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ROMANIAN AGRI-FOOD BUSINESSES AND THE EUROPEAN GREEN DEAL: AN EXPLORATORY APPROACH

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Abstract

The increase of the concentration of greenhouse gases and global warming are the main problems that the European Commission is trying to solve by proposing the Green Deal, but the well-being of agri-food businesses is influenced, next to the ecologic factors, by the social and economic factors such as maintaining competitive pricing, especially when competing with agri-food businesses that are not affected by the European sustainability measures, and consumers' interest in buying sustainable products.

Analysing the current state of knowledge and carrying out a qualitative exploratory research among the agri-food organizations in Romania, the coordinates of the Romanian agri-food market and a series of its peculiarities were outlined. The research results show that there is a positive perception regarding the opportunity to implement the Green Deal's measures and suggest using a strategic matrix to facilitate their adoption in the context of current economic and social transformations.

Keywords: agri-food businesses, environmental protection measures, Green Deal, agri-food market

JEL Classification: Q13, Q15.

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Introduction

The increasing concentration of well-mixed greenhouse gas has been observed since 1750 (Intergovernmental Panel on Climate Change – IPCC, 2021), but during the last 40 years, the global warming accelerated, with the last 7 years being the warmest (NASA, 2021). Moreover, an Intergovernmental Panel on Climate Change report (IPCC, 2021) explored five scenarios for the future, considering both natural and anthropogenic emissions, and concluded that „global warming of 1.5° C and 2° C will be exceeded during the 21st century unless deep reductions in CO₂ and other greenhouse gas emissions occur in the coming decades” (IPCC, 2021, p. 41).

In this context, agriculture is both a victim and an offender for the environment (Burdick, 1994). Altered precipitation and temperature patterns, extreme weather events and even desertification of some areas, take a high toll on farms’ harvest and availability of healthy food for the consumers. At the same time, “up to 37% of global greenhouse gas emissions can be attributed to the food system, including crop and livestock production, transportation, changing land use (including deforestation) and food loss and waste” (Science Advice for Policy by European Academies – SAPEA, 2020, p. 37). Even worse, considering the food waste trend and the growth of the world population, an IPCC Report (2019) suggested that, by 2050, the demand for food will increase by 50-70%, which will increase the greenhouse gas emissions by 30-40% (SAPEA, 2020). Although this report did not take into consideration the impact of COVID-19 when estimating the population growth, it emphasizes the importance of achieving a neutral or a positive environmental impact, while protecting all actors in the food chain from disparities and ensuring access to healthy and affordable food for everyone.

Considering these challenges and many others, through The European Green Deal, the European Commission proposes a set of measures regarding transportation, industrial technologies, energy system, buildings, working the land, etc., meant to reduce the net greenhouse gas emissions by at least 55% by 2030 (European Commission, 2020). In addition to the ecological sustainability, it also strives to ensure the socio-economic sustainability of the food chain.

The Farm to Fork Strategy remains at the core of the EU Green Deal, aiming to accelerate the change, “to make food systems fair, healthy and environmentally-friendly” (European Commission, 2021a) and targets the following objectives: ensuring food security and preserving its affordability, as well as fostering the competitiveness of the EU supply sector. Also, the UN COP26 climate summit, which took place in Glasgow, between 31 October and 12 November 2021, shows the general interest in mitigating climate change (European Council, 2021). Even though some were disappointed with the pace it imposes, it still is a step forward, calling for funds and setting a time framework.

The European Union (EU) is going forward faster than other areas in the world, working to ensure a framework for this process. As a member state, Romania tries to achieve the standards proposed by the new directives on the environment and the food industry, in spite of many social and economic adverse factors. The agri-food businesses’ reactions to the Green Deal measures are rarely presented in the literature (Chesnoiu, 2021), but constitute the purpose of this paper. The questionnaire used in the exploratory research has been based on the literature, offering a comprehensive image of the Green Deal measures that impact the

agri-food businesses. Further, the paper comprises the literature review, the research's methodology and results, the conclusions, and the theoretical and managerial implications.

1. The Green Deal's impact on the current agri-food businesses' activities – literature review

The European Green Deal aims to neutralize the existential threat of environmental degradation, acting on three levels – ecological, economic, and social – to achieve the following major objectives: “no net emissions of greenhouse gases by 2050; economic growth decoupled from resource use; and no person and no place left behind” (European Commission, 2021b).

In order to ensure a good understanding of European food chain realities and to ensure the measures' consistency in such a diverse industry regarding economic activities and national and regional peculiarities, the European Commission asked the Science Advice for Policy by European Academies (SAPEA) to produce an Evidence Review Report (SAPEA, 2020). This Report presents a comprehensive image of the European food industry, including the links between different framings (e.g. food as a commodity, commons, human right, or identity and culture) and possible policy interventions (SAPEA, 2020, pp. 60-61). For instance, two related concepts that are growing in popularity, food democracy (Hassanein, 2003) and food sovereignty (Wittman, 2011), advocate that food chain transformation should be based on actors (citizens, respectively, small producers) regaining democratic control over the food system (Lopez Cifuentes and Gugerell, 2021). While their ends are similar to The Green Deal – protecting the environment sustainability, social justice, and others – the means are very different, offering initiative and control either locally, to citizen (food democracy) and small producers (food sovereignty), or regionally, to European legislators (The Green Deal). The SAPEA Report submits a series of possible policy interventions that would find common ground with these and other framings across Europe.

Another example of diversity addressed by SAPEA Report is the Northern-Central vs. the Southern model of agriculture. Agriculture and, specifically, the farming system in the Southern model is not as modern and productive as in the Northern-Central one, but this could be an opportunity when adapting changes (Arnalte-Alegre and Ortiz-Miranda, 2013). Farming in Romania is part of the Southern system, having the largest number of farms in the European Union, but being much less effective compared to other countries in Northern – Central model. For instance, according to EUROSTAT (2021a), in 2016, Romania and France appeared to compete for the first place regarding farming in the EU. Although Romania had the highest number of farms (3,422,030), 87% of them were small, family farms, consuming more than 50% of the final production. On the contrary, France had 7 times less farms (456,520), but used twice the surface of land for agriculture and obtained five times more money as output. The difference was also noticeable in farms with livestock – while Romania had the first place regarding the number of livestock farms, France had the first place regarding the number of livestock – on average, a farm in France had 89 animals, while apparently in Romania a farm had on average 2 animals (EUROSTAT, 2021a). Another explanation for these big differences may be the different understanding of the term farm in the EU and in Romania, where there are many people working the land without having a commercial purpose, but only for their families; these are not considered farmers in

Romania, but it seems that they are considered in this report. These are called subsistence (Mathijs and Nivelin, 2004) or semi-subsistence farms (Giurca, 2008; Hubbard et al., 2014).

An important economic aspect that influenced the food industry was the economic recession in 2008, and now, the management of the COVID-19 pandemic is generating economic distress again, because of the restrictions applied to the business sector. These triggering events highlighted “the fragility of global food supply chains – thereby raising concerns of food insecurity” (Petetin, 2020). The Food and Agriculture Organization of the United Nations (FAO, 2021) reports that, in 2020, the first year of the pandemic, the “Prevalence of moderate or severe food insecurity” in the world was 30.38%. This indicator increased by approximately 1% each year starting in 2015, but in 2020 it increased by almost 4%. In Europe, with the standard of living being higher, food insecurity is lower, the indicator registering 9.29% for the entire Europe and 14.77% for Eastern Europe. Romanian’s “prevalence of moderate or severe food insecurity in the population” for 2018-2020 is close to the Eastern Europe average – 13.91%. It is obvious that, unfortunately, the long period of decline in hunger in the world has ended, and COVID-19 has deepened the crisis (Swinnen and McDermitt, 2020; Laborde et al., 2020), this endangering the achievement of the second Sustainable Development Goal of the EU – “ending hunger”.

Considered to be sustainable, the European Union favours the short distribution chains, such as agri-food markets, modern direct selling channels or those having a maximum of one intermediary, implying a short geographic and social distance (Malak-Rawlikowska et al., 2019). There are three types of short channels: face-to-face (at the farm’s gate, in the agri-food market, etc.), in the proximity of the consumers, those that are aware of the local provenience of the products (cooperatives, communities, etc.) and at social distance, transferring information about the provenience of the products (Marsden et al., 2000; Malak-Rawlikowska et al., 2019). Despite the advantages of a close and trustworthy relationship between the producer and the customer in the short distribution channels, the competition of supermarkets and discount store chains is very high, these transporting merchandise from a large geographic and relational distance, to capitalize reduced workforce and production costs (Weber et al., 2019). At the same time, long distribution channels have as a result the anonymization and disconnection of the producers from the consumers (Wiskerke, 2009).

Transforming an agri-food chain in a sustainable one implies creating a balance between production and consumption (Sazvar et al., 2018), otherwise the production becomes waste. Maintaining the balance between the demand and the offer of sustainable products is possible through:

- Increasing the consumers’ interest in food coming from durable distribution chains, by educating people to better understand the concepts and changes needed to achieve sustainability (Garcia-Gonzalez et al., 2020).
- Maintaining an acceptable level of production costs while introducing the new processes in the activity of agri-food businesses – such as investing in ecologic technologies and decreasing, at least temporarily, the produced quantity of goods and the income of the organization. This aspect should be taken into consideration when initiating tax policies for sustainable agri-food and the incentives for businesses to adopt sustainable processes (Dessart et al., 2019), especially for the small ones.
- Reducing the disparities regarding the competition with:

- big agri-food businesses that are able to make economies of scale (Jarzebowski et al., 2020) for raw materials and services of marketing, transport, brokerage, and others;
- agri-food businesses outside the European Union that do not operate under the same regulation, especially considering that half of the agri-food sold in EU is imported (SAPEA, 2020).

Without these measures meant to maintain the balance between the demand and offer of sustainable products, the perceived risk by the farmers is high, so the change is not easily adopted. For instance, in 2019, Romania had only a 2,86% area in organic farming, compared to the 8.49% in the 27 EU countries (EUROSTAT, 2021b). Moreover, 50% of European farms are small, having less than 5 hectares (SAPEA, 2020), and 87% of the Romanian farms are very small, consuming more than 50% of their final production (EUROSTAT, 2021a), meaning that the farms' success has a direct impact on farmers' lives, not only on the economic level, but also on a social level. Even being aware of the importance of the ultimate benefit of the new regulations (protecting our planet and humane lives), in practice, the short-term benefits (financial gain to cover their families' needs) surpass it. Therefore, protecting small farmers, and other types of agri-food businesses, is of utmost importance.

Adopting sustainable practices depends on a multitude of behavioural factors that impact perceived risk: farmer knowledge, cognitive factors, perceptions of the costs and benefits of adopting change, perceptions of maintaining control, resistance to change, farmer goals, social norms, etc. (Dessart et al., 2019). In order to reduce the perceived risk and make the change acceptable for farmers, they should be educated about the whole process. There are technical solutions that have to be learnt, trade-offs to accept, incentives to acknowledge, etc.

Another important aspect in agri-food businesses is the surplus and waste management. Ecologically, food waste constitutes 8-10% of released gas emissions; sociologically, 20 million people are affected by malnutrition, and the related financial burden for the EU is 900 billion euros in economic costs and 800 billion euros in social costs (SAPEA, 2020). Food waste is found at all levels of the food industry: farms, food processing companies, wholesale companies, stores, restaurants, and consumers. Each year, one third of the food produced becomes waste (Pocol et al., 2020), but 50% of the food waste in high-income countries is at the household level (SAPEA, 2020). Each of these actors has a responsibility to manage food waste wisely – prevent waste, re-using products, recycling, recovery, and environmentally responsible disposal of the old used products. All these, but most importantly, reducing livestock breeding would reduce emissions and increase food safety (Mbow et al., 2019).

The efforts from the private sector should be supported by the municipality through regulations and specific facilities (e.g., differentiated garbage cans and differentiate management of each category in the local communities, offering incentives to companies, etc.). Acting in this direction, the SAPEA Report proposes a “circular approach” instead of the linear one provided by The Farm to Fork Strategy, favouring “the re-valorisation of unpreventable waste, redirecting it back into the supply chain” (SAPEA, 2020, p. 15). The circular food system includes production and consumption, as well as the management of surplus and waste (Jurgilevich et al., 2016).

Between 2010-2018, only 11-13% of the generated municipal waste has been recycled in Romania (National Institute of Statistics, 2018). Some Romanians, living in the rural area, use alternative ways of composting at home with a small appliance or the classic piling

process and, in some areas, there are efforts of small-scale, decentralized composting, companies turning food waste into organic-based fertilizers, cat litter, fuel pellets, etc. Therefore, for Romania and other new Member States, it will take a significant effort to catch up with the other European states in terms of food waste, when The Farm to Fork Strategy will be reinforced.

While some countries are still struggling with the basics, in many European countries the focus changes toward social responsibility, multiple entrepreneurial initiatives ensuring that food is not wasted while there are people who need it. ‘Too Good To Go’ is the app with the largest B2C marketplace, connecting people with companies that have a surplus of food in 15 countries to sell it at a small price (Too Good To Go, 2021). Olio is another app that allows businesses, as well as regular people from 60 countries (Olio, 2021), to share for free food and other items with people in their vicinity (5 kilometres). There are apps that help charities to obtain surplus food from retailers, websites that sell cheap out-of-date or close-to-date food, etc. These types of practices redirect the management of surplus and waste into the responsibility of all stakeholders in agri-food chains.

This article will further explore the coordinates of the sustainable activity of Romanian agri-food businesses, but also the extent to which Romanian agri-food producers are prepared to implement, or are already implementing, the new measures in their activities. Of course, this depends on the current level of use of green practices, similar to those proposed by the Green Deal, and on their attitude towards the new European strategic direction in the field of agriculture.

2. The attitude of the representatives of Romanian agri-food businesses towards the Green Deal – an exploratory research

Starting from the analysis of the scientific literature, as well as the analyses of the objectives and activities proposed by the Green Deal and the “From farm to consumer” Strategy, a qualitative research was carried out to assess the attitude of the representatives of Romanian agri-food businesses towards the new European strategic direction in regard to food chains.

2.1. Methodological notes

The overall scope of the research was to explore in a qualitative manner the attitude of managers, administrators, and business owners of agri-food businesses toward some of the most representative aspects of food chains in the context of the European Union Green Deal. The main objectives pursued were: (1) identifying the market of agri-food businesses; (2) identifying the components of the marketing channels used for the distribution of agri-food products; (3) positioning Romanian agri-food products in relation to the imported ones; (4) exploring the management of damaged agri-food products; (5) identifying the ways agri-food products are recycled; (6) identifying the energy sources used in the current activity of agri-food businesses; (7) identifying the environmental protection measures, proposed by the European Green Deal, implemented in the current activity of agri-food businesses, and (8) assessing the opportunity of implementing the environmental protection measures provided by the European Green Deal.

To collect data, a semi-directed questionnaire containing 20 semi-open and open questions was built and used. This questionnaire was placed on the online platform <https://isondaje.ro> and the invitations to participate were sent during November 2021, by e-mail, to the young managers, administrators and / or owners of agri-food businesses in Romania, participants in the 2021-2022 session of the training program “Young Leaders in Agriculture”, organized and held under the aegis of the Romanian Farmers’ Club. The “Young Leaders for Agriculture” program prepares farmers’ children, university graduates, up to 35 years of age, to ensure the succession and continuity of the family business, the representation of farmers’ interests at European and national levels and assume the leading role in their own business and in the community by increasing the involvement of young people in social responsibility projects.

The invitations have been accepted by 26 respondents who have the following demographic profile: young (half are under 35 years old, 12 between 36 and 50 years old and only one over 50 years old), they occupy management positions in the company (12 are general manager) or in its shareholding (10 are shareholders or associates), have secondary education (9), university (9) and postgraduate (8), but only 10 have undergraduate or postgraduate studies in the agri-food field.

The organizations represented by the respondents grow predominantly plants (22 out of the total of 26), but also carry out activities in mixed farms (6), in processing raw food – meat, fish, vegetables, fruits, and the products resulting from them (4), transporting agri-food products (4), wholesale raw agricultural products and/or live animals (3), store agri-food products (3), raise live animals (3), retail food, beverages, and tobacco (2) or even manufacture, sell, rent or repair machinery, machinery and technology necessary for agriculture (2). Most of them are registered with the National Trade Register (22), but they mainly use staff without an employment contract (half of them have no employees, and in 20 of them work between 2-9 people without being employed). The overwhelming majority of them include micro-enterprises (22) with an annual turnover of less than 2 million euro, but there are also four organisations that can be classified as small (2) and medium-sized enterprises (2) respectively (2).

The respondent organizations, having such a wide range of activity fields, covered all the stages agri-food products go through in a food chain, thus ensuring the relevance of the results of this research.

2.2. Results and discussion

The investigated agri-food businesses tend to cover the national market with their products and services, almost half of the respondents (12 out of 26) defining it as *the market area* of their own organization. If we consider that four other organizations serve regional markets, we can appreciate that the agri-food businesses present on the Romanian market have reached a level of development high enough to offer products and services to the end consumers or intermediaries located in all the development regions of the country. Two niche segments have also been identified, including organizations that cover only the local market (5 out of 26), respectively, that serve the international market, exclusively member countries of the European Union (5 out of 26).

The structure of the 26 agri-food organisations in relation to the area of the covered market indicates, first, the orientation toward serving the national market, supported by a

consolidated presence at local or regional level, and secondly, the existence of a segment of agri-food business capable of addressing the international market, at this time, specifically at the level of the Member States of the European Union.

The agri-food businesses under investigation use a mix of *marketing intermediaries* that includes, on average, two or three (2.76) components of marketing channels in order to distribute to individual or organizational consumers the offered products. Almost half of them (12 out of 26) supply the raw materials to agri-food processing firms, and an equally important segment (11 out of 26) distributes its products through wholesalers.

Selling products through short distribution channels, the farmers' home gate and through local shops (mentioned by three of the five organisations activating on the local market) tends to represent the most popular marketing channels used by the agri-food businesses that serve the *local markets*. The agri-food markets (mentioned by two of the five organisations) complement the mix of marketing intermediaries that address the segment of individual consumers through short channels. The agri-food businesses present at the local level rarely address the segment of industrial consumers (two mentions in the total of five), being limited both quantitatively and qualitatively. The penetration of online distribution across this category of agri-food organisations is rather low (a mention in the total of five), since the local markets are able to serve at this level on reasonable terms using traditional marketing intermediaries.

Agri-food markets (mentioned by all four organisations) tend to be the marketing channel most used to distribute products to consumers by agri-food businesses serving *regional markets*. Selling to wholesalers, selling online, and selling at their home gate (each of which were mentioned by three out of four organisations) complements the set of marketing intermediaries used to address the segment of individual consumers. The more diversified structure of the mix of marketing intermediaries is the consequence of moving to a higher level of covered market, regional markets involving a more consistent distribution and promotion effort compared to the local ones (hence the emergence of wholesalers within the mix). Also, the intention to strengthen the organization on the local market is regarded as the basis of the expansion at the regional level (hence the maintenance of the door-to-door sale and the expansion of online distribution). Serving regional markets has also led to the integration of large-area retail units (hyper and supermarkets) within the mix of marketing intermediaries, which offer significant opportunities in approaching a larger audience, a more demanding audience in terms of product quality and of products with additional services, designed to create added value for the consumer. Last but not least, regional agri-food businesses tend to address to a greater extent the industrial consumer (three indications in the total of four) by delivering products in the form of raw materials, used by the other organisations to process agri-food products.

The mix of marketing intermediaries for agri-food businesses on the *national market* is significantly different compared to those on the local or regional markets. The producers sell through long distribution channels to the wholesalers and large retail establishments (six and five, respectively, indications in the total of 12). In order to best cover the market, including at local and/or regional level, these agri-food businesses also use short channels – online distribution (three mentions in the total of 12), local shops or even their own shops (three and two mentions, respectively) and less agri-food markets or door-to-door selling (mentioned once). This structure of the mix of marketing intermediaries illustrates the very high attention paid to the individual consumer without, however, harming the industrial consumer – four of

the total of 12 agri-food businesses at national level distribute their products to organisations that use them as a raw material to obtain processed agri-food products.

Wholesalers and processors of agri-food raw materials (with four and three mentions, respectively, in a total of five) tend to represent the main marketing intermediaries through which agri-food businesses addressing the *international markets* distribute their products. In their case, the higher attention paid to the industrial consumer is obvious, coupled, however, with the coverage of local, regional and/or national markets, using mainly local shops, agri-food markets, door-to-door selling or even online distribution (each mentioned twice in the total of five) and less the large-area retail establishments (hyper or supermarkets) or their own shops (mentioned only once).

Viewed at the level of the entire investigated group, the structure of the mix of marketing intermediaries, synthesized in Figure no. 1, is characterized by a variable geometry, capable of supporting the adequate adaptation of the agri-food business to the dimensions and characteristics of the served markets, maintaining in the same time a balance between the individual and the industrial consumer. The transition from the local level, through the regional one, to the national or international level tends to involve a similar transitional evolution as from the gate or in the agri-food markets to the wholesalers, large-area retailers, and processors of raw materials, respectively, an increased attention to the segment of industrial consumers, of course without neglecting the individual consumers. Serving the national and international markets is built on the consolidation and proper coverage of the local and regional markets.

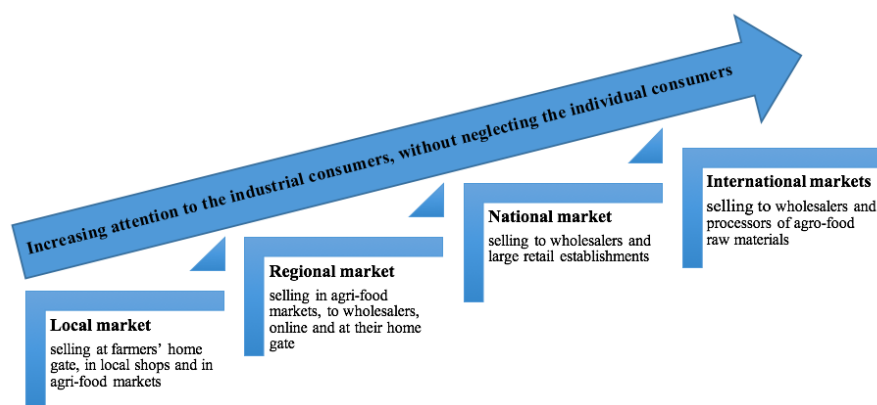


Figure no. 1. The mix of marketing intermediaries depending on the approached market

Joining the European Union, the Romanian market was opened for imported agri-food products, and, at the same time, opportunities were offered for Romanian products to be promoted and sold on other markets. But, apparently, the *competition with imported products* became far too intense to allow the Romanian agri-food businesses to balance it, by taking advantage of the opportunities offered by the foreign markets. The representatives of the investigated agri-food businesses agreed that they cannot compete with imported products because they do not have access to the same facilities (processing, packaging, branding – score 0.46 on the Likert scale) or to the same channels of distribution (mainly to the networks of retail commercial units – score 0.34), making it significantly more difficult to bring their

own agri-food products to the market. Romanian agri-food businesses tend to face difficulties in terms of operating costs, also: their representatives tend to agree that imported products are cheaper without having an explanation on how these suppliers manage to keep prices at such a low level (score 0.76) and that the impossibility of reducing their own prices makes products more expensive, so less competitive compared to the imported ones in terms of price (score 0.38). Given the fact that Romanian agri-food products look at least comparable to the imported ones, they could be sold at a similar price (score 1.04), so the arguments supporting the competitiveness of local products remain the consumers' local patriotism, many choosing to buy Romanian products (score 0.38), and the ecological character of the products (0.34). These arguments are undoubtedly solid, but not enough to support the Romanian agri-food products in competition with the imported ones.

The quantitative explanations highlighted by the scores presented above are complemented by the qualitative elements used by the respondents to describe the competition with the imported products. Most of the respondents perceive the competition between their own products and the imported ones as "unfair" especially because "imported products enter the market at dumping prices, prices facilitated by higher subsidies allocated to agricultural crops by other states". Under these conditions, local producers feel that "the Romanian products are not supported by the government and there is no desire to help Romanian producers to develop". Although it is very important, the price is not the only factor that supports the competitiveness of imported products, the distribution also intervenes in the discussion: "it is a fierce competition, imported products are better promoted and more aggressive, they have much better supply logistics, they have the sale in large chain stores that are found everywhere, they have regional warehouses where they concentrate the products! Although Romanian products may be more qualitative, the prices must be kept low to survive on the market, and this is where the sustainability problem comes in: low price/good quality". Obviously, the Romanian consumer "chooses imported products, because they are cheaper" and "have a commercial aspect", but Romanian products are appreciated for their "incomparable taste and quality", because they are "fresh and of better quality". Romanian consumers "are uneducated and choose large and perfect apples at the expense of the normal ones. Thus, we are exploited by Poland, Italy, the Netherlands, which sell their expensive organic products in their country and the expensive non-ecological products in our country. On the other hand, Romanians sell their organic products cheaply both in the European countries, and in our own country, and for non-ecological products... we don't really find places on the shelf." Unfortunately, "the quality we offer does not change the price. Our products should be more expensive because the cost of production is higher: we do not have either the aid from abroad, or the labour force, the taxes and all the bureaucracy are excessively high in Romania." And when to the specific challenges of the management of the agri-food business is added a rather restrictive external marketing environment, active Romanian organizations are facing a competition that is difficult to counteract and almost impossible to overcome.

During the production and/or marketing activities, the agri-food businesses are encountering the problem of *product deterioration*. Perhaps surprisingly, the most frequent solution adopted on this matter by the management of Romanian agri-food businesses to avoid food wasting is donating (mentioned by 11 of the total 26 respondents), which highlights a specific feature of a behaviour characterized by a high level of social responsibility. Thus, Romanian companies contribute to reducing the level of food insecurity at the local and national level, supporting the reach of the EU's second Sustainable Development Goal – "zero hunger".

This behaviour is also reconfirmed by the fact that none of the respondents indicated that they are burning or throwing the waste into the river or forest, and only three of them mentioned throwing them into the landfill. The concern to find alternatives to offer value again to damaged products confirms once again that most Romanian agri-food businesses manage waste efficiently and responsibly, minimising the associated losses: nine of the respondents turn damaged products into other products. For example, they produce jam from strawberries that are still in good condition and the jam is either sold, or used for their own consumption; they also produce food for animal consumption. Nine other respondents sell the damaged products to processors at a lower price to be processed into other products, and nine others use it as fertilizer or compost.

Considering the foreshadowed climate change, the European Green Deal proposes a set of measures to ensure the protection of the environment during the agricultural activities, which will determine changes in the working manner, which could generate significant reserves: the reduction or elimination of pesticides and fertilisers, the use of environmentally friendly technologies, the use of bio-fertilisers, protein feed and biochemical products, the reduction or elimination of plowing works, mechanical weeding, keeping agricultural crop residues in the field, the realization of interspersed crops and/or crop rotation, the responsible use of veterinary medicinal products and medicated feed, the forests' conservation and development, the development of agroforestry, hedges, wooded areas on parcels and permanent or temporary grassland systems, planting woody and herbaceous energy plants on floodplains, wetlands or sandy terrains, the use of low energy consumption equipment, the use of renewable energies, selling the products to companies that use processing methods that protect the environment, investments in anaerobic digesters for the production of biogas from agricultural waste and residues such as manure, and biogas production from other sources of waste and residues, such as the food and beverage industry, sewage, wastewater and municipal waste.

A comparative assessment of these 16 measures for environmental protection, advanced through the European Green Deal, is realized from two perspectives – on one hand, the frequency of their implementation (expressed by means of an average score between 0 – the minimum value – and 2 – the maximum value) and, on the other hand, the opportunity to implement them (expressed by means of the welcome-inappropriate spread determined at the level of each measure, between 2 – the minimum value – and 22 – the maximum value) as perceived by the managers, administrators, and/or owners of the investigated agri-food businesses. This allows the identification of four categories of measures and related strategy (Figure no. 2):

- measures with an over-the-average frequency of implementation and, respectively, the opportunity for above-average implementation, which include the measures that agri-food businesses tend to put into practice permanently or with a relatively high frequency, because they significantly consider them to be welcome. In this category, we find (with specific scores and gauges): the use of bio-fertilisers, protein feed, and biochemical products (1.13 and 14), the realization of interstitial crops and/or crop rotation (1.84 and 21), the responsible use of veterinary medicinal products and medicated feed (1.87 and 13), and the use of low-energy equipment (1.04 and 18). In this case, a *Capitalize Strategy* is proposed, by recognizing the efforts and results obtained by the organizations, even rewarding them through prizes and policies favourable to their activity.

- measures with an above-average implementation frequency, but an opportunity for implementation below the average, including measures that agri-food businesses tend to put into practice on a permanent basis or with a relatively high frequency, but in relation to which they have significant reservations about the degree to which they are welcome. In this category, we find (with specific scores and gauges): reduction or elimination of pesticides and fertilizers (1.28 and 8), reduction or elimination of plowing works (1.09 and 2), conservation and development of forests (1.26 and 11), and development of agroforestry, hedges, wooded areas on parcels, and permanent or temporary grassland systems (1.05 and 12). In this situation, when the organizations are doubting the opportunity of the measures they practice, it is necessary to have a *Reassure Strategy* ensuring that the right decision has been made to implement the measures; this is possible by recalling the measure's benefits, in the media, at conferences and various meetings where representatives of agri-food companies participate; thus, the cognitive dissonance will decrease.

- measures with a below-average implementation frequency, but an above-average implementation opportunity, which includes measures that agri-food businesses tend to put into practice rather occasionally, but which they consider to be welcome. In this category, we find (with specific scores and gauges): the use of renewable energies (0.88 and 17) and the sale of products to companies that use processing methods that protect the environment (0.90 and 15). In this situation, extrinsic motivation is sought, through incentives, in order to implement the measures; these can be named *Support Strategy*.

- measures with a below-average frequency of implementation and opportunity for implementation, which include measures that agri-food businesses tend to put into practice rather occasionally or with a relatively low frequency because they have significant reservations about the degree to which these measures are welcome. In this category, we find (with specific scores and gauges): the use of organic production technologies (0.90 and 13), mechanical weeding (0.88 and 11), keeping agricultural crop residues in the field (0.95 and 9), cultivation of woody and herbaceous energy plants on floodplains, wetlands or sandy terrains (0.93 and 13), investments in anaerobic digesters for the production of biogas from agricultural waste and residues such as manure (0.92 and 13) and biogas production from other sources of waste and residues, such as the food and beverage industry, sewerage, wastewater and municipal waste (0.50 and 12). The *Educate Strategy* is extremely necessary in these situations, when useful measures in environmental protection are not put into practice because they are not understood enough to be considered appropriate or possible. This strategy can be embodied in the provision of courses and grants in order to encourage organizations to try, with minimal risk, the implementation of those measures.

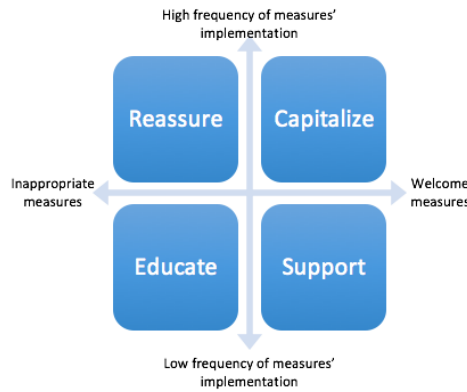


Figure no. 2. Strategies meant to support the implementation of The Green Deal measures

Threats to implementing the Green Deal are identified, also, among the multitude of less favourable aspects mentioned by the respondents: the low predictability of the agri-food market and the entire Romanian economy; the lack of adequate production technologies and equipment, the lack of irrigation systems; the absence of specialized research to produce new Romanian hybrid food or varieties, adapted to the local climatic conditions; the absence of qualified personnel; the high production costs generated by high labour costs, excessive taxation, high fuel and energy prices; difficult access to, or even the absence of, marketing chains for agri-food products to facilitate their efficient distribution; fierce competition with the imported products and unfair competition with the false local producers; the absence of coherent policies and strategies in this field (phytosanitary, fertilisation or organic production).

Conclusions

The Romanian agri-food businesses operate in a rather hostile context that requires them to identify solutions capable of highlighting the resources they have in order to capitalize on the existing, not very numerous, opportunities.

The qualitative research carried out highlighted the ways Romanian agri-food businesses define their market area and cover it by appealing to appropriate marketing intermediaries, position themselves and compete with imported agri-food products, and behave socially responsibly with regard to damaged agri-food products and recycling of agri-food products.

The need to implement a set of new environmental protection measures, proposed by the European Green Deal, will create a significant additional pressure on the activity of Romanian agri-food businesses. The fact that, at the moment, only one third of them are in the quadrant of those with an above the average frequency of implementation and perceived opportunity for implementation, indicates the need for a sustained approach, in public-private partnership, which, on the one hand, should extend the awareness among managers, administrators, and/or owners of agri-food businesses regarding the opportunity of implementing all appropriate and applicable measures and, on the other hand, should provide concrete, financial, technological, and know-how support for their implementation. The

results of the exploratory research show that the perception of the measures' appropriateness is sufficiently favourable among the very small number of respondents who described them as "impossible to apply" (illustrative of this is the fact is that no respondent considered the use of low-energy equipment or renewable energy sources in this way).

In order to achieve the Green Deal's objectives and overcome resistance to change, it is necessary to complement the set of environmental protection measures with education for farmers and consumers. Farmers need to understand the need for change, they need to be involved in creating it, making it acceptable to them, and be encouraged to adopt change through financial policies. Consumers could also be motivated to buy products from sustainable agri-food chains through public, fiscal, or non-fiscal policies, but also through private initiatives. Non-profit organizations or companies interested in these areas can build extensive marketing campaigns to help customers understand the need for change and motivate them to adhere to it.

Withal, the research results contribute to the theoretic field, by proposing a strategic matrix (Figure no. 2) to support the implementation of the Green Deal measures and by identifying the coordinates of the marketing intermediary mix according to the approached market (Figure no. 1).

Given the specific limits of a qualitative exploratory approach, the results of the research can serve as a solid starting point for the design of an in-depth research, which would provide all the necessary information to substantiate the market behaviour of Romanian agri-food businesses, in the context of the transformations generated by the implementation of the European Green Deal.

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References

- Arnalte-Alegre, E. and Ortiz-Miranda, D., 2013. The 'Southern Model' of European Agriculture Revisited: Continuities and Dynamics. In: D. Ortiz-Miranda, A. Moragues-Faus and E. Arnalte-Alegre eds., 2013. *Agriculture in Mediterranean Europe: Between Old and New Paradigms. Research in Rural Sociology and Development*. Bingley: Emerald Group Publishing Limited, pp. 37-74. [https://doi.org/10.1108/S1057-1922\(2013\)0000019005](https://doi.org/10.1108/S1057-1922(2013)0000019005)
- Brazilian, M., Bradshaw, M., Goldthau, A. and Westphal, K., 2019. Model and manage the changing geopolitics of energy. *Nature*. [online] Available at: <<https://www.nature.com/articles/d41586-019-01312-5>> [Accessed 20 December 2021].
- Burdick, B., 1994. *Climate change and agriculture. The agricultural industry = offender and victim. Klimaänderung und Landbau. Die Agrarwirtschaft als Taeter und Opfer*. Germany: N. [online] Available at: <<https://www.osti.gov/etdeweb/biblio/6941852>> [Accessed 20 November 2021].

- Chesnoiu, I.A., 2021. Perception of Farmers on EC Recommendations for Romania's CAP Strategic Plan. In: R. Pamfilie, V. Dinu, L. Tăchiciu, D. Pleșea and C. Vasiliu, *7th BASIQ International Conference on New Trends in Sustainable Business and Consumption*. Foggia, Italy, 3-5 June 2021. Bucharest: ASE, pp. 862-870. DOI: 10.24818/BASIQ/2021/07/108.
- Consiliul European, 2021. *Conferința ONU privind schimbările climatice (COP26), Summitul liderilor mondiali, Glasgow, Regatul Unit, 1 noiembrie 2021*. [online] Available at: <<https://www.consilium.europa.eu/ro/meetings/international-summit/2021/11/01/>> [Accessed 20 November 2021].
- Dessart, F.J., Barreiro-Hurlé, J. and van Bavel, R., 2019. Behavioural factors affecting the adoption of sustainable farming practices: a policyoriented review. *European Review of Agricultural Economics*, [e-journal] 46 (3), pp. 417-471. doi:10.1093/erae/jbz019.
- EUROSTAT, 2021a. *Data Browser, Farm indicators by agricultural area, type of farm, standard output, legal form and NUTS 2 regions*. [online] Available at: <https://ec.europa.eu/eurostat/databrowser/view/ef_m_farmleg/default/bar?lang=en> [Accessed 7 December 2021].
- EUROSTAT, 2021b. *Data Browser, Area under organic farming*. [online] Available at: <https://ec.europa.eu/eurostat/databrowser/view/sdg_02_40/default/table?lang=en> [Accessed 7 December 2021].
- European Commission, 2020. *The Farm to Fork Strategy – For a fair, healthy and environmentally-friendly food system*. [pdf] Available at: <https://ec.europa.eu/food/system/files/2020-05/f2f_action-plan_2020_strategy-info_en.pdf> [Accessed 7 December 2021].
- European Commission, 2021a. *Farm to Fork Strategy*. [online] Available at: <https://ec.europa.eu/food/horizontal-topics/farm-fork-strategy_en> [Accessed 4 December 2021].
- European Commission, 2021b. *A European Green Deal. Striving to be the first climate-neutral continent*. [online] Available at: <https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en> [Accessed 4 December 2021].
- Food and Agriculture Organization of the United Nations (FAO), 2021. *Sustainable Development Goals*. [online] Available at: <<https://www.fao.org/sustainable-development-goals/indicators/212/en/>> [Accessed 7 December 2021].
- Giurca, D., 2008. Semi-subsistence farming—prospects for the small Romanian farmer to choose between a “way of living” or efficiency. *Agricultural Economics and Rural Development*, 5(3-4), pp. 215-230.
- Hassanein, N., 2003. Practicing food democracy: A pragmatic politics of transformation. *Journal of Rural Studies*, [e-journal] 19(1), pp.77-86. [https://doi.org/10.1016/S0743-0167\(02\)00041-4](https://doi.org/10.1016/S0743-0167(02)00041-4).
- Hubbard, C., Ivanova, N., Luca, L. and Mishev, P., 2014. Semi- subsistence Farming in Romania and Bulgaria: a Survival Strategy? *EuroChoices*, [e-journal] 13(1), pp.46-51. DOI:10.1111/1746-692X.12052.
- Intergovernmental Panel on Climate Change (IPCC), 2019. *Special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems. Summary for policy-makers*. [pdf]

- Available at: <https://www.ipcc.ch/site/assets/uploads/2019/08/4.-SPM_Approved_Microsite_FINAL.pdf> [Accessed 20 November 2021].
- Intergovernmental Panel on Climate Change (IPCC), 2021. *Climate Change 2021: The Physical Science Basis, 6st Assessment Report*. [online] Available at: <<https://www.ipcc.ch/report/ar6/wg1/#SPM>> [Accessed 20 November 2021].
- Jarzębowski, S., Bourlakis, M. and Bezat-Jarzębowska, A., 2020. Short Food Supply Chains (SFSC) as Local and Sustainable Systems. *Sustainability*, [e-journal] 12. <https://doi.org/10.3390/su12114715>.
- Jurgilevich, A., Birge, T., Kentala-Lehtonen, J., Korhonen, K., Pietikäinen, J., Saikku, L. and Schösler, H., 2016. Transition towards circular economy in the food system. *Sustainability*, [e-journal] 8. doi:10.3390/su8010069.
- Laborde, D., Martin, W., Swinnen, J. and Vos, R., 2020. COVID-19 risks to global food security. *Science*, [e-journal] 369(6503), pp. 500-501. DOI: 10.1126/science.abc4765.
- Lopez Cifuentes, M. and Gugerell, C., 2021. Doof decocracy: possibilities under the frame of the current food system. *Agriculture and Human Values*, [e-journal] 38, pp.1061-1078. <https://doi.org/10.1007/s10460-021-10218-w>.
- Malak-Rawlikowska, A., Majewski, E., Waś, A., Borgen, S.O., Csillag, P., Donati, M., Freeman, R., Hoàng, V., Lecoeur, J.-L., Mancini, M.C., Nguyen, A., Saidi, M., Tocco, B., Török, Á., Veneziani, M., Vittersø, G. and Wavresky, P., 2019. Measuring the Economic, Environmental, and Social Sustainability of Short Food Supply Chains. *Sustainability*, [e-journal] 11. <https://doi.org/10.3390/su11154004>.
- Marsden, T.K., Banks, J. and Bristow, G., 2000. Food supply chain approaches: Exploring their role in rural development. *Sociologia Ruralis*, [e-journal] 40(4), pp.424-426. <https://doi.org/10.1111/1467-9523.00158>.
- Mathijs, E. and Nivelin, N., 2004. Subsistence farming in central and eastern Europe: empirical evidence from Albania, Bulgaria, Hungary, and Romania. *Eastern European Economics*, [e-journal] 42(6), pp.72-89. <https://doi.org/10.1080/00128775.2004.11041093>.
- Nastis, S.A., Mattas, K. and Baourakis, G., 2019. Understanding Farmers' Behavior towards Sustainable Practices and Their Perceptions of Risk. *Sustainability*, [e-journal] 11. <https://doi.org/10.3390/su11051303>.
- National Institute of Statistics, 2018. *Sustainable development statistical indicators*. [online] Available at: <https://insse.ro/cms/files/Web_IDD_BD_en/index.htm> [Accessed 7 December 2021].
- Olio, 2021. *Our impact*. [online] Available at: <<https://olioex.com/about/our-impact/>> [Accessed 20 December 2021].
- Petetin, L., 2020. The COVID-19 Crisis: An Opportunity to Integrate Food Democracy into Post-Pandemic Food Systems. *European Journal of Risk Regulation*, [e-journal] 11(2), pp.326-336. <https://doi.org/10.1017/err.2020.40>.
- Pocol, C.B., Pinoteau, