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Is the Romanian organic grains value chain able to sustain the European Green Deal targets?

Este lanțul valoric romanesc al cerealelor ecologice capabil să susțină țintele Pactului Verde European?

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ABSTRACT

Romania ranks among the top five cereal producers in the European Union, with an important organic grain sector. Currently, the existing research on organic value chains is relatively sparse. Furthermore, the geographical scope of the existing literature is often narrow, with limited attention to Eastern Europe, especially to Romania. Moreover, understanding the barriers of the organic value chain in line with the European Green Deal's ambition of certifying 25% of agricultural land as organic is also not properly addressed in the current literature. This study advances current knowledge by meticulously mapping the value chain structure in a multi-actor approach, aiming to identify governance issues and pinpoint barriers alongside potential solutions to maximise the contributions of the Romanian organic cereal sector to the EU Green Deal targets. Data was gathered through 30 semi-structured interviews with key stakeholders in the entire value chain. A content analysis was employed to interpret and categorise the findings at different stakeholder levels. Results reveal that several transversal challenges for better grains organic sector development are: inconsistent legislative frameworks; low processing capabilities attributed to the low demand for organic products, and the lack of consumer confidence in organic products. Stakeholders propose several strategies to mitigate these challenges, including the implementation of consumer education initiatives, a focus on boosting domestic processing instead of relying on exports, legislative stability and the introduction of better-targeted financial incentives to support organic farming. All these results collectively hinder the likelihood of achieving the organic farming targets outlined by the EU Green Deal.

Keywords: barriers, mapping, organic grains, Romania, value chain analysis

REZUMAT

România, unul dintre primii cinci producători de cereale din Uniunea Europeană, deține un sector semnificativ al cerealelor ecologice. Înțelegerea structurii lanțului valoric este esențială pentru identificarea perspectivelor corecte de creștere, mai ales în contextul obiectivelor Pactului Verde European, care vizează certificarea a 25% din terenurile agricole pentru agricultura ecologică. Acest studiu depășește stadiul actual al cercetărilor prin cartografierea structurii, evidențierea guvernanței și identificarea obstacolelor și soluțiilor posibile pentru a evalua lanțul valoric al cerealelor ecologice din România. Datele au fost colectat cu ajutorul a 30 de interviuri semi-structurate cu actori importanți ai lanțului valoric, iar analiza de conținut a fost utilizată pentru prelucrarea datelor. Studiul evidențiază provocări majore, inclusiv legislația inconsistentă, capacitatea insuficientă de procesare și cererea slabă pentru produse ecologice pe piața internă. Pentru a aborda aceste probleme, părțile interesate propun campanii de educare a consumatorilor, promovarea procesării interne în detrimentul exporturilor și îmbunătățirea politicilor publice care vizează dezvoltarea lanțului valoric ecologic. Studiul a constatat că, deși lanțul valoric al cerealelor ecologice din România este relativ simplu, există o nevoie semnificativă de capacitate de procesare care limitează potențialul de creștere al sectorului și face mai dificilă optimizarea beneficiilor. Acești factori contribuie la șansele scăzute de atingere a obiectivelor Pactului Verde European în ceea ce privește agricultura ecologică.

Cuvinte cheie: bariere, cartografiere, cereale ecologice, România, analiza lanțului valoric

INTRODUCTION

A substantial increase in the global grain production is essential to meet the growing food demand of the global population in the coming decades (Mesterházy et al., 2020). As the world's population continues to expand and dietary preferences evolve (Pickett, 2013), the pressure on agricultural systems to enhance output and efficiency intensifies (Benton and Bailey, 2019). These challenges need innovative approaches to define new farming practices, improvements in crop yields, and advancements in technology to ensure a sustainable and sufficient supply of grains (Foley et al., 2011).

Organic farming represents a viable approach to sustainable food production (Reganold and Wachter, 2016). Organic practices not only yield better nutritious and healthy products but also allow enhanced environmental results (Çakmakçı et al., 2023). By eschewing synthetic chemicals and promoting biodiversity, organic farming helps maintain soil health, reduce pollution, and support better ecological balance landscapes (Kareem et al., 2022). Consequently, it contributes to both consumers' well-being and to the preservation of natural resources, aligning with broader sustainability goals (Sohail et al., 2021).

Despite its advantages, organic farming also has certain drawbacks. One important one is its tendency to produce lower yields compared to conventional farming, primarily due to restrictions on synthetic fertilisers and pesticides. This can lead to reduced efficiency, particularly in terms of land use (Kareem et al., 2022). Additionally, organic farming involves higher production costs, mainly because it requires more labour-intensive practices for pest control, weeding, and soil management (Jouzi et al., 2017). Consequently, organic products often come at higher prices, limiting affordability for lower-income populations (Huang et al., 2016). Furthermore, the transition to organic farming can be expensive, which may deter some farmers from adopting these methods (Sapbamrer and Thammachai, 2021).

The European Union, through the Common Agricultural Policy (CAP), encourages organic agriculture by offering additional financial support to farmers who embrace organic practices. As part of its commitment to greener agriculture, the CAP reform seeks to expand the coverage of the organic farming sector, supporting both climate actions and rural development goals (European Commission, 2024).

