

Circular Business Models – An Efficient Tool for the Cooperative Ecosystem

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Abstract

Cooperatives constitute an important force for economic growth and social cohesion. They penetrate all economic and tertiary sectors, they are recognized as successful businesses in which community concerns come first, and they can respond promptly to societal challenges. Although cooperatives and other social economy enterprises were among the first to engage in circularity, the current challenges call for the transformation of production and consumption models applied in this sector to ensure sustainable development. This article contains a study on the importance and opportunity of the transition to the circular economy, international policies in supporting cooperatives in this transition path, the implications of consumer cooperatives in the Republic of Moldova in circularity (made based on a survey of cooperative entities), as well as the argumentation of some proposals which would facilitate the development of national and sectoral policies in support of the circular economy (fiscal, investment, educational, etc.), the implementation of sustainable production and consumption strategies and models in the cooperative sector, the reconsideration of activities promoted through the prism of economic, social and environmental sustainability.

Keywords: circular economy, sustainable model of consumption and production, cooperatives, sustainable development

1. INTRODUCTION

Humanity faces major challenges related to environmental degradation and the reduction of human well-being, which endanger the further existence of humanity. The UN Secretary-General mentioned that "By adopting the 2030 Agenda, world leaders recognized that the current trajectory of economic development has not led to shared prosperity for all, but to high and rising inequalities in many countries, the climate crisis, and unsustainable consumption and production patterns. These consequences have taken a toll on social development and people's well-being, especially among the most vulnerable" [1]. It is estimated that if we continue to exploit resources at the current rate, by 2050 we will need the resources of three planets Earth [2].

This requires the reconsideration of current consumption and production models, especially to achieve Sustainable Development Goal 12 and ensure the well-being of the population and long-term planetary security. To promptly respond to these challenges and changes, joint and synergistic efforts are needed from all parties involved (authorities, economic agents, consumers, and society as a whole). Governments, businesses, and all citizens should work together to increase resource efficiency, reduce waste and pollution, and shape a new circular economy.

The role of cooperatives in achieving this objective is very relevant due to their omnipresence, the diversity of promoted activities, the degree of employability, the number of people involved (employees, beneficiaries, consumers), but also the values and principles on which their activity is based.

Noteworthy authors and organizations in this field include the International Cooperative Alliance, the United Nations Research Institute for Social Development, Professor Stefano Zamagni, and Dr Rory Ridley-Duff [3,4]. Relevant research can be found in academic databases such as PubMed and ScienceDirect, as well as publications from government agencies and NGOs focused on sustainable development and cooperatives.

2. METHODOLOGY

The information needed to carry out the study was collected through direct and indirect research. For this purpose, a variety of classical research methods were used: analysis (quantitative, qualitative), synthesis, induction and deduction, empirical observation, field analysis, survey method, comparative analysis method, the principle of logic, as well as various tools of representation of materials obtained from research.

In the framework of the research, we studied the informative resources in the field of circular economy, cooperatives, and sustainable development, reflected in the works of researchers from the country and abroad. At the same time, international policy documents were analysed in the field of supporting the circular economy and supporting the integration of cooperatives in circularity, as well as national cooperative policies.

In order to analyze the attitudes and future visions regarding the integration of cooperatives in the circular economy, a survey was conducted among cooperatives and cooperative enterprises in the Republic of Moldova, using as a tool the questionnaire, based on a probabilistic, stratified, random sample, respecting the regional criterion and the sphere of activity of the enterprises. Scientific research included the processing of collected data, their analysis and interpretation.

3. RESULTS

3.1 The replacement of linear economy by circular economy – the strategic pillar for sustainable development

The current development of humanity faces multiple challenges that endanger the further existence of Earth and humanity. Dependence on natural resources is increasing. According to The Sustainable Development Goals Report 2022 [5], the total consumption of materials has increased globally in just one year (2020) by more than 65%; 13.3% of the world's food is lost in the period after harvesting and before reaching the retail market; 17% of all food is wasted at the consumer level. The globe is based almost exclusively on virgin materials. More than 90% of materials are either wasted, lost or remain unavailable for reuse for a long time as mentioned in The Circularity Gap Report 2023 [6].

All this proves that the current economic system and linear economic models, based on the principle of "use-produce-consume-throw", lead to the waste of natural resources and excessive pollution of the environment by producers, distributors, but also by consumers. Contemporary challenges require changes in existing patterns of production and consumption to ensure a safe and secure future for the inhabitants of Earth and the Planet.

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The circular economy has become a desirable and alternative approach to the traditional economy. According to contemporary concepts, the circular economy is a model of production and consumption, *which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products for as long as possible. In this way, the life cycle of products is extended.* Thus, the life cycle of products is extended, and waste is reduced to a minimum. This concept requires a paradigm shift in the approach to production and consumption in the economic system, which incorporates environmental sustainability. The circular economy is based on the following pillars: materials are cycled at continuous high value; all energy is based on renewable sources; biodiversity is supported and enhanced through human activity; human society and culture are preserved; the health and well-being of humans and other species are structurally supported; human activities maximize generation of societal value; water resources are extracted and cycled sustainably [7]. The graphic model of the circular economy is presented in several sources [8, p.24; 7].

The circular economy recognizes a combination of multiple business models that extend beyond recycling to support resource efficiency through reduction and reuse. *Five main circular business models* are known: circular supply; resource recovery; product life extension; sharing platforms; and product as a service (Figure 1) [10], although other methods are also identified in some research. Each of these changes the pattern of product and material flows through the economy, helping to reduce negative environmental side effects.

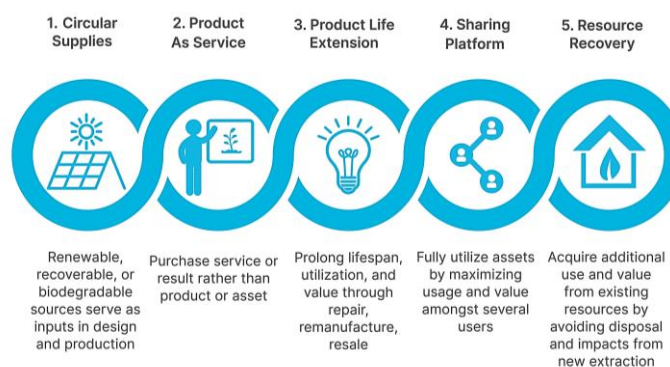


Fig.1. Five business models of circularity [10].

The implementation of circular models has become a major goal for the economic system and the further existence of mankind. This is why in 2021 the European Commission set itself the target of reaching a completely circular economy by 2050 [9]. To transform the current economic model into a cyclical one, a series of measures are recommended, based on the principle of the 9Re-: refusal of consumption, reduction, reuse, repair, reconditioning, restoration/remanufacturing, reuse, recycling, reduction by design [12].

The transition to the circular economy generates major benefits:

- the creation of more efficient and sustainable products, which would help reduce the consumption of energy and resources (it is estimated that over 80% of the environmental impact of a product is determined in the design phase [11]);
- reduction of dependence on raw materials (net resource expenditure in the EU will be reduced by 600 billion Euros annually until 2030 through the development of the

circular economy, bringing total benefits estimated at 1.8 trillion Euros annually, taking into account the multiplier effects [11]);

- increasing the number of jobs and employability (it is estimated that 700,000 jobs could be created by 2030 in the EU alone [11]);
- savings for consumers as a result of rational consumption and product reuse;
- encouraging economic growth (the transition to the circular economy would facilitate GDP growth from 1 to 7 percentage points by 2030 in the EU [13]);
- stimulating innovation in various economic sectors due to the need to redesign materials and products for circular use;
- fighting hunger and ameliorating environmental problems by preventing and reducing food waste (in the EU, it is planned to halve food waste per capita at retail and consumer level by 2030 [15]);
- organizing new businesses and jobs in the field of resource recovery, repair, and remanufacturing;
- increasing the competitiveness of organizations, products, and services on a domestic and international level, etc.

According to some estimations of the United Nations Industrial Development Organization (UNIDO), around \$1 trillion could be saved in materials under circular business models by 2025 [16].

