

POST-PANDEMIC RESILIENCE: REVITALIZING ROMANIA'S AGRI-FOOD VALUE CHAINS

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ABSTRACT

The Romanian economy has evolved from centrally managed value chains during the pre-political and economic transformation era to a decentralized market economy. As of 2022, nearly 45.7% of the population resides in rural areas, significantly higher than the 23.6% average in EU member states. Additionally, about 30% of the population works in agriculture, contrasting sharply with the 2% average in the EU. This discrepancy manifests in a higher poverty level and a lower living standard in rural compared to urban areas. The current structure of the agri-food value chain in Romania entraps farmers between suppliers and customers, adversely affecting their prosperity. The practice of involving multiple intermediaries between producers and consumers results in only a fraction of the benefits reaching the farmers, which in turn negatively impacts their productivity and investment motivation, particularly for semi-subsistence farms. Addressing this challenge requires not only the development of medium-sized agricultural holdings but also strategies to enhance working capital and market access for small farmers. This study proposes the creation of short agri-food chains, such as producer groups, organized in a clustered, networked, and proximity-based manner, as a viable approach to better integrate farms into national and European markets in the post-pandemic era. This approach is crucial for revitalizing Romania's agri-food value chains and fostering resilience in the agricultural sector post-pandemic.

KEYWORDS: *agricultural market access, clustered producer networks, post-pandemic resilience, Romanian agri-food value chains, rural-urban disparities.*

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1. INTRODUCTION

The recent surge in food prices, exacerbated by droughts, the Russian-Ukrainian conflict, and global agri-food market disruptions, underscores the urgent need for innovative resilience strategies and food security measures, while ensuring sustainable agricultural employment. Despite the pressing need, there currently exists no international classification-framework for reserves and agri-food resources, akin to the CE-UN classification for energy, which provides methodologies and calculation formulas for evaluating and assessing resources and reserves of agri-food products at global, regional, and zonal levels. This gap hinders real-time information access for the entrepreneurial and business environment in the sector. Consequently, there is a prevalent confusion between "resources" and "reserves" of agri-food, leading to distorted informational and decision-

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making processes among key stakeholders in food security. To address this, it is imperative to enhance the understanding of agri-food resources and reserves, thereby identifying and assuming motivations for the development or reevaluation of local and proximity value chains for certain agri-food products, particularly those essential for subsistence. This knowledge will serve as a foundation for reassessing Romania's agri-food potential in pursuit of competitive advantages at local and national levels, and comparative advantages internationally. Paradoxically, Romania's agricultural over-potential is not reflected in its current production results, as the country imports more agricultural products than it exports. This incongruity highlights the need for a strategic reevaluation and revitalization of Romania's agri-food value chains to foster post-pandemic resilience and bolster its position in the global market.

2. THE STATE OF KNOWLEDGE IN THE FIELD. SPECIALTY LITERATURE

The recent emphasis in specialized literature underscores the pivotal role of small food industries and small producers, highlighting a significant void in cooperation along the value chain in Romania (Cazacioc, 2016). This necessitates a collaborative approach that includes farmers, processors, producers, small retailers, and consumers. Such active cooperation can bolster entrepreneurial success, invigorate local economies, and retain capital within the national economy, reinforcing solidarity, rekindling the local economy, and adhering to the "Fresh, local, and seasonal!" motto. This encapsulates the essence of a local value chain, strategically aimed at creating quality food products with cultural and heritage connotations.

In the wake of global food chain expansion, a myriad of terms has surfaced in academic, political, technical, and civic debates, delineating innovative food supply chain reorganizations. Terms such as short supply chains, alternative food networks, local farming systems, and direct sales, mirror efforts to reestablish connections between producers and consumers and relocate agricultural and food production. Agri-food traceability, which allows comprehensive product monitoring in the food chain and traces a good's history from producer to consumer, is gaining notable international attention as a preventive quality and safety management tool (Pizzuti, 2012).

Rachieru and Gâf-Deac (2016) formulated proximity and local short value chains as avenues to competitively harness agro-food production in Romania. This work expands on this notion by integrating specific additions and updates. Sanz-Cañada & Muchnik (2016) delineated a Local Agro-food System (LAFS) as a cluster of local, networked firms and small institutions, predominantly situated in rural areas, specializing in producing and marketing identity-based food products. Simultaneously, Short Food Supply Chains (SFSCs) have surfaced alongside conventional food chains as a crucial component of evolving food networks, offering an alternative to the globalized agri-food model (Galli & Brunori, 2003).

Caiazza & Volpe (2012) characterized the agri-food system's value chain as a sequence or flow of interconnected activities conducted by companies, organizations, or individuals essential to transport a product or service from production to final customers. This entails a spatial concentration of a diffuse entrepreneurial and institutional network, including agricultural farms, agro-food industrial units, marketing companies, auxiliary industries, service enterprises, sectoral institutions, and local development agencies, all located within a single territory and exhibiting a relatively high degree of spatial production specialization.

For 2023-2027, the European Union's Common Agricultural Policy (CAP) has delineated ten primary objectives, including decent income insurance for farmers, competitiveness, empowering farmers in the food chain, combating climate change, environmental protection, landscape and biodiversity care, generational renewal, rural area revitalization, food quality and health, and knowledge and innovation. This programmatic vision offers a comprehensive framework for

establishing and operating short proximity chains in Romania's agri-food sector as an EU member country.

The specialized literature accentuates various challenges tied to food security, renewable sources, rural migration, and sustainable development. The study by Burlacu et al. (2022a) underscores the global lack of economic and food security, suggesting that the proposed international classification-framework of agri-food reserves/resources and the development of short local and proximity value chains for micro-businesses could be instrumental in enhancing food security, not only in Romania but globally.

Moreover, the discussion by Rădulescu et al. (2022a) on renewable sources in the European Union implies that the research could underscore the sustainable and efficient development of agri-food resources in Romania and its alignment with the EU's renewable sources and sustainability goals. Additionally, Burlacu et al. (2022b) examined the socio-economic implications of rural population migration, indicating that developing local and proximity value chains for micro-businesses could potentially generate employment opportunities and mitigate rural migration. Also, the challenges regarding food resources in the context of globalization and population growth discussed by Rădulescu et al. (2020) suggest that the research could propose a new economic growth vision in Romania based on the innovative agri-food economy.

Furthermore, the discourse by Burlacu et al. (2018) on e-commerce and global food resources implies that the proposed Information System for the Romanian Agricultural and Food Products Market (SIPPAA) information platform could integrate e-commerce into the short local and proximity value chains for micro-businesses. Lastly, the discussion by Rădulescu et al. (2022b) on the implications and challenges in assessing Romania's forest area evolution suggests that the research could underscore the role of sustainable agri-food technologies in decoupling economic development from resource consumption.

In summary, the specialized literature highlights multiple challenges related to food security, renewable sources, rural migration, and sustainable development. This research contributes to this literature by proposing practical solutions to these challenges through the development of an innovative agri-food economy in Romania. This is based on short local and proximity value chains for micro-businesses, sustainable agri-food technologies, and an international classification-framework of agri-food reserves/resources.

3. THE RESEARCH METHOD

The research commences with an examination of the agricultural labor force structure and the observation that a significant portion of Romania's unemployed population originates from the agricultural sector (ANOFM, 2023). In the document titled 'Romania's Food Safety and Security Strategy,' which synthesizes the national strategic framework for the sustainable development of the agri-food sector and rural areas from 2015-2030, Otiman (2014) posits that Romania has the food potential to sustain 38.5-40 million people between 2030-2035. Additionally, the potential for exporting and non-food consumption of agricultural raw materials is approximately €50-52 billion. However, the current compatibility of Romanian agriculture with the EU remains suboptimal. The compatibility degree for grain production is 0.52, for the value of agricultural production 0.32, for gross capital formation 0.35, and for the utilization of arable land's ecological potential, a mere 0.39. These figures indicate significant technological performance gaps and systemic imbalances in property and holdings. Often, resources are allocated and used inappropriately, affecting competitiveness and posing threats to enhancing food safety and security.

Conversely, it is acknowledged that Romania has a substantial portion of its land (47.9%) covered with permanent greenery in ecological macroregions (Otiman, 2014, p.96). This characteristic establishes favorable foundational conditions for extensive agro-food development (Figure 1).