In Romania, the CAP offers financial support to organic farmers through Pillar I (direct payments) and Pillar II (rural development) (European Commission, 2023). The primary criterion for granting support is the certification of organic activities. Recognised certification bodies that rigorously evaluate and verify the organic practices manage this process. These bodies ensure that the activities comply with the organic standards and regulations (MARD, 2024).

In 2022, Romania accounted for 4.3% of its agricultural area certified as organic production, compared to 10.4% of the average in the European Union (Willer et al., 2024). The leading countries are Liechtenstein (43.0%), Austria (27.5%), and Estonia (23.4%) (Willer et al., 2024). This disparity illustrates that the goals set by the European Green Deal of having at least 25% of the land certified as organic by 2030 (European Commission, 2019) are rather difficult to reach for some Member States. Nevertheless, the organic grain sector has experienced substantial growth trends in recent years (Schlatter et al., 2021), fueled by rising consumer interest in sustainable and health-oriented food choices (Pickett, 2013). From 2013 to 2022, the area cultivated with organic cereals in the European Union increased by 73.9%. Austria has 18.52% of its organic land used for cereals, followed by Estonia (15.62%) and Sweden (12.26%) (Willer et al., 2024). In Romania, organic grains constitute an important sector, being the second-largest certified area after the semi-natural grasslands (MADR, 2022) (Figure 1).

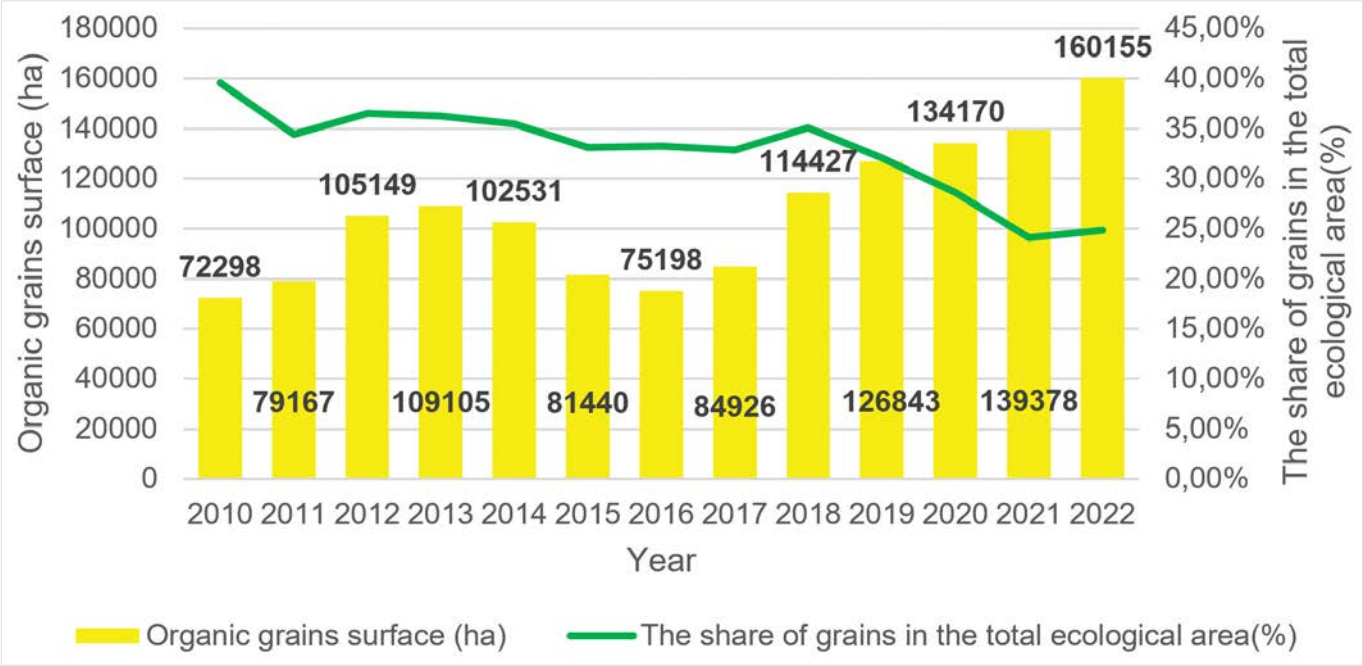

Figure 1. The dynamics of the area cultivated with grains in an organic system in Romania (MADR, 2022)

From 2010 to 2022, the area of organic grains in Romania exhibited a steady upward trend. There was a notable increase at the beginning of the period (2010-2013), followed by a significant shift from 2014, which was mainly influenced by the changes in public policies, particularly between the two funding CAP periods. After 2016, a substantial growth was observed, with a peak in 2022 when the organic grain area reached more than 160,000 hectares. These trends are mainly explained by the generous CAP organic subsidies (Brumă et al., 2024).

Romania secured the 3rd position in the EU organic cereal production in 2022, following Italy (911,379 tons) and Sweden (410,500 tons) (EUROSTAT, 2024). This emphasises Romania's significant role within the EU in terms of organic cereal production. While there has been a growth in organic farming area, with certified organic farmland increasing by 28% in recent years (MADR, 2024), its overall effect on grain production has been limited. Organic grains make up a minor share of the nation's agricultural output, largely influenced by foreign demand rather than local consumption (Dobrescu, 2019). The trend in organic grain production in Romania shows important fluctuations over time, as illustrated in Figure 2, primarily due to unfavorable weather conditions (Dobrescu, 2019).

The review of the scientific literature indicates that several previous studies have concentrated on the value chain analysis across various sectors of organic agriculture, including plant (Rieple and Singh, 2010; Winter et al., 2021), livestock (Padilla et al., 2020), and the broader agricultural context (Rawlins et al., 2018). Each of these research studies presents unique characteristics and dimensions, therefore, there exists a considerable diversity in results and methodologies. Thus, the research on organic agriculture value chains is relatively sparse, with a particular lack of studies focusing on the organic cereal sector. Furthermore, the geographical scope of the existing studies is often narrow, with limited attention to Eastern Europe, especially Romania, where such research is almost nonexistent. This gap in the literature, particularly regarding the market of organic cereals in Romania, highlights the novelty of the proposed research. By exploring this underrepresented area, the study contributes new insights and addresses a significant gap in current scholarly work.

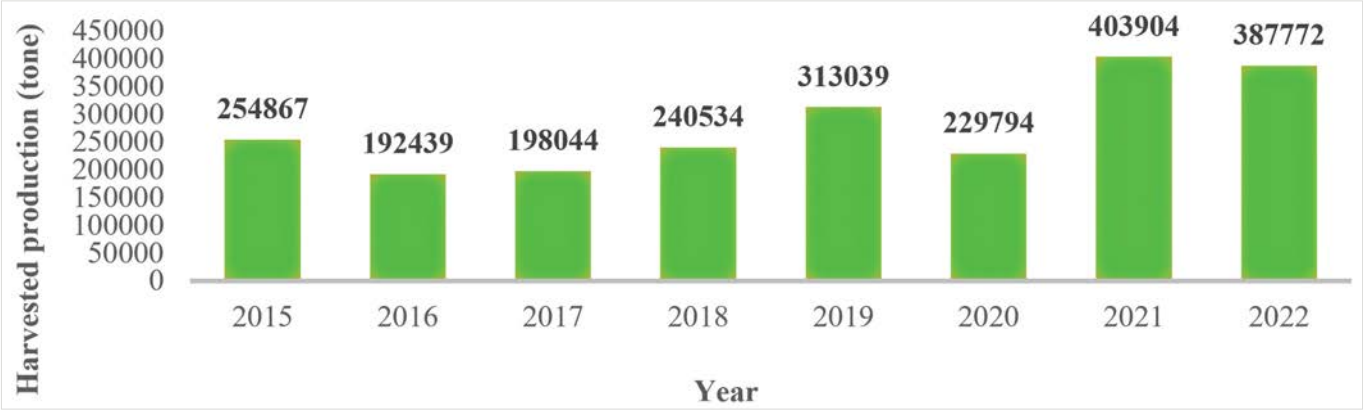

Figure 2. The dynamics of grain production in the organic system in Romania (EUROSTAT, 2024)

Recent studies have examined some trends in organic agriculture, particularly in cereal production (Dobrescu, 2019; Brumă et al., 2024) but have not investigated how value chains are structured or the barriers that exist within them. Hellin and Meijer (2006) define a value chain (Figure 3) as the full range of activities required to bring a product or service from conception to its final customer and disposal after use. These activities encompass various stages of production, involving both physical transformations and the provision of multiple services by manufacturers. Analyzing the value chain is crucial to understanding its structure, identifying key stakeholders, and addressing the obstacles that impede its development. Value chain analysis is a widely recognized tool for evaluating market competitiveness and diagnosing issues within sectors involved in the production of goods (Kaplinsky and Morris, 2000). It is frequently employed as a diagnostic approach to identify and resolve complex challenges in agricultural development (Muflikh et al., 2021). This analysis assesses the economic, social, and environmental processes within the value chain, with a particular focus on its organization, the relationships among actors, and opportunities for improvement (Rawlins et al., 2018). By providing a detailed examination of each step and the roles of various participants, value chain analysis helps identify vulnerabilities, which, when addressed, can create opportunities for increased revenue generation and overall improvement in performance for all stakeholders involved (Haddas, 2018).

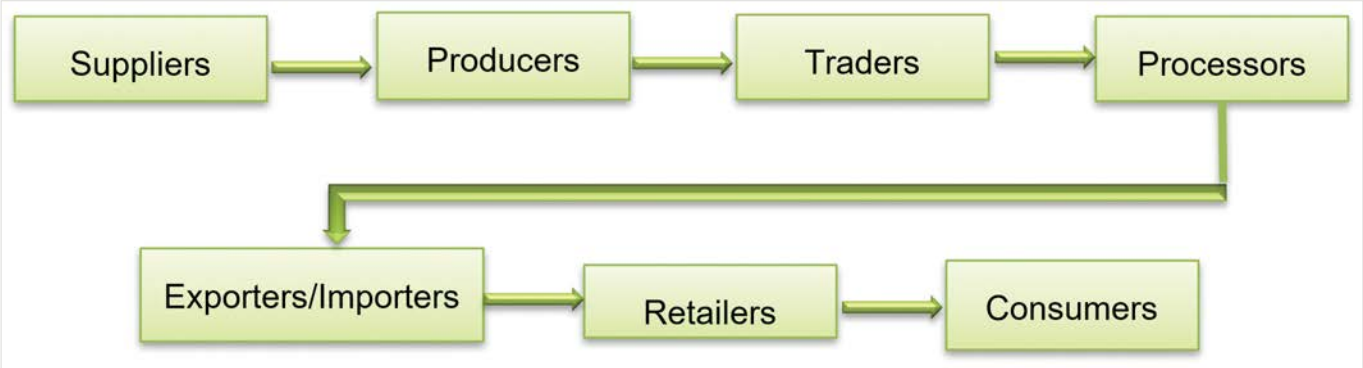

Figure 3. Simple value chain (Hellin and Meijer, 2006)

