

## AGRICULTURAL AND RURAL DEVELOPMENT IN THE CONTEXT OF A CIRCULAR ECONOMY IN THE EUROPEAN UNION AND FRANCOPHONIE STATES. CASE STUDY: ROMANIA

Aurelia-Ioana CHEREJI<sup>1</sup>, Irina-Adriana CHIURCIU<sup>2</sup>, Mihai SEBE<sup>3</sup>

<sup>1</sup>University of Oradea, Faculty of Environmental Protection, 26 Magheru Blvd, Oradea, Bihor County, Romania, E-mail: aurelia.chereji@uoradea.ro

<sup>2</sup>University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59 Marasti Boulevard, District 1, 011464, Bucharest, Romania, E-mail: chiurciu.irina@managusamv.ro

<sup>3</sup>Bucharest University of Economic Studies, Doctoral School of Economics and International Business, 11, Tache Ionescu Street, Bucharest, Romania, E-mail: sebemihai23@stud.ase.ro

**Corresponding author:** sebemihai23@stud.ase.ro

### Abstract

The paper presents the current situation as regards the circular economy in agriculture in Romania, while also taking into consideration its global impact. We have here a system globally endorsed by the United Nations. It is also important for regional organisations such as the European Union or la Francophonie as the circular economy seems to have a high number of advantages in tackling climate change, creating a sustainable food chain, improving the organic character of the agriculture, etc. From that perspective Romania represents an interesting case study as it is both a European Union member state and a member of the Francophonie. It thus follows both sets of rules and recommendations in order to improve its status. The paper uses the bibliographic method and reviews the main documents that settle this aspect and presents the legal framework for circular economy. The put into practice of the circular economy in the Romanian agriculture would bring a series of advantages (environment, food safety, etc.) while also requiring systemic transformations.

**Key words:** circular economy, European Union, Francophonie, Romania, agricultural sector

### INTRODUCTION

The concept of circular economy is not limited to the European area but rather has a global outlook given its importance. As described by the United Nations Organisation the key idea behind was “the goods of today are the resources of tomorrow at yesterday's resource prices” [25].

The working definition at the United Nations level is works form the idea that the circular economy “aims to minimize waste and promote a sustainable use of natural resources, through smarter product design, longer use, recycling and more, as well as regenerate nature”. It is a working interpretation that is meant to underline the fact that we cannot fight the climate change without using circular economy methods and means. It matters because now we can have a global working definition that can be used in both European and Francophonie states [26].

Another key relevant global actor in defining what circular economy is and whose activity help promoted it, is the Ellen MacArthur Foundation.

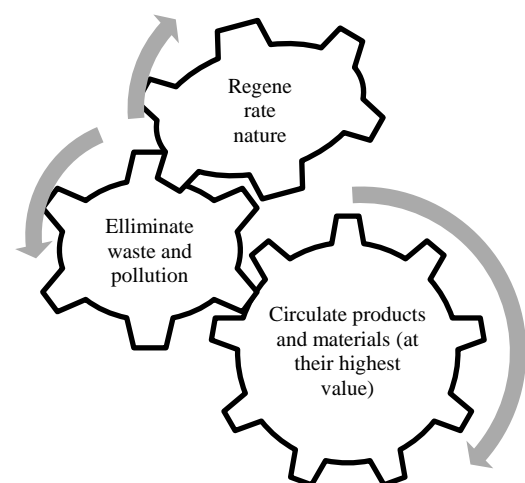


Fig. 1. The three principles of circular economy  
Source: own design after [12].

It has provided a key blueprint on what circular economy is and why it matters (Figure 1).

Given the global outreach and consequences we need also to move forward toward other states and see whether we can see the circular economy applied to other states outside the EU.

One such regional structure is represented by the Francophonie states and their immense untapped potential. They matter also because we have an overlapping between the some of the European Union Member States and the Francophonie states. When we speak about Francophonie we understand both the human side, of the over 320 million French speakers across the world and its institutional side with the International Organisation of La Francophonie. Also one of the mandates of the Francophonie is to foster economic cooperation in order to bolster sustainable development [20].

A key document for the entire Francophonie is its Economic Strategy for the Francophonie adopted in 2014 which underlined the need for an economic model that respects the environment, puts the individual to the center of sustainable economic development process and acknowledges the Sustainable Development Objectives [24].

Given the fact that most of the Francophonie member states are located in Africa and Asia, the need for them to create sustainable agricultural systems, where circular agriculture is a reality, due to the constant pressure of demographics and climate change, is a stringent one. If we take for instance the case of African states, we see that the concept of circular economy applies to the agricultural system matters but only if we have a reshape of the system in place. We need to have bottom-up strategies, easy to implement by local farmers, as well as financial investments and more education and capacity building. Also a better understanding of the traditional agricultural practices (such as agroforestry, crop rotation, etc.) may help its implementation [2].

Given the European Union twin transition green and digital, the topic of the circular economy became important in academia and public arenas.

A particular attention was given to the circular economy, an economic model “which

involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible” [10].

This would be put into use as at the European Union level we assisted to the discussion of the so-called CAP Strategic Plans. The Strategic Plans were meant to present the needed interventions for each country while also providing much needed solutions in order to reach the goals of the European Green Deal. The Strategic Plans are a map toward sustainable climate action, protecting natural resources, preserving biodiversity, as well as the enhancing the socio-economic fabric of rural areas. In fact, each Strategic Plan should provide the national response meant to facilitate the reach of the ten key objectives of the CAP [7].

The EU’s Action Plan of Circular Economy is an example of a European initiative that targets the entire life cycle of different products. Areas of interest include water, nutrients, food and, in addition to regional aspects, it also wants to ensure waste is reduced while achieving a global impact [9].

Functional waste system was an important element underlined at the European level. The management of the waste is a part of the circular economy and we cannot speak of any measures on that unless we find ways of better using all the resources. Recycling is both an answer to population growth, diminishing resources and geopolitical challenges [15].

Romania was selected due to its double characteristics, both as a European Union member state and a Francophonie state.

Romania had become an institutional member of the Francophonie as early as 1993 soon becoming a leading member within the Organisation with a high number of French speaking people. Moreover, French is the 3rd business language in the world and a great number of them being located in Africa (59% of the daily French speaking persons). The dynamism of the Organisation, the Declarations it has adopted as well as its variety of practices make it an ideal learning place to be for Romania, which shares some its challenges and may come up with some solutions [1].

The circular economy is becoming more and more relevant as it helps build a food system that helps people and nature prosper. If we want to maintain our biodiversity and tackle climate change, we need to reform the food system by using the principles of circular economy. It is an ongoing problem as the current food system is a system that needs reform due to a series of ongoing problems that affect it: more and more climate change generated extreme weather problems, population increase, water shortage problems, decrease of the quality of the available farming land, uncontrollable use of pesticides and other chemical substances (see Figure 2) [11].

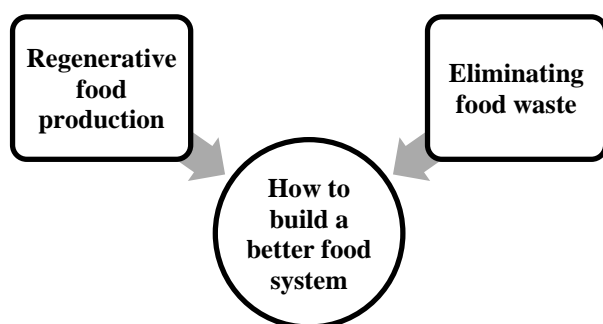


Fig. 2. The three principles of circular economy for food system  
Source: own design after [11].

It matters also for the fight against climate change as the global food system is estimate to account for a third of the total greenhouse emissions. Some researchers say that if we could implement the circular economy in the agriculture sector and especially in the food production area we can reduce these emissions by half. Surprisingly the cities can lead this transformative process if properly managed [6].

This paper intends to present the legislation in place in Romania (the main documents) while also presenting the advantages and the importance of circular economy in agriculture. Why it matters and why do we have to invest in are is the main questions of today in the field.

Starting from relevant documents on circular economy, the paper presents the European Union recommendations, good practices examples, etc. that would identify the potential evolutions of the agricultural and

rural development in the framework of a circular economy in the European Union and Francophonie states.

## MATERIALS AND METHODS

Circular economy represents a new way of doing business in the agricultural system that we should analyse and implement based upon other states experiences.

To analyse the information and provide an accurate representation the preferred method of choice was the use of desk research information. An analysis of the official documents in place in Romania (Ministry of Agriculture and Rural Development, Ministry of Environment, Water and Forestry) and abroad (European Commission, European Parliament, etc.) was taken into consideration to map the main references and identify the key data concerning the case of Romania.

The article mapped the main legislative documents related to circular economy from Romania as well as their connection with the agricultural sector.

We have had also a review of scientific papers, articles, studies and research between agriculture and circular economy.

The data are taken from the official websites of the Romanian Government and of the European Commission as well from other relevant academic sources.

Also we have done graphical representation of the information extracted from the consulted sources.

## RESULTS AND DISCUSSIONS

As regards Romania we need to have in mind first and foremost the fact that Romania has a lot of untapped potential and room to grow as regards circular economy.

Unfortunately, this is not due to rather general enthusiasm or well place structures in place but due to low national positioning in this domain (Figure 3). The National Strategy regarding the circular economy provides some key elements that define the impact of circular economy in agriculture and rural development that offer us a starting point for future iterations (see Table 1).

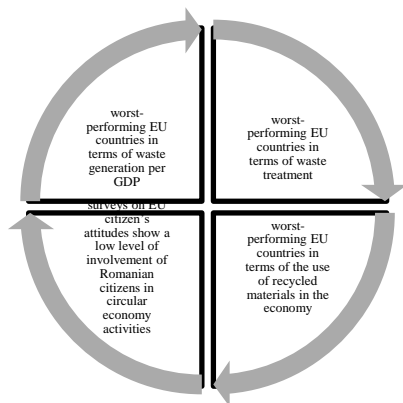


Fig. 3. Romania’s relationship with the circular economy  
 Source: own design after [8].

Table 1. Aspects regarding starting elements and identified problems

Starting elements	Identified problems
<ul style="list-style-type: none"> <li>- Agriculture, forestry and fishery represent a stable share in the economy (5% of GDP for 2010-2020).</li> <li>- Employment fell from 32% in 2010 to just 21% in 2020.</li> <li>- Approx. 16% of greenhouse gas emissions - agriculture, absorption net CO<sub>2</sub> - the forestry sector offsets – about 20% of emissions from other.</li> <li>- Intensive use of pesticides, herbicides and chemical fertilizers, and the inefficiency of irrigation systems result in loss of biodiversity, water pollution and soil quality degradation.</li> <li>- Intensive consumption of wood.</li> <li>- Loss of breeding grounds and habitats for birds and small game</li> </ul>	<ul style="list-style-type: none"> <li>- Low levels of use of sewage sludge, biological fertilizers or compost on agricultural land.</li> <li>- Deforestation and illegal cutting of trees.</li> <li>- No legislation to strengthen circular economy in the agri-food supply chain.</li> <li>- Inexistence of irrigation infrastructure.</li> <li>- Implementation of farm-to-consumer policies on inputs/factors of production such as seeds, fertilizers, machinery, reproductive material, etc. and outputs/production (processing of food and by-products).</li> </ul>

Source: own presentation after [8].

One of the first relevant documents as regards the relationship between circular economy and agricultural sector in Romania is the document called National Waste Management Plan of 2017 which provides a clear starting point. It matters because it includes a series of mentions to the type of wastes generated by agriculture, forestry and fisheries and a classification of these wastes while also setting up a series of key objectives in relationship with them (Figure 4).

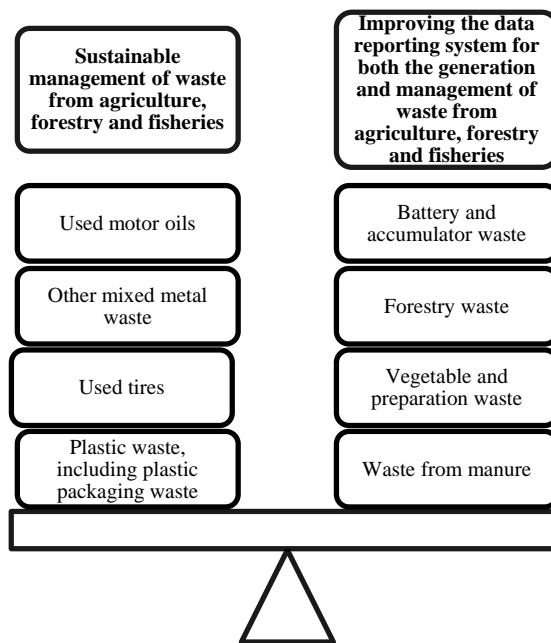


Fig. 4. Waste classification from agriculture, forestry and fishery and the two key objectives related to them  
 Source: own design after [19].

It matters as we are provided with an officially assumed classification of wastes and with the possible objectives to be addressed in relationship with them.

Given Romania’s need to secure a transition towards circular economy one of the earliest and most important documents that highlight this is Romania’s Sustainable Development Strategy 2030. It is a proof of the influence of the United Nations goals and objectives on Romania.

2030 Targets	Substantially increase the efficiency of water use in industrial, commercial, and agricultural activities; expand the rational reuse of treated and recycled water with a view to meeting the requirements of a circular economy  Gradually transition to a new development model based on the rational and responsible use of resources by introducing elements of the circular economy and drawing up a road map  Pursue the transition to a circular economy through complementary approaches involving traditional methods and the latest technologies in order to re-establish/rebuild natural capital and reduce dependence on synthetic fertilisers and pesticides, with a view to combating soil degradation
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Fig. 5. Romania’s Targets for 2030 in the area of circular economy in the agricultural system  
 Source: own presentation after [4].

This 2018 Strategy stipulates the fact that transitioning to the circular economy is a way to reach the 2030 setup goals.

That process also involved a series of measures that would have a direct impact upon the agricultural system as seen in the Targets established for 2030 (Figure 5).

All the above mentioned documents were put to use as the CAP Strategic Plan of Romania for 2023 – 2027 was discussed. In 2021 – 2022 the relevant national stakeholders discussed this Plan and how it should be tailored for the local needs given Romania's peculiarities.

First and foremost, the Plan emphasizes the complementarity with the National Recovery and Resilience Plan in relation to the importance of investments in developing the circular economy in the waste management schemes. Also the complementarity with the national Operational Program Sustainable Development (PODD) concerning the investments in water management are there. Another complementary programme is the LIFE project (circular economy and renewable energy).

Also mentions the financial support given for investments in the wine sector that support the circular economy. The circular economy investments are eligible for financing scheme dedicated to the young farmers / flower and medicinal plants farms / vegetable sector / (installations for energy production and organic fertilizers, etc.).

Circular economy investments constitute a criterion for prioritising investment projects in other areas of activity [18].

Circular economy is also about coordination. The Green Deal at the European Union level as well as the ambitious climate target require a high level of coordination between public national and European administration, the economy and the society. We need this coordination as circular economy not only focuses on the way things are done but also how and for what we do that instead of this.

The COVID-19 pandemic, the war against Ukraine have forced a speed up of this process. The implementation of the circular economy, like in the case of the Municipality of Almería (Almería, Spain) have shown that

alongside the entire life cycle of an agricultural product you also need to take into consideration the need to have efficient business models that may implement it correctly. It also requires strong technological research and investments in order to have the new technologies up and ready (for the management of livestock manure for instance). Last but not least education and training of farmers and consumers alike are of outmost importance. Raising awareness, taking use of the local capacities, alleviating major problems such as lack of knowledge and education, of regulatory guidelines, of technology are all essential for the built up of a relevant model for each community [5].

Circular economy also plays a key role in environment related issues. As the use of pesticides is becoming more and more controversial we started to realise the importance of recycling of pesticides in the agricultural eco-system in order to have healthier products. Romania has a high level of pesticide consumption, being in top 6 countries in the European Union as regards the consumption of pesticides. This should be correlated with the low level of organic farming (just 5% of the total agricultural production in 2019). Given that importance of collecting and recycling pesticides grew a lot and Romania can and may use this as an opportunity to enhance its circular economy activities [14].

This trend is also supported by other countries use of pesticides and the impact of circular economy on that use. For instance, in Spain the application of a circular economy as an alternative production model may represent a solution to prevent its uses and abuses, as well as it may prevent the presence of other chemical substances. The reutilisation of by-products as well as other techniques may indeed represent something useful [21].

The above mentioned documents only underline the fact that circular economy is of outmost importance for family farms, for instance. Some studies have shown that the family farms, tend to use all the resources they have, a circular economy characteristic. The fact that the small family farms rely on circular economy practices for their

survivability may also endanger the use of these practices due to the strong competition with larger local farms and abroad agricultural products that may or not may use circular economy methods but definitely they endanger those who use them currently [17].

Contrary to other European trends, Romania remains a country that promotes increased consumption of raw materials, in a certain period of time, while the EU average shows a relative decline. While the EU's raw material consumption fell by 11% between 2011 and 2020, Romania's raw material consumption increased by almost 53% during the same period. Simultaneously the circular material use rates indicator, which show how much recycled material is used decreased by approx. 46% between 2012 and 2021 [22].

When we speak about circular economy we also need to have in mind the circular economy - (agro)tourism due as they are an agent of change [16].

Circular economy is not a panacea for the problems of the agriculture. For instance, this is the case of the circular economy and of the problem generated by the rather short life cycle of food. In order for a farmer to be competitive he or she must be sure that their products reach the intended consumers in time, at the right quality and also that the products done through circular economy methods are commercially sustainable. We are dealing with factors such as the geographical differences between regions, the attitudes of consumers (would they pay more for products that are more expensive or would they contend with products that are produced locally, in a sustainable matter and therefore be less inclined in buying products from other regions / continents that are not necessary produced using circular agriculture more sustainable ways, etc.). However, a collaborative approach, education of consumers and knowledge and know-how sharing may tip the scale in time [13].

A possible solution for the Romanian agricultural system, given the above mentioned date about the share of the organic farming should be to identify and put into reality the best practice that by using circular economy in agriculture would led to the

unleashing of the potential of the integrated organic farming. This novel concept presupposes a reduced use of chemicals and the reuse of agricultural waste in order to create a system as close to the nature as possible [23].

We need to have in mind that in order to build our own model of circular economy in agriculture we need to keep an open eye to other best practices abroad, while using the structural funds available to us. We can create some additional scoring criteria for the financing of agricultural projects (Figure 6).

Additional scoring factors for proposals	promote options for prevention, recycling, disassembly, recycling of products in a sustainable manner by making the activities as small as possible <hr/> introducing a voucher type for companies that promote the circular economy through implemented projects <hr/> quantity of packaging waste, purchase of renewable energy products, bio-economy, etc.
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Fig. 6. Potential new criteria for financing circular economy projects in agriculture  
 Source: own design after [3].

Implementing circular economy is a process than as we see requires a concentrated effort on behalf of all the responsible structures, either governmental or private.

We need to have a full series of instruments in place to implement it, either financial, technical or legislative ones.

## CONCLUSIONS

Circular economy is an important aspect of today global economy as it helps reduce the costs and fulfil the climate goals as established by various global and European agreements.

As regards Romania we have just put into practice the main legislation strategic documents that would help us stimulate the circular economy in the agriculture and rural development sector.

The circular economy in this sector entails a process of ample transformations meant to

generate sustainable economic growth and environmental sustainability in our country. It is not a process limited solely to Romania but rather a European and global process. It presents important opportunities for the reduction of wastes, the elimination of pollution and for a better natural and human resources management.

The circular economy application also involves a reform of the structures in place and of the educational system. We need to incorporate the principles of the circular economy into the agricultural value chains as well into the educational system. Also a lot of investments should be done in the new technologies adapted to this new system.

## REFERENCES

- [1]Ambassade de France en Roumanie, 2021, La francophonie en Roumanie/ The French-speaking world in Romania, available at: <https://ro.ambafrance.org/La-francophonie-en-Roumanie-4588>, Accessed on 12.02.2024.
- [2]Boon, E.K., Anuga, S.W., 2020, Circular Economy and Its Relevance for Improving Food and Nutrition Security in Sub-Saharan Africa: the Case of Ghana. *Materials Circular Economy*, Vol. 2, article no. 5, <https://doi.org/10.1007/s42824-020-00005-z>.
- [3]Burlacu, O.S., Turek-Rahoveanu, M.M., Zugravu, C.L., 2020, Circular economy applied in the Romanian Society and Institutions - perspectives, innovation. *Scientific Papers. Series "Management, Economic Engineering in Agriculture and rural development"*, Vol. 20(1), 111-118.
- [4]Celac, S., Vladineanu, A., 2018, Romania's Sustainable Development Strategy 2030, Paideia Publishing House, Bucharest, 27-29. <https://dezvoltareurabila.gov.ro/files/public/10000001/Romania-Sustainable-Development-Strategy-2030-en.pdf>, Accessed on 14.02.2024.
- [5]Corral, F.J.G., Vázquez, R.M.M., García, J.M., de Pablo Valenciano, J., 2022, The Circular Economy as an Axis of Agricultural and Rural Development: The Case of the Municipality of Almócita (Almería, Spain). *Agronomy*, 12, no. 7, 1553, <https://doi.org/10.3390/agronomy12071553>.
- [6]Collacott, L., 2022, Transforming our food system can tackle climate change, and cities play a leading role. Ellen MacArthur Foundation online publication, 2022, <https://www.ellenmacarthurfoundation.org/cities-and-a-circular-economy-for-food/climate-article>, Accessed on 14.02.2024.
- [7]European Commission - Agriculture and rural development, 2024, CAP Strategic Plan, [https://agriculture.ec.europa.eu/cap-my-country/cap-strategic-plans\\_en#timeline](https://agriculture.ec.europa.eu/cap-my-country/cap-strategic-plans_en#timeline), Accessed on 16.02.2024.
- [8]European Commission - DG Reform, 2022, Circular Economy Strategy for Romania, [https://reform-support.ec.europa.eu/document/download/aa105e25-b9e6-464e-92af-7dcf39bbeb50\\_en?filename=CE%20Strategy%20RO\\_18072022\\_Final\\_EN.pdf&prefLang=pl](https://reform-support.ec.europa.eu/document/download/aa105e25-b9e6-464e-92af-7dcf39bbeb50_en?filename=CE%20Strategy%20RO_18072022_Final_EN.pdf&prefLang=pl), Accessed on 16.02.2024.
- [9]European Commission - Environment, 2024, Circular economy action plan, [https://environment.ec.europa.eu/strategy/circular-economy-action-plan\\_en](https://environment.ec.europa.eu/strategy/circular-economy-action-plan_en), Accessed on 16.02.2024.
- [10]European Parliament, 2023, Circular economy: definition, importance and benefits, <https://www.europarl.europa.eu/topics/en/article/20151201STO05603/circular-economy-definition-importance-and-benefits>, Accessed on 16.02.2024.
- [11]Foundation Ellen MacArthur, 2024, A circular economy for food would help people and nature thrive, <https://www.ellenmacarthurfoundation.org/topics/food/overview>, Accessed on 15.02.2024.
- [12]Foundation Ellen MacArthur, 2024, What is circular economy? <https://www.ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview>, Accessed on 15.02.2024.
- [13]Gkoutani, V.A., Tsoufas, G.T., 2021, Circular economy and food production systems: Tracing linkages and exploring synergies. *Scientific Papers. Series "Management, Economic Engineering in Agriculture and rural development"*, Vol. 21(2), 281-288.
- [14]Marcuta, A., Tindeche, C., Tudor, V., Carbarau (Smedescu), C., Smedescu, D., Marcuta, L., 2021, Application of the principles of the circular economy in conventional agriculture. Case study - Pesticide waste recycling. *Scientific Papers. Series "Management, Economic Engineering in Agriculture and rural development"*, Vol. 21(2), 375-382.
- [15]Marcuta, L., Panait, R., Marcuta, A., 2021, The relationship between the circular economy and sustainable waste management in European Union. *Journal of Business Administration Research*, Vol. 4(1), <https://journals.bilpubgroup.com/index.php/jbar/article/view/2709>. Accessed on 12.02.2024.
- [16]Marcuta, L., Onea (Stanciu), M.G., Marcuta, A., 2023, Analysis of the relationship between tourism and the circular economy: A critical review of the literature. *Scientific Papers. Series "Management, Economic Engineering in Agriculture and rural development"*, Vol. 23(3), 555-564.
- [17]Micu, M.M., Dumitru, E.A., Vintu, C.R., Tudor, V.C., Fintineru, G., 2022, Models underlying the success development of family farms in Romania. *Sustainability*, 14, no. 4, 2443, <https://doi.org/10.3390/su14042443>.
- [18]Ministry of Agriculture and Rural Development/ MADR, 2022, Romania's CAP Strategic Plan 2023-27 version 1.2, [https://www.madr.ro/docs/dezvoltare-rurala/2022/PNS\\_2023-2027-versiunea\\_1.2-21.11.2022.pdf](https://www.madr.ro/docs/dezvoltare-rurala/2022/PNS_2023-2027-versiunea_1.2-21.11.2022.pdf), Accessed on 14.02.2024.

- [19]Ministry of Environment, Water and Forestry/ Ministerul Mediului, Apelor și Padurilor, 2017, The National Waste Management Plan of Romania, <https://www.mmediu.ro/articol/planul-national-de-gestionare-a-deseurilor/2419>, Accessed on 14.02.2024.
- [20]Organisation internationale de la Francophonie/ International Organisation of La Francophonie (OIF), 2024, The Francophonie in brief, <https://www.francophonie.org/francophonie-brief-1763>, Accessed on 12.02.2024.
- [21]Otero, P., Echave, J., Chamorro, F., Soria-Lopez, A., Cassani, L., Simal-Gandara, J., Prieto, M.A., Fraga-Corral, M., 2023, Challenges in the application of circular economy models to agricultural by products: Pesticides in Spain as a case study. *Foods*, 12, no. 16, 3054, <https://doi.org/10.3390/foods12163054>.
- [22]Rodino, S., 2023, Shaping Circular economy in Romania in the context of Green Deal. *Scientific Papers. Series "Management, Economic Engineering in Agriculture and rural development"*, Vol. 23(1), 683-690.
- [23]Selvan, T., Panmei, L., Murasing, K.K., Guleria, V., Ramesh, K.R., Bhardwaj, D.R., Thakur, C.L., Kumar, D., Sharma, P., Digvijaysinh Umedsinh, R., Kayalvizhi, D., Deshmukh, H., K., 2023, Circular economy in agriculture: unleashing the potential of integrated organic farming for food security and sustainable development. *Frontiers in Sustainable Food Systems*, 7, 1170380, <https://doi.org/10.3389/fsufs.2023.1170380>.
- [24]Service des conférences internationales de l'OIF/OIF International Conference Service, 2014, Stratégie économique pour la Francophonie / Economic Strategy for the Francophonie. XV<sup>e</sup> Conférence des chefs d'État et de gouvernement des pays ayant le français en partage. Dakar, Sénégal, les 29 et 30 novembre 2014, [https://www.francophonie.org/sites/default/files/2019-10/sommet\\_xv\\_strategie\\_economique\\_2014-2.pdf](https://www.francophonie.org/sites/default/files/2019-10/sommet_xv_strategie_economique_2014-2.pdf), Accessed on 10.02.2024.
- [25]United Nations Conference on Trade and Development/ UNCTAD, 2024, Circular Economy, <https://unctad.org/topic/trade-and-environment/circular-economy>, Accessed on 18.02.2024.
- [26]United Nations Development Programme/UNDP, 2023, What is circular economy and why does it matter?, <https://climatepromise.undp.org/news-and-stories/what-is-circular-economy-and-how-it-helps-fight-climate-change>, Accessed on 18.02.2024.