Thus, the Circular Economy is a new way to create value and ultimately prosperity. Although the importance and opportunity of the circular economy are obvious, the transition to a more circular economy faces certain challenges and barriers [14], among which are the following: *economic* (lack of key economic factors to encourage the efficient reuse of resources and integration in value chains of producers and recyclers); *financial* (considerable transition costs); *skills* (a circular economy requires technical skills that are currently not present in the workforce); *governance* (actions and policies are needed at all levels and areas of governance); *consumer behaviour and business models* (consumers have little knowledge of the potential benefits of a circular economy and the models it entails, as well as the personal contribution they can make to sustainability).

To create a *fully circular economy*, circularity and sustainability must be introduced at all stages of the value chain, from design to production and finally to the consumer. Consumer behaviour but also the adoption and implementation of business models that facilitate circularity in relations with consumers can substantially influence the speed with which one can transit to a truly circular economy.

3.2 The contribution and integration of cooperatives in circularity

In international policy documents – UN Resolution A/RES/76/135 "Cooperatives in social development" (2021); UN Resolution A/77/L.60 "Promoting the social and solidarity economy for sustainable development" (2023); EC Communication "A new Circular Economy Action Plan For a cleaner and more competitive Europe" (2020); EC Communication "Building an economy that works for people: an action plan for the social economy" (2021); Policy brief on "Making the most of the social economy's contribution to the circular economy" (EU and OECD, 2022) and other policy documents recognize that the social economy, including cooperatives, had a pioneering role in circular practices and sustainable business models for

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decades and it is recommended that Governments focus on supporting cooperatives as sustainable and successful business enterprises. Thus, cooperatives are recognized as having a leading role in incorporating the circular economic model into their businesses.

Cooperatives have become an important actor in socio-economic development. The economic crises they went through proved that they could mobilize and respond promptly to the contemporary global challenges of sustainable development. Cooperatives are specific organizations that place people before profit. They are distinguished by their dual nature, based on an economic and a social component, ensuring a balance between economic activities and social and environmental concerns.

Being recognized as the main actors of the social economy, of occupational and inclusion policies, cooperatives can be actively involved and can make a major contribution to the development of the circular economy, thanks to the following:

- basing the activity on principles, values and ethics in which generally human values prevail;
- omnipresence on the geographical dimension (local, regional, international, global);
- the harmonious combination of economic and social activities for the benefit of its members and communities;
- the diversity of economic activities, covering the most varied fields of activity (production, agriculture, trade, banking, insurance, pharmaceutical, forestry, renewable energy, etc.) and social ones (education, employability, concern for the community);
- the diversity of types of cooperatives (producer cooperatives; consumer/user cooperatives; worker cooperatives; multi-stakeholder cooperatives [17]), etc.

The system of cooperatives can be considered one of the most numerous and organized economic-social systems in the world. According to ICA data [18], approximately 3 million cooperatives are registered globally. About 12% of the world's population are members of a cooperative. Cooperatives offer job opportunities for 10% of the employed population. Cooperatives at the European level also have a relevant role. CoopsEurope (the regional subdivision of ICA) includes 141 million members, 4.7 million employees and 180,000 enterprises. Cooperatives in Europe generate activities, sustainable development, innovation, social links and cohesion in territories as well as economic growth [19].

Only if each cooperative adjusts its activities and models of production and consumption to contemporary challenges through the lens of sustainability, and each member of the global system of cooperatives changes its attitude and consumption behaviour in the context of circularity perspectives, this will already constitute a potential enormously for sustainable development.

As organizations based on values and guided by honest principles, cooperative enterprises are by nature a sustainable and participatory form of business. This is also found in the development strategies of cooperatives globally. A People-Centred Path for a Second Cooperative Decade. 2020-2030 Strategic Plan (adopted in 2020) [20] which is a continuation of the first Blueprint for a Co-operative Decade. 2020 Vision (adopted in 2013), expanded the development vision of cooperatives, establishing, among the three targets to be achieved, that the co-operative form of business become the acknowledged leader in economic, social and environmental sustainability.

Circular business models and cooperative business models are mutually integrable. Therefore, cooperatives are present in various segments of the circular economy, such as the generation of sustainable electricity and its distribution to consumers; ecological design ("eco-design"); recycling waste and materials and generating renewable energy; extending the life of products; waste collection and sorting; packaging management and packaging waste reduction; informing and educating consumers, members, employees of cooperatives, training them in circularity, etc. During a seminar recently organized (14 November 2023) by EuroCoop (an organization that associates 7,000 co-op enterprises at the European level) with the generic "Consumer Co-ops: Sustainability Frontrunners in Times of Crisis" member organizations' practices in the field of food and sustainability were spotlighted [21].

Thus, cooperatives can play an important role in the development of a circular economy. The transition to the circular economy offers openness to business models that maintain the value of products and materials as long as possible and reduce the amount of waste; offers savings for citizens and contributes to increasing the quality of life; generates the creation of new businesses and jobs at the local level.

3.3 Moldovan consumer cooperatives - for sustainable development

Cooperatives in the Republic of Moldova are an important actor in the national economy, due to their impact not only economically, but also socially. In the Republic of Moldova, on January 1, 2023, the number of cooperatives was 2,212 or 1.8% of the total number of enterprises registered in the country (on January 1, 2013 – respectively 2,496 cooperatives and 2.4%). Although their number is not so great, they remain the only economic entities that share and promote economic activities in tandem with social values. Traditionally, the consumer cooperative carries out its activity mainly in the rural environment, offering a wide spectrum of activities and serving not only its members (approx. 120 thousand people) but also the entire population in its area of activity (over 57% of the country's population).

The system of cooperatives in the country, basing its activity on international cooperative principles, has always opted for a sustainable economy. Thus, the Strategy for the development of consumer cooperatives in the Republic of Moldova in the period 2020-2023 "Cooperatives for innovative development", establishes as a strategic vision "the innovative and intelligent development of the consumer cooperative as a unitary, efficient, sustainable and sustainable, competitive system on the internal and external market, which ensures the well-being of its members and employees, of the population served, but also *the protection of the environment through integration into the circular economy*" and highlights one of the future development opportunities - the reorientation of the cooperative system towards the circular economy and the green economy.

Considering the importance of cooperatives for promoting sustainability, a study was conducted on *the involvement of the sector of consumer cooperatives in the Republic of Moldova in the circular economy*. For this purpose, we conducted a survey addressed to cooperatives to obtain relevant information about the current participation of cooperatives and their entities in the circular economy system and to outline future strategies in this field. Approximately 25% of all cooperative entities participated in the survey, i.e. it is a diverse and representative sample, which gives credibility to the survey results.

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The results of the survey were interesting, both in terms of the perception of the circular economy, as well as the perspectives of circularity integration of cooperative entities. We will present some of the most relevant survey results:

- 71.4% of the respondents are familiar with the concept of circular economy, and 94.6% - believe that the transition from the linear economic model to the circular economic model is imperative;
- the circular economy, in the view of the respondents, is associated with recycling and waste recovery - 21.4%, with an efficient and sustainable production and consumption model that protects the environment - 25%, 21.4% - with a new business model which pursues the full use of resources, 21.4% - with an economic system that integrates production and consumption with the natural environment, 7.1% - with renewable energy;
- 85.7% of the respondents believe that the responsibility for the implementation of the circular economy system rests with all parties involved in the development of legislation and policies, production, consumption, information and education;
- 78.6% of survey participants do not sort waste and only 14.3% stated that they do so within their entities;
- 67.9% of the respondents cannot hand over the sorted waste to the waste collection/utilization units (because the waste collectors do not separate them, but collect them mixed) and only 14.3% of the respondents stated that they can hand over the waste selected to authorized collection units;
- 53.6% of the respondents indicated that their entity does not collect reusable packaging (such as pallets, cardboard boxes, plastic crates, glass, etc.), from their professional activity, to return them to manufacturers/distributors, while 46.4% stated that they do; at the same time, 92.9% of them mentioned that they do not collect reusable/recyclable packaging from the population/consumers, the main reasons being insufficient resources - 48.1% and the lack of opportunities to hand them in - 37%;
- 39.3% of those questioned rated the collaboration with producers/distributors on the value chain dimension in view of the transition to the circular economy as weak; 14.3% considered collaboration to be very poor, suggesting that there is a significant lack of involvement and commitment from manufacturers/distributors, and 17.9% indicated a complete lack of interaction and cooperation with manufacturers/distributors;
- all respondents indicated that their entity does not offer after-sales services, such as repairs, reuse, etc.;
- 92.9% of respondents indicated that their company did not organize campaigns or actions to raise awareness among consumers regarding the importance of rational consumption, reducing food waste, recycling or returning packaging and surplus products (the main reason being the lack of financial resources - 63%);
- 64.3% of respondents mentioned the lack of specific strategies or actions within their entity in the field of applying circular business models, while 21.4% of respondents stated that some objectives regarding sustainability and integration in the circular economy are included in the development strategies of the cooperative/enterprise;
- regarding the most suitable circular business models, the majority of respondents (39.3%) believe that the circular consumables model is the most suitable for them;

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35.7% - expressed themselves in favour of the waste recovery/reuse model; extended product life cycle - was preferred by 17.9% of respondents; 10.7% of respondents opted for the product-to-service model and 10.7% - for the sharing platform model;

- most respondents (71.4%) indicated that their supply chain is not circular and only 10.7% answered affirmatively.

Thus, among the main barriers to the transition of cooperatives to the circular economy system can be mentioned: the insufficiency of financial resources; lack of technological and technical solutions for capitalization; lack of adequate and clear information on the circular economy; lack of competent staff; training limits in the field of circular economy.

It should be noted that the Moldovan consumer cooperative carries out multiple activities, such as retail and wholesale trade; purchase of agricultural, animal and other products; their processing; and provision of various services, including educational, market, and public food services. At the same time, it needs to be emphasized that, traditionally, the cooperatives' activities included principles of circularity until two or three decades ago (centralized distribution, which reduced environmental pollution; taking raw materials from the population, for example, wool, collecting seeds, medicinal plants, nuts and other; collection of packaging from the population and their return to distributors/processors; reuse of goods (second-hand or new) through specialized consignment shops; product repair and maintenance services, etc.). The transition to the market economy and fierce, often unfair competition, has changed the way businesses are organized so that currently most of these activities are not carried out.

We believe that the concept of circularity can be reintegrated into the system of consumer cooperatives on various dimensions of the economic circuit: product design and manufacture (product design based on circularity principles, the inclusion of recyclable materials, designed to be ready for disassembly, repair, remanufacturing and recycling), distribution (logistics more reliable, cost-effective and carbon-neutral), commercialization of goods (use of environmentally friendly commercial technologies), after-sales services (repairs, collection of reusable products, sorted collection of waste, etc.), cooperation with external producers/distributors and with consumers to optimize the value chain and minimize the impact on the natural environment while creating renewable value for customers. Particularly important in this context is the transition to the use of renewable sources at all stages of business processes. All this requires the reconsideration and reconfiguration of business models applicable in the cooperative sector, as well as the identification of ways of integrating them into the circular economic circuit at the national and international level in order to amplify the synergistic effect of circularity actions and to scale the circular business models.

Based on the study, it can be concluded that the sector of consumer cooperatives can play an important role in the integration of the circular economy in the economic system and in facilitating the transition from a linear economic model to a circular one. At the same time, establishing the circular economic system and ensuring environmental sustainability is a complex challenge and requires the collaboration and coordinated actions of all parties involved, including producers, processors, distributors, authorities, and consumers. The integration of consumer cooperatives from the Republic of Moldova into the circular economic system, in our opinion, requires:

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- the development and adoption of strategies in the field of supporting and promoting the circular economy at all levels of cooperative governance;
- the reconceptualization of commercial policies and marketing strategies, oriented towards rational consumption and increasing the durability of products, etc.;
- improving the infrastructure and strengthening the capacity for managing selected waste in cooperative entities, organizing waste recycling within the cooperative enterprise to support the circular economy and contribute to the protection of the environment;
- identification and implementation of the most suitable circular business models, specific to the nature of the promoted activities;
- returning to the practices of collecting and managing reusable packaging, which will contribute to the reduction of waste and the creation of a more sustainable system within cooperatives;
- the transition to a circular supply chain by optimizing material flows, identifying recycling and reuse opportunities, and developing partnerships with suppliers and other stakeholders;
- the organization of after-sales services within the cooperative units, which can contribute to extending the life of products and reducing the waste generated;
- cooperation with Consumer Product Banks (including food and agricultural ones), donating the surplus products, originating from the cooperative activity, on the one hand, and taking over other consumer goods to offer them to the population, especially the vulnerable, from its area of activity, on the other hand, or the creation of its own Bank to prevent food waste;
- implementation of consumer awareness and education programs to raise awareness of the importance of responsible consumption, encouraging them to adopt more sustainable behaviour in terms of consumption, waste management and environmental protection.

However, starting from the fact that consumer cooperatives are part of the national economic system, and the establishment of the circular economy involves combined efforts from all interested parties (business, authorities, consumers), the dynamism of the integration of consumer cooperatives in circularity requires urgent actions to all levels of governance and in all areas of activity influencing the transition to circularity. In this regard, appropriate policies and regulations are needed that could provide a legal and institutional framework for the promotion and implementation of the circular economy. Another objective aims to adopt appropriate policies to support circular economic activities. These government policies may include tax incentives, subsidies or financing for circular businesses, as well as support for the creation and development of the market for circular products and services. A special role belongs to financial institutions, development organizations and other entities, which can provide advice and financial resources for projects and initiatives that promote the circular economy. Since the sustainability and protection of the environment has become a cause and a responsibility of every inhabitant of the Earth, the promotion of education and information programs among consumers, citizens would contribute to increasing the level of awareness of environmental protection issues and would facilitate the change in consumption and attitudinal behaviour of their use of natural resources and raw materials.

The realization of these actions would facilitate the transition of consumer cooperatives in the country towards the circular economy, the implementation of circular business models, which will contribute to increasing the well-being of the population and the sustainability of the environment.

4. CONCLUSIONS

Cooperatives are essential to achieving sustainable development around the world. They are present in all areas related to the Sustainable Development Goals. Thanks to the principles and values on which the activity of cooperatives is based, the business cooperative model integrates perfectly into circularity and can bring an essential contribution to sustainable economic, social and environmental development.

The survey of cooperative entities from different regions and with various fields of activity highlighted the current situation and the perspective views of the respondents regarding integration in circularity. At the same time, this survey highlights the priority actions for the integration of cooperatives in the circular economy and the development of circular business models.

At the same time, the research offers valuable insights into cooperatives and circular economy integration in a specific national context but may have limited generalizability and depth in terms of industry-specific and temporal factors. Thus, the study's primary focus on the Republic of Moldova limits its applicability to other regions. The findings might not be directly transferable to cooperatives operating in different cultural, economic, or regulatory environments. Also, while the study covers various fields of activity, it may lack depth in addressing specific industry challenges. Different industries have unique dynamics and requirements for integrating into a circular economy, which may not be fully captured in a general survey.

To facilitate the transition of cooperatives to the circular economy in the Republic of Moldova, an integrated approach is needed, which includes education and awareness, financial and technological support, the development of human resource competence, supporting cooperatives through governmental and local public policies in the effort of full integration in circularity. The implementation of the actions grounded in this research and the constructive and effective cooperation along the value chains between all parties involved can offer enormous potential for the transition to and establishment of the circular economy.

Future research on cooperatives and their role in the circular economy could expand in several directions:

- Comparative studies across different countries would provide a broader understanding of how cooperatives globally can integrate into circular economies. Investigating specific industries in depth could reveal unique challenges and opportunities for cooperatives in diverse sectors.
- Longitudinal studies are essential to track changes over time and assess the long-term impact of strategies and policies.
- Research could also extend to assess the global applicability of the findings from the Republic of Moldova, providing universal insights.

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