Figure 1. Percentage representation of permanent green cover in the ecological macroregions of Romania (R1=14.2%, R2=30.5%, R3=41.0%, R4=55.8%, R5=63.7%, R6=76.3%, Romania=47.9%)

Source: Otiman (2014, p.96)

The study proposes that to eliminate or mitigate the aforementioned deficits, within the foundational framework of permanent green cover, it is beneficial to establish and integrate productive-economic agri-food networks by combining short and proximity value chains. This premise lays the foundation for designing short agri-food value chains, networks, and clusters for small agri-food businesses (Gâf-Deac, 2010).

The initial framework for formalizing this networked agri-food economy with short and proximity value chains involves the following phases:

- Describing the structure of Romania's general economy (2022-2030),
- Delineating the structure of Romania's agri-food economy from the total national economic structure,
- Systematizing the positive characteristics of Romania's agri-food economic structure (strengths) that favor the establishment and operation of micro-businesses through short, local, and proximity agri-food value chains.

An international classification-framework of reserves and agri-food resources could provide the basis for re-evaluating Romania's real agri-food potential (Gâf-Deac, 2007). Such a framework could substantiate opportunities for:

- Developing local and regional infrastructure,
- Developing agri-food businesses/micro-businesses,
- Rural development and agricultural efficiency,
- Developing human resources.

Hence, agri-food micro-businesses could benefit from data and information from the framework qualification for pre-feasibility and feasibility studies of agri-food cultivation, processing, and distribution (consumption) processes at local, regional, national, and European levels for micro and macro businesses. Reinforcing the findings, it is suggested that agri-food micro-businesses, through short, local, and proximity agri-food value chains, constituted in Romania's economic structure, can contribute to reducing the national deficit in trade in agri-food products, which exceeded hundreds of millions of euros in 2021, increasing more than sevenfold compared to the level recorded three years ago.

This situation indicates the persistence of unmodernized agriculture in Romania, reduced processing capacities, and notable influences of seasonal climate variations. It is believed that cluster knowledge procedures (aggregations of short local and proximity chains for micro-businesses) are also needed in the field of agri-food resources in Romania. Some studies reveal that the current degree of knowledge and implementation of the cluster concept in Romania's eight development regions is relatively low, and about 60% of agri-food micro-business managers in Romania are either unaware of or uninformed about the creation and development of clusters. Most of those who are aware consider them to be mediocre, bad, or very bad (about 30% of respondents).

In short and proximity value chains, proposals are needed to capitalize on the local agri-food gene pool using sustainable agri-food technologies, encompassing the entire national chain of agri-food production. Romania's agri-food strategy specifies that a major impact of biotechnological agriculture on agri-food markets and the economy of agricultural and agri-food farms is expected. Given the ecological structure of the national agricultural space, it is certain that Romania has the potential to cultivate about 500 thousand hectares with genetically modified soybeans and about 1.5-2 million hectares with genetically modified corn (out of the 2.5 million hectares cultivated with corn), potentially increasing the agricultural value by at least €2.5–3.5 billion annually through the export of concentrated feed (corn and soybean grains, soybean meal).

Additionally, the agri-food research-innovation network in Romania, which is relatively extensive (60 institutes and research centers), with 30 thousand hectares and 530 researchers, must align with farmers' needs and future development trends. The food industry contributes approximately 8.5-9% to Romania's GDP through more than 9,000 companies, small and medium enterprises in the field. These agri-food companies can and should participate in the formation of short local and proximity value chains for micro-businesses.

The methodological vision proposed for the formation of short local and proximity value chains for agri-food micro-businesses considers the specific situation currently recorded in Romanian agriculture because, before the change of the political and economic system, all agricultural holdings belonged to the state, and processing and consumption were directed centrally through the command economy (Figure 2).

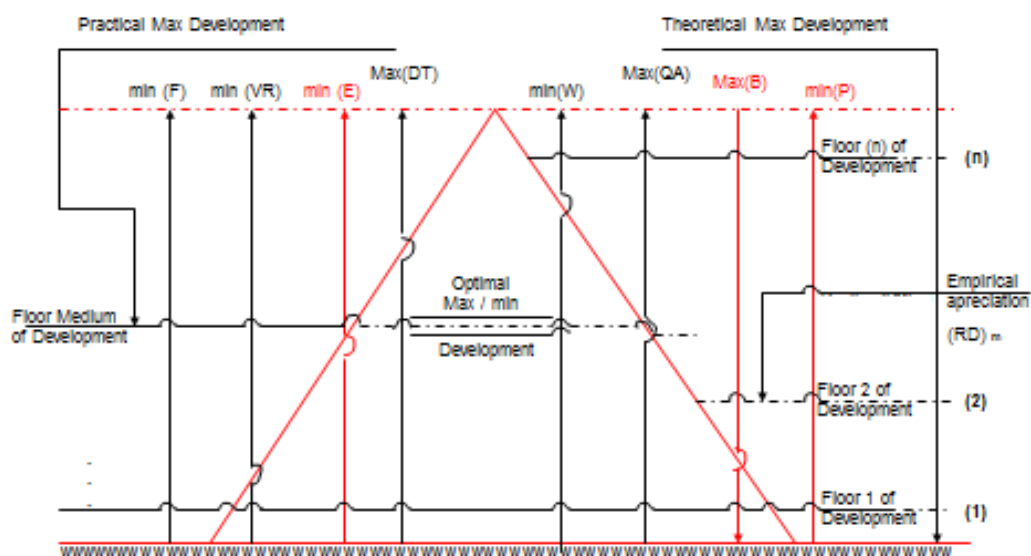


Figure 2. Methodological proposal with reference to the position of a short local and proximity value chain for agri-food micro-businesses (LVS/P) in Romania

Source: Authors

In the proposed variant for forming short local and proximity value chains for private agri-food micro-businesses, participants such as agricultural farms, agri-food processing companies, distributors, consumers of agri-food products from the 8 Development Regions of Romania, and other actors are encouraged to express their commitment. This commitment should align with the shift from agricultural regionalism towards agro-food localism of proximity.

Within this framework, the concept of an information Platform within the Information System for the Romanian Agricultural and Food Products Market (SIPPAA) can be developed. Short agri-food value chains can extend their influence downstream to various distribution channels and customers and laterally to producers of complementary products and related industries through shared skills, technologies, or objectives.

The European extension of this proposal involves developing the Platform's functions for computerized collection of input data for agri-food cluster knowledge. Links will also be maintained with the "European Observatory of Clusters" on the Europa InterCluster, an online collaboration platform between clusters and cluster members.

The essential benefit of adopting this vision is the optimization of the competition-cooperation duality by increasing the degree of knowledge between producers, processors, and distributor-consumers. This, in turn, provides motivations for collective activities, in clusters, associating local value chains and proximity for agri-food products.

By fostering collaboration and knowledge sharing between various stakeholders in the agri-food value chain, this approach aims to optimize the use of resources, improve efficiency, and enhance the overall competitiveness of Romania's agri-food sector. Ultimately, this could lead to increased economic development, more sustainable agricultural practices, and improved food security and safety in Romania and potentially across Europe.

4. CONCLUSIONS

The competitive valorization of agri-food production in Romania through the realization of short local and proximity value chains necessitates several conceptual and practical realignments. Firstly, the development of an international classification-framework of agri-food reserves/resources is paramount for an accurate reevaluation of Romania's agri-food potential. Secondly, it is imperative to identify the structural correspondences pertinent to Romania's agri-food economy to facilitate the sustainable and efficient development of agri-food resources. Additionally, procedures for aggregating short local and proximity chains for micro-businesses in the agri-food resources field must be developed, and the role of technologies in transforming the markets of agri-food resources must be clearly defined and understood.

Moreover, the entrepreneurship and formation of value chains, along with the development expectations and objectives pursued in the field, aim to study the participation of labor consumption and innovative knowledge in balancing competitiveness in productive and reproductive agro-food economic models. This contributes to a new vision for economic growth in Romania, based on an innovative agri-food economy, and entails developing the architecture and ordering of complex agri-food networks.

Special attention must also be accorded to the characterization of relationships in/of the chain, and structures, including economic practices and means of communication. This involves organizing and managing innovative agro-food technological resources and providing operationalization instructions from the cultivation to market distribution of agro-food resources.

Lastly, in both analytical and practical contexts, it is necessary to augment the role of econometrics of agri-food resources in operational realignments in Romania's agriculture and food industry. This involves the application of statistical and mathematical methods to economic data to empirically verify and apply economic theories that can better inform decision-making and policy in the agri-food sector.

In summary, the proposed realignments and approaches contribute to addressing the global challenges of food security, renewable sources, rural migration, and sustainable development. This research thereby contributes to the specialized literature by proposing practical solutions that can enhance the innovative agri-food economy in Romania, ultimately contributing to global efforts to address these challenges.

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