Value chain analysis primarily emphasises four key components (Muflikh et al., 2021):

1. Understanding the structure of value chains.
2. Examining governance, which involves the relationships and power dynamics among actors that dictate the decisions of what, how, who, when, where, and why to produce.
3. Identifying critical leverage points, where small modifications can lead to substantial improvements within the value chain.
4. Developing strategies or interventions for modernisation.

In the context of the European Green Deal targets, it is vital to comprehend the value chain organisation of the Romanian grain sector, such as to propose changes that can enhance its development and address gaps in existing research.

The primary aim of this study is to conduct an in-depth analysis of the organic grain value chains in Romania, with a focus on identifying and addressing the most important barriers that constrain the sector's growth and competitiveness. Through mapping the structural and functional dynamics of the value chain, the research aims to uncover inefficiencies and challenges encountered by stakeholders, from producers to processors and distributors. By offering new insights into structural and operational barriers, this study contributes to the academic literature while also proposing practical strategies and policy interventions.

Ultimately, the goal is to provide actionable recommendations that will foster the development of the organic cereal value chain, focusing on enhancing domestic processing capacity, improving governance, and stimulating stronger market demand. These measures are critical not only for achieving the European Green Deal targets but also for positioning Romania as a significant player in the organic agriculture sector.

To achieve these objectives, the study addresses three research questions, derived from identified gaps in the literature:

1. (RQ1) What is the structure of the organic grain value chain in Romania?
2. (RQ2) What challenges do stakeholders face within this value chain?
3. (RQ3) What are the needs of these stakeholders to enhance and advance the value chain?

The first question aims to map and understand the structure of the value chain, while the subsequent questions focus on identifying challenges and stakeholder needs, ultimately uncovering barriers and opportunities for improvement.

MATERIALS AND METHODS

The data collection process employed semi-structured interviews with key stakeholders within Romania's organic grain value chain. This methodology has been utilised in other previous studies (Hellin and Meijer, 2006; Rieple and Singh, 2010). It was chosen for its capacity to provide in-depth, detailed insights while offering flexibility to explore participants' perspectives and experiences (McIntosh and Morse, 2015). Semi-structured interviews were guided by a comprehensive interview framework designed to capture all stages of the value chain. Three distinct interview guides were developed, each tailored to the specific stakeholder group: farmers, other value chain actors (such as suppliers, distributors, and sellers), and additional stakeholders (e.g., policymakers, umbrella organisations, and experts).

The interview guide for farmers included 15 questions, beginning with two questions about the farm's history and key characteristics, such as size, farming practices, and organisational structure. The next eight questions focused on various stages of the value chain—agricultural production, inputs and supply, processing and packaging, distribution, marketing, and sales. Two questions explored relationships with other value chain actors, while the final three addressed challenges, issues, and future needs. For other stakeholder groups, the guide consisted of 10 questions: two related to key business operations, five concerning interactions and collaboration with other actors, and three addressing barriers, needs, and future

plans. The interview guide for additional stakeholders contained eight questions: two about their activities, three regarding relationships with other actors, and three about value chain barriers and future needs.

Given the absence of a public database of organic grain producers in Romania, they were identified through a Google search and contacted via phone or email. Following initial contacts, the snowball sampling technique was used to identify other chain actors. The number of interviews was determined by the saturation criterion, which is reached when no new information emerges from additional interviews (Seidman, 2006). Researchers such as Douglas (1985) and Hennink and Kaiser (2022) suggest that saturation is typically achieved around 25 interviews, depending on the topic. In this study, saturation was reached after 30 interviews. This sample size aligns with those used in similar studies analysing agricultural value chains (Soosay et al., 2012; Abebe et al., 2022).

The interviews were conducted both in person and by phone, with audio recordings made upon participants' consent. In total, 30 interviews were completed, comprising 12 farmers, 5 input suppliers, 4 distributors, 3 processors, and 6 additional stakeholders within the value chain (managers of two local action groups, two certification bodies, and two cooperatives).

Content analysis was used to analyse the data (Asem-Bansah et al., 2012). The first step involved transcribing the interview recordings. Next, the value chain was mapped, and the actors involved were described. The final step was a content analysis (Dan and Jitea, 2023) focusing on thematic categories, particularly barriers and future needs. These categories were identified for each type of actor, and the specific issues mentioned by the interviewees were documented. Barriers and future needs were then prioritised based on their frequency of mention, helping to identify leverage points for the development of the organic system.

Although a similar research methodology has been used in past studies (Haddas, 2018; Hossain et al., 2019), it is not without limitations. These include restricted access to data due to the reluctance of some actors to participate in interviews, time constraints arising from the length of the interviews, and the potential for misinterpretation inherent in content analysis (Krippendorff, 2018). Nevertheless, these limitations are common practices accepted in other similar research.

RESULTS AND DISCUSSIONS

Mapping the value chain

The value chain for the organic grains sector in Romania, as depicted in Figure 4, exhibits similarities with those in other regions (Ayele et al., 2021; Udhayan et al., 2023). The chain begins with input suppliers (e.g., seed, fertiliser, plant protection, fuel, and energy suppliers) and progresses to the farmer, who plays a central role as the initiator of the chain. Within the grains value chain, two categories of farms exist: the first category comprises farmers who exclusively produce grains for sale as a final product, while the second category includes those who process some parts of their production.

For the first category of farmers, which constitutes 80% of respondents, three potential selling pathways exist within the value chain. The first, accounting for approximately 15% of the production, involves grain processors who convert grains into products such as flour and other derivatives, with distribution through retailers to the final consumer. The second one, representing around 80% of the production, is characterised by grain traders. These traders utilise two distribution channels: over 90% of the grains are exported, while 10% are directed to processors. The chain then proceeds similarly to the first option. The third pathway, comprising 5% of production, includes agricultural cooperatives that serve as intermediaries between farmers and traders, with the remaining chain structure following the second pathway.

For the second category of farmers, representing 20% of respondents who engage in processing, the value chain is simplified, involving only retailers between the producers and the final consumers.

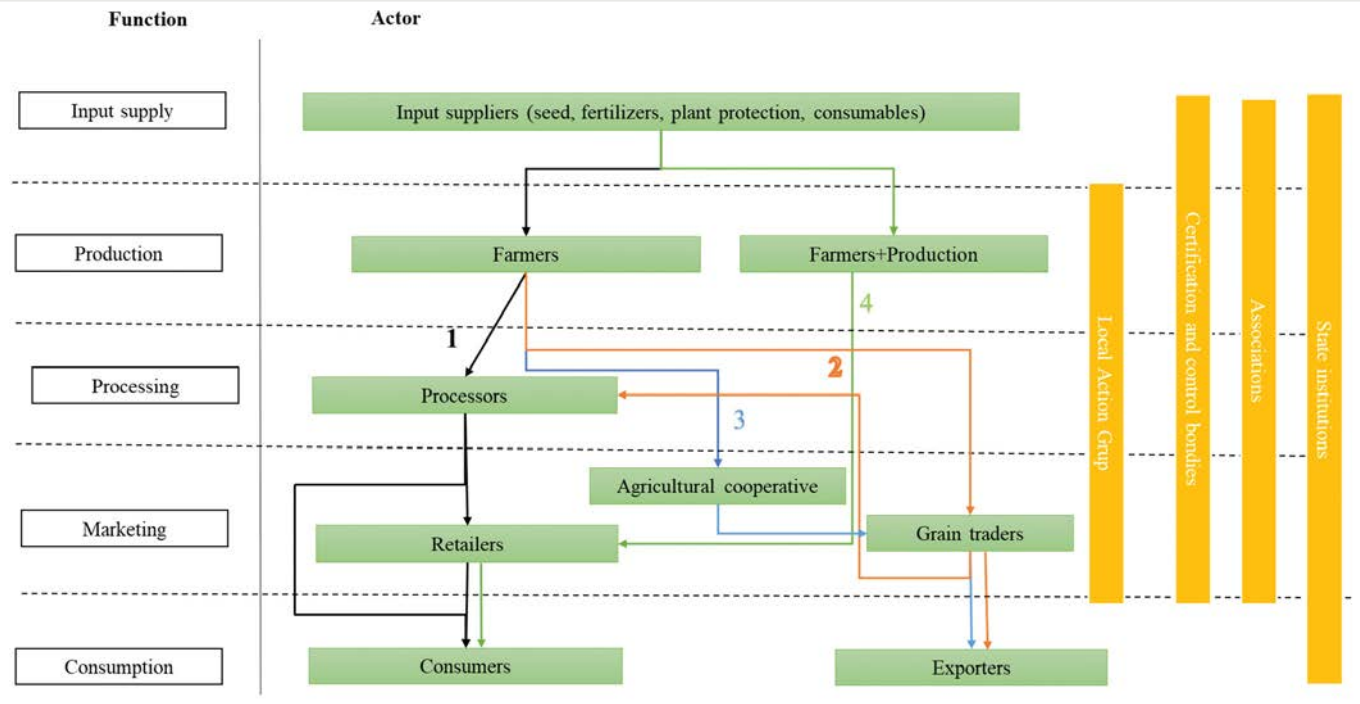

Figure 4. The value chain of organic grains in Romania

In addition to the primary actors, certification and control bodies play a critical role in certifying the economic activities of all participants. Alongside these, local associations and support activities contribute to the smooth functioning of the chain and provide sectoral assistance. Another key group of stakeholders consists of state institutions that supervise and monitor the activities of the main actors in the value chain.

The organic grain value chain in Romania is relatively straightforward, with a small number of participants and limited added value, as most organic grains are exported as raw materials. This is consistent with findings from previous studies (Lozan and Arndt, 2022). The actors involved in the chain are few, with producers, certification and control bodies, and organic stores being the primary stakeholders specialising in organic products commercialization. Other actors also engage in conventional agriculture.

Farmers producing organic grains are the central actors in the chain. The size of organic grain farms in Romania varies considerably, ranging from tens of hectares to several thousand hectares. In 2021, the average size of an organically certified farm was approximately 50 hectares (Lozan and Arndt, 2022), which is significantly larger than the national average farm size of 4.8 hectares (INS, 2022). This disparity highlights the larger scale of organic farms compared to conventional ones. The larger land areas managed by organic farms may reflect higher investment requirements of organic farming, which often emphasises crop rotation, biodiversity, and sustainable resource management.

A distinguishing feature between organic grain farms and conventional farms is land ownership. Most certified organic farmers lease their land. Leasing alleviates the financial burden of land acquisition, with rent varying by region and soil quality, often paid in cash or in kind, typically in the form of grains. However, leasing can also present challenges, including limited opportunities for long-term investments in soil health, infrastructure, and advanced agricultural technologies due to temporary or uncertain lease contracts.

Approximately 90% of Romania's organic grain production is exported as bulk raw material to other EU member states (Lozan and Arndt, 2022). This high

export rate reflects Romania's reliance on foreign markets and indicates limited domestic processing capacity. Consequently, the number of local grain processors remains low. Nevertheless, some grain is still processed domestically into products such as flour, pasta, flakes, biscuits, and pretzels. The heavy reliance on bulk exports underscores the potential for growth in Romania's domestic processing sector, which could lead to a more self-sufficient agricultural economy and increased opportunities for local businesses to innovate and expand. Strengthening this sector could reduce dependency on raw grain exports and enable the production of higher-value-added products, meeting both domestic and international demand—an approach also observed in other countries (Ayele et al., 2021).

Certification and control bodies are essential players in the value chain and significantly influence all participants. In Romania, 14 certification and control bodies are active (MADR, 2024). Notably, two of these bodies certify over half of the country's organic operators, underscoring their dominant role in the sector (Lozan and Arndt, 2022). Six of them are based in Romania, while the remaining eight are headquartered in various EU member states (Germany, Italy, and Austria), reflecting a combination of local expertise and adherence to broader European organic certification standards. Among these bodies, only three exclusively offer organic certification services, while the others provide additional certifications or various services.

Upstream input suppliers, essential to the production process, are not exclusively focused on the organic sector. These suppliers provide physical input as well as advice on grain production management. The Ministry of Agriculture maintains an official list of 132 approved distributors of plant protection products authorised for organic farming (MADR, 2024). This list is a vital resource for organic farmers, ensuring that they have access to products compliant with organic standards and sustainable agricultural practices. However, most suppliers offer a limited selection of organic products, and many are international companies producing organic inputs outside Romania. This highlights the underdeveloped state of Romania's organic sector and its dependence on imported organic inputs.

Grain traders are another crucial component of the value chain. Most traders are in counties near the port of Constanța or in the western part of Romania. One prominent trader operates in Tulcea County, working with farmers who cultivate approximately 70,000 hectares of organic grain. These traders collaborate with partners from Western European countries, such as Germany, Italy, Austria, and France.

Retailers, including both supermarkets and specialised organic stores, also play a significant role in Romania's organic grain value chain. Supermarkets nationwide offer a wide range of organic products, ensuring accessibility for consumers. Similarly, organic stores provide diverse product selections, catering to various consumer preferences. Many of these stores have also established an online presence, making it easier for consumers to access organic products and increasing the overall consumption of organic food in Romania. In the context of organic grains, both supermarkets and organic stores act as retailers, selling processed grains in various finished products, with many of these products being imported.

Associations also contribute to the development of Romania's organic agriculture sector. Currently, nine non-governmental organisations (MADR, 2024) are active in this area. Some of these organisations focus on organic agriculture, while others support agricultural activities more broadly, with organically certified members. These associations promote the sector by offering advisory services, organising events to facilitate networking, and actively advocating for organic products. Through these efforts, they aim to foster collaboration, increase visibility, and enhance the growth and sustainability of organic agriculture.

There are no Romanian state institutions exclusively dedicated to organic agriculture; however, several organisations play significant roles in organising and coordinating agricultural activities, including those related to organic farming. These include the Ministry

of Agriculture and Rural Development (MADR), which regulates and oversees organic certification processes; County Directorates for Agriculture, which manage organic farming areas and regional strategies; the Agency for Payments and Interventions in Agriculture (APIA), which provides financial support for organic farmers; and the Agency for Financing Rural Investments (AFIR), which funds various organic agriculture projects. While no single institution is dedicated solely to organic agriculture, these organisations collectively contribute to the sector's development through public policies, financial support, and regulatory oversight.

The governance structure

All actors adhere to established legal standards for the production and marketing of organic products. Farmers, as key participants in the value chain, establish governance links with various stakeholders. These relationships are not solely formalised through contracts but are also built on a foundation of mutual trust. In fact, 80% of the farmers surveyed emphasise the critical role of trust-based relationships with other actors in the chain, viewing them as vital for their market sustainability. This trust, in conjunction with formal agreements, underpins their interactions, fostering stability and long-term success within a competitive environment.

The relationships between farmers and suppliers are primarily shaped by the specific needs of the farmers. Once these connections are made, they are largely maintained through mutual trust, which serves as the basis for ongoing collaboration. Challenges within these relationships tend to arise more frequently in interactions with state bodies rather than with other value chain participants.

The relationship between farmers and traders is particularly dynamic, characterised by continuous information exchange. Farmers regularly update traders about their delivery capabilities, including product types and quantities, while traders inform farmers about current market demands and the need for product diversification.

Despite the productive nature of this collaboration, several issues emerge due to the involvement of state institutions. Legislative changes and a lack of communication contribute to a perceived lack of support among all actors in the chain. Additionally, the absence of standardised certification documents required by various state agencies compounds these challenges, creating unnecessary barriers and significant delays. These bureaucratic inefficiencies not only disrupt operations but also strain relationships within the value chain.

The value chain development

To modernise and advance the value chain of organic grains in Romania, it is essential to identify the challenges and barriers faced by different stakeholders. Table 1 outlines the primary obstacles encountered by input suppliers, farmers, processors, grain traders, retailers, and other relevant actors. These barriers have been prioritised according to their frequency in responses derived from the content analysis.

A key challenge highlighted by most participants in the chain is the insufficient number of grain processing facilities within the country. The limited capacity to process grains into products such as flour and other derivatives is primarily attributed to the low demand for organic products (Table 1). This is further evidenced by the per capita consumption of organic products in Romania, which amounts to only 2.1 euros per person, a figure significantly lower than the European Union average of 101.8 euros per person (Willer, 2024). This fundamental issue is compounded by a secondary challenge, the lack of consumer confidence in organic products, a concern also identified in studies from other regions (Das and Roy, 2021).

A significant number of farmers have pointed out the issue of consumer distrust in organic products, attributing it to the insufficient consumer education regarding the distinctions between terms such as "organic," "natural," and "traditional," as well as misleading marketing practices by certain traders.

Table 1. Barriers at the level of the organic grains value chain in Romania

Value Chain Actor	Barriers
Input suppliers	1. High costs and long approval processes for organic phyto-protection products
	2. Ambiguities in legislative acts and delays in their implementation
	3. Farmers' non-compliance with the prescribed treatment plans
Farmers	1. Absence of grain processing facilities
	2. Low consumption demand for organic products
	3. Buyers' distrust in the organic certification of the product
	4. Insufficient political support for promoting organic markets
	5. High levels of bureaucracy
	6. Inconsistent documentation requirements between the County Directorate for Agriculture and the Agency for Payments and Interventions in Agriculture
	7. Lack of farmer organisations focused on organic farming
	8. Limited availability of advice services in organic farming
Processors	1. Low demand for organic products
	2. Buyers' scepticism about the environmental friendliness of the product
	3. Lack of collaboration between the relevant actors in the chain
Grain traders	1. Low demand for organic products
	2. Buyers' scepticism about the environmental friendliness of the product
	3. Low price premiums between organic and conventional grains
Retailers	1. Low demand for organic products
	2. Lack of strategic collaboration between retailers and organic processors
Other actors	1. Low demand
	2. Insufficient education on organic product consumption
	3. Limited information and promotion of organic systems
	4. Inconsistent documentation requirements between the County Directorate for Agriculture and the Agency for Payments and Interventions in Agriculture
	5. Limited availability of advice services in organic farming

This barrier of consumer distrust is also emphasised in consumer studies (Chiciudean et al., 2019), indicating that it is not only a concern among farmers but also a sentiment shared by consumers. Furthermore, frequent legislative changes, bureaucratic obstacles, and inconsistencies among state institutions exacerbate the issue. The inadequate promotion and lack of robust support measures for organic farming create considerable disincentives for farmers to continue or transition to organic practices.

In the absence of sufficient support, farmers face numerous challenges, including financial instability, difficulties accessing markets, and the burden of meeting stringent certification requirements. These challenges are further compounded by higher production costs and lower initial yields commonly associated with organic farming, making it difficult for farmers to compete with conventional agriculture.

Another critical challenge facing the organic farming sector is the lack of specialised advisory services in both technical and managerial domains. This gap in expertise leaves many farmers poorly equipped to navigate the complexities of organic farming. Consequently, many farmers enter the sector with limited or no specialised knowledge, which leads to difficulties in implementing effective organic practices and managing their operations efficiently.

Without access to expert guidance, farmers struggle with various aspects of organic farming, such as soil fertility management, pest control, crop rotation, and meeting certification standards. These technical challenges are further complicated by difficulties in business management, including market access, financial planning, and supply chain coordination. The absence of advisory services forces farmers to rely on trial and error, often resulting in inefficiencies, lower productivity, and increased costs.

Organic grain farmers in Romania face several challenges, some of which are shared with farmers in other countries (Das and Roy, 2021). Common issues include low consumption and complicated certification processes. However, many of the challenges in Romania are unique, stemming from factors such as local agricultural policies, the country's specific socio-economic context, and the lack of advisory services.

To address these barriers, the value chain stakeholders have proposed several strategic solutions, which are presented in Table 2. One of the most widely supported strategies is consumer education, with many advocating for state-led campaigns that promote organic grain consumption by emphasising their health and environmental benefits.

In addition to consumer awareness, there is a strong call for legislative stability and the introduction of better-targeted financial incentives to support organic farming. These could include state-backed purchasing programs and the establishment of clear, accessible criteria for support measures, ensuring that organic farmers receive the necessary assistance.

Currently, many organic farmers face challenges due to limited local processing capacity. This gap often forces them to sell their raw products at lower prices or export them to countries where value-added processing occurs. Establishing stronger partnerships with processors could enable farmers to ensure their organic produce is transformed into finished products such as organic flour, oils, or packaged grains that command higher market prices. This would not only increase farmers' incomes but also contribute to the development of a more robust local organic food industry.

The creation of cooperative groups focused on processing could further amplify these benefits. Such groups could pool resources, share technology, and collaborate on research and development to improve processing techniques tailored to organic products. These companies could also provide farmers with essential services, including logistics, marketing, and distribution, creating a more integrated and efficient value chain. The formation of cooperatives or alliances between these companies and farmers could enhance coordination and strengthen bargaining power, ensuring that both producers and processors benefit from the growing demand for organic products.

Table 2. Specific levers for enhancing the organic grains value chain in Romania

Value Chain Actor	Barriers
Input suppliers	1. Consistent and transparent legislation.
	2. Public education campaigns on organic products.
	3. Enhancing the standard of living.
Farmers	1. Public information campaigns on organic products.
	2. The development of the local processing industry through appropriate public policies
	3. Consistent and transparent legislation.
	4. Support measures with more achievable criteria (e.g., smaller minimum area requirements for organic farming).
	5. Prioritisation of state-owned institutions' purchases of organic products (for hospitals, kindergartens, and care centres).
	6. Advice services
	7. Promote cooperation among small farmers through cooperatives and producer groups focused on organic agriculture.
Processors	1. Educational campaigns for consumers about organic products.
	2. Advice services
	3. Creation of clusters to stimulate the processing of grains in the country
	4. Improving the standard of living.
Grain traders	1. Educational campaigns for consumers about organic products.
	2. Collaboration with processors and the development of groups of companies to help in the development of processing.
Retailers	1. Educational campaigns for consumers about organic products.
	2. Improving the standard of living.
	3. Local purchases of grain products.
Other actors	1. Educating both consumers about the benefits of organic products and producers about the advantages beyond just economic gains.
	2. Consistent and transparent legislation
	3. Creation of a collaborative program involving state institutions, certification bodies, and farmers

Another proposed solution involves the establishment of comprehensive support systems that provide farmers with access to specialised advice services. These services should offer tailored advice on both the technical aspects of organic farming and the business management skills required for success. By equipping farmers with the knowledge and tools they need, these services could help them overcome the initial hurdles of transitioning to organic farming, optimise their production processes, and build sustainable, profitable businesses.

In addition, creating networks and cooperatives that facilitate knowledge sharing among farmers can also be an effective way to bridge the consultancy gap. Such initiatives can foster a community of practice where farmers can learn from each other's experiences and collectively solve problems, further strengthening the organic farming sector. By addressing the consultancy service shortage, the state and industry stakeholders can significantly enhance the growth and sustainability of organic agriculture.

CONCLUSIONS

This study conducted an in-depth analysis of the organic grains value chain in Romania, revealing a straightforward structure with a limited number of key players. The primary actors identified within the chain are organic grain producers and traders, who build their relationships on a foundation of trust and respect. However, the study also found that the value-adding processes for organic grains are largely absent, with most organic grains being exported to countries such as Germany, Italy, France, and Austria through intermediaries.

Several significant barriers to the development of this value chain were identified. These include low domestic consumption of organic products in Romania, frequent legislative changes, high levels of bureaucracy, and inadequate support from state institutions. The study provides valuable insights that can be utilized by policymakers and industry stakeholders to enhance and expand the value chain.

To address these barriers, the actors in the chain have proposed several strategies, including consumer education campaigns to increase awareness and consumption of organic products. They also advocate for the creation of a more stable legislative environment and the implementation of support measures for organic farmers, such as state-backed purchasing programs and reasonable criteria for accessing assistance.

The originality of this work lies in its dual theoretical and practical approach. It not only identifies the barriers hindering the value chain's development but also proposes actionable solutions to overcome these obstacles.

The research provides critical practical insights that can guide both strategic and operational advancements in the organic farming sector. Initially, it delineates the value chain, identifying its strengths and weaknesses, which establishes a fundamental framework for stakeholders to design targeted strategies. Current market participants can utilise these insights to enhance operational efficiency, while the identification of unmet needs and gaps may stimulate the entry of new competitors, thereby promoting innovation and competition. This mapping process not only exposes inefficiencies but also uncovers potential opportunities for investment, collaboration, and value chain enhancement.

Additionally, by identifying the key challenges confronting the sector, including certification barriers, limited processing capacity, and market development constraints, the study provides decision-makers with essential data to design targeted interventions. Policymakers can utilise those findings to formulate tools and policies that foster the growth and sustainability of organic farming, such as incentives for certification, subsidies for processing infrastructure, and public awareness campaigns promoting organic products. These initiatives could also bolster the sector's resilience by addressing systemic challenges and establishing a more robust framework for the organic farming value chain to flourish.

The study acknowledges several limitations, including the lack of a comprehensive database of farmers within Romania's organic cereal sector and the reluctance of value chain stakeholders to disclose information about their operations, leading to a smaller sample size. These factors warrant caution in generalising the findings. Recognising and addressing these limitations contributes to the transparency of the study and provides a foundation for future research to explore and resolve the identified gaps.

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