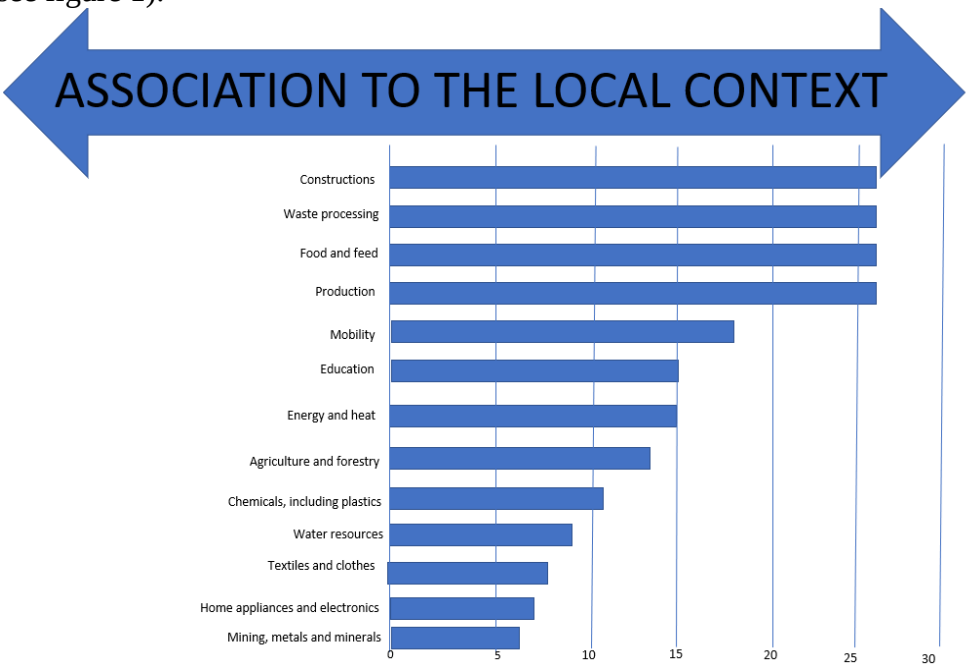


**Figure 1. The predominance of economic sectors in the circular economy strategies**
Source: made by authors

For example, the waste processing domain is a key element in most circular economy strategies, either at central or local level, targeting both municipal and industrial waste. The objective is to prevent waste from reaching the landfill, or to stop incineration. At the same time, options such as reuse, recycling and recovery are targeted. The development of such a capacity requires the combination of several interventions, from regulations to stimulating investments for the creation of waste processing plants.

Another strategic sector is the construction sector. The long-term nature of construction projects (buildings and infrastructure) gives this sector an increased importance in terms of life-cycle thinking. The use of building space is also a key principle of the circular economy. The lifespan of buildings and infrastructure can be extended by renovation. Public procurement can also establish links between demolition and construction of new buildings, so that much of the recycled materials from demolition can be re-incorporated into the new construction phase. As a good practice we can mention the social and ecological houses in France through the application of the HQE (haute qualité environmenale) method (within the project launched by the French Government in order to achieve high ecological quality in the construction sector, in the case of social housing and urban planning), which focuses on designing buildings that use less water and energy and require less maintenance (Sidoroff, S., 2001).

The agri-food system is also a strategic sector. Circularity in this case refers to the recovery of productivity gaps, diversification of crop systems, use of organic fertilizers. Public policy efforts must be directed towards: establishing green public procurement criteria, which respect the overall performance of the sustainability of the food and beverage life cycle; maintaining waste as an energy source, maximizing the value of raw materials, promoting the continuous improvement of the environmental performance of food and beverages throughout their life cycle.

The choice of targeted objectives and priority sectors within the circular economy strategy can be made depending on the role of the sector for the national economy - contribution to employment, production of goods for export, or analysis of circularity potential (for ex., use of energy or raw materials, volume of waste generated or stored). At the same time, the barriers that may arise when requirements from the state will be submitted must be identified, that is why a dialogue with the private environment is crucial within this stage.

Each country chooses its own criteria in defining circular objectives, at national or local level. For example, Italy's National Circular Economy Strategy “Towards a Model of Circular Economy for Italy - Overview and Strategic Framework” aims to maintain the country's position in production in global value chains and to limit the risks of environmental pressures; The Danish National Strategy for Circular Economy aims to change the consumption paradigm, capitalize on buildings and biomass, create a proper functioning market for waste and recycled raw materials; circular economy strategies from Luxembourg and Germany perceive the circular economy in terms of resource efficiency and waste management (CEstakeholderEU, 2016).

The next stage is the development of the circular economy strategy. This strategic document needs to present a long-term vision of the processes of the circular economy and define long-term objectives with a comprehensive roadmap for the coming years. At the same time, time horizons must be aligned with other national or international strategic targets or initiatives.

Some states have created policies based on the existence of a long-term circular economy development strategy. This is the example of the Netherlands through the National Strategic Program for the Circular Economy is "A Circular Economy in the Netherlands until 2050" developed and published by the Ministry of Infrastructure and Water Management and the Ministry of Economic Affairs in 2016. The aim of the program is to reduce the use of primary raw materials by 50% by 2030 and to become a 100% circular economy by 2050 (CEstakeholderEU, 2016).

Other countries are committed to implementing the circular economy as part of an overall long-term strategy for the economy, or sustainable development or energy development. At the same time, at the European level, the implementation of strategies or action plans for the circular economy is achieved through a process of consultation of all stakeholders being coordinated by the central public environmental authority. For example, in Spain, in this regard, inter-ministerial working groups have been set up to implement the concept of the circular economy. Also, in 2017, the Italian government published a strategic document on the circular economy, which is accompanied by a “manifesto” of support signed by several private companies. In Finland, the national plan for the circular economy was adopted in 2017, which started the development of regional plans for the circular economy. In 2018, France adopted a roadmap on the circular economy. This approach has stimulated the emergence of strategies at regional and local level (for ex., the Paris Circular Economy Plan) (ADEME, 2017).

The following are the pillars of the circular economy national strategy. The goals of the policy framework aim at creating environmentally friendly and circular businesses, sustainable resource management, here the focus is on waste and responsible consumption, including the prevention of food waste (figure 2).

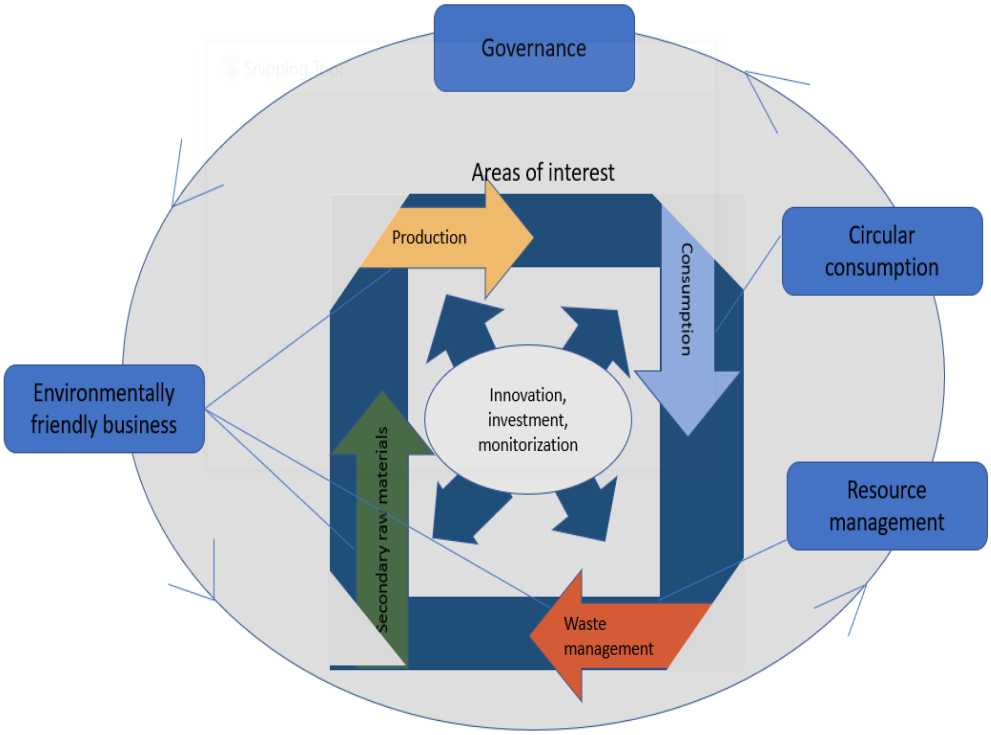


**Figure 2. The pillars of the Circular economy national strategy**

Source: made by authors

Sustainable resource management practically aims to increase their efficiency, review value chains, rational waste management, reuse of buildings and reuse of natural resources, which involve activities such as: development of methodologies for assessing the sustainable use of soil and land resources; development of agricultural works systems adapted to soil and climate conditions; rural development, etc. Solutions should be forward-looking, incorporating risk prevention issues, such as anticipating climate change (increasing the risk of floods) or gradually reducing dependence on fossil fuels. Representatives of local authorities have responsibilities in adopting some effective waste management plans, but also in encouraging partnerships with industrial and business environment, as well as with citizens, in order to find solutions for minimizing the amount of waste generated, facilitating their recycling and recovery.

Organizations have a crucial role to play in implementing the principles of the circular economy by adopting environmentally friendly business style, for example by developing products and production technologies that minimize the amount of waste generated. What does that mean? The product must be designed in such a way that its impact on the environment is minimal over time throughout the life cycle. For example, by promotion at the state policy level of industrial symbiosis (clusters, innovation parks, business incubators, knowledge-information exchange platforms) on the activities undertaken, which have an impact on the environment.

Within the circular consumption pillar the target is the citizens. Efforts should be directed towards support campaigns for sustainable food consumption, discouraging excessive use of resources, prevention of waste generation, reuse and recycling activities, prevention of food waste, etc. (BMUB, 2016).

As with any strategic project, key stakeholders should be involved from the very beginning. Thus, public authorities have important roles in creating and implementing the legislative framework with strategic objectives. They can initiate the transition to a more circular economic model by removing political and administrative barriers, facilitating cooperation and innovation along the value chain, and stimulating initiatives in favour of the circular economy. In most cases, ministries or agencies responsible for environmental issues are key players. In other cases, public authorities collaborate directly with another initiating organization. For example: the Finnish national strategy is

coordinated by an innovation fund created by the Finnish Government; The strategy for Glasgow, Scotland, is issued by the Chamber of Commerce in cooperation with a local association (CestakeholderEU, 2016). Public authorities can bring together broad networks of actors to build inclusive partnerships, reflecting all aspects of the value chain

Businesses need to be involved throughout reforms to identify sectors of interest and to identify the most relevant opportunities and barriers to the circular economy in each sector of interest identified. Businesses are the driving force of the circular economy, they are the ones who need to be involved in strategic partnerships and later they will be the main implementers of projects based on the principles of the circular economy.

Citizen participation is also very important, as citizens can participate in public consultations. Generally, civil society promotes a paradigm shift. Members of the civil society organization have objectives and responsibilities of general interest and can act as mediators between public authorities and the population. The development of the Paris Strategy for the Circular Economy included, for example, extensive consultations in the form of open forums, in order to defend the main focuses. Other strategies suggest indirect involvement of citizens in development and implementation. Civil society organizations are perceived as co-developers and co-creators of strategies, they have important roles in implementing local projects by attracting foreign investment.

In the end, the role of research organizations and universities is also crucial. In many countries, some strategic policy documents recognize that research and innovation (R&I) are important drivers of economic growth. Various support tools for research and development can be promoted, from grants to stimulate research projects, to innovative start-up incubation systems and university-industry collaboration schemes.

The analysis of the European experience allowed the highlighting of some categories of policy instruments promoted by Governments to stimulate the transition to the circular economy. First of all, these are regulatory tools that are very effective in obtaining strategic targets, or specific results: regulations focused on recovery and reuse of resources, regulations on limitation, incineration, waste disposal, regulations on facilitating the formation of sharing platforms for the population and the private environment, regulations to promote circularity in sustainable public procurement.

Other instruments are prohibitions imposed by law and economic and fiscal incentives. Governments have policies at their disposal to make resources more efficient. The first and best known is the stimulation of separation and collection systems that minimize recycling and reuse costs (eg deposit-recovery systems).

As an instrument that promotes waste limitation and incineration can be mentioned the example of Spain, the region of Catalonia where the tax for waste storage and incineration was introduced, with criteria for refunding taxes for municipalities - Waste disposal tax with refund criteria. Landfill and incineration taxes have increased the costs of these types of waste treatment, while encouraging the implementation of separate collection of all waste streams (information provided on the web side of Waste Agency of Catalonia).

In order to encourage the transition to a circular economy, governments need to create the conditions that stimulate and accelerate the process. A comprehensive package of systemic incentives is required for companies to implement circular models. Incentives can be in the form of sustainable public procurement programs, taxes, fees, premiums, and innovation grants. Governments could increase resource taxes, as well as consumption and pollution costs.

Of course, any reform needs to be monitored as it is implemented and the results need to be evaluated. Tracking the degree of implementation of the circular economy in any country can be monitored, for example, by reducing resource consumption per GDP and increasing the degree of recycling or recovery of waste. Consideration could also be given to adopting the monitoring framework on the circular economy proposed by the European Commission, which includes 10 indicators, respectively (Eurostat, 2018c): self-sufficiency of raw materials for production in the EU; green public procurement (as an indicator of funding issues); waste production (as an indicator of aspects related to consumption); food waste; recycling rates (share of waste that is recycled); the contribution of recycled materials in meeting the demand for raw materials; trade in recyclable raw

materials between EU Member States and the rest of the world; private investment, number of jobs and value crude added; patents on recycling and secondary raw materials (Eurostat, 2017).

Conclusions. It is difficult to find the best model for the transition to the circular economy, because local context development is a key factor. However, there can be given some general public policy recommendations for the transition to a circular economy, as a result of analysing the foreign experience:

- Political commitment to the promotion of the circular economy is important for rising the awareness of the urgent need for starting the rational use of resources.
- At national level, it is necessary to create a national committee, which would be responsible for the development of the circular economy legislative framework. Foreign practice suggests that the Ministry of Environment is in fact the institution responsible for forming the policy of transition to the circular economy with an initiating role. The elaboration of an adequate legislative framework for the circular economy can be achieved by setting up an intersectoral working group through public consultations with different actors, especially the private environment.
- Development of a national strategy with a comprehensive roadmap for the coming years for the transition to the circular economy should define a long-term vision of the processes of the circular economy with long-term objectives. At the same time, time horizons must be aligned with other national or international strategic targets or initiatives. Also, the development of circular economy plans at the local or regional level, with roadmaps with well-established milestones and objectives should be elaborated.
- Implementation of a national platform for the promotion and implementation of the circular economy, consisting of representatives of the public sector, the private sector and civil society. Industrial symbiosis platforms or other initiatives in this regard can also be good examples practice and increase competitiveness at the level of other sectors of activity.
- Providing funding, at national level, for the synergies of the circular economy with other sectors of activity.
- Governments should establish waste-related statistics that are reported at local, regional, and economy-wide aggregated levels and stored in a transparent database accessible by all stakeholders.
- Promoting a process of dynamic interaction between the research sector and the public environment to identify the strategic sectors, barriers and develop problem solution strategies.
- Promoting education for sustainable development at all levels of education, including non-formal and informal education, with a focus on strengthening and / or promoting partnerships in the area of education on the circular economy, the green economy, sustainability and the bioeconomy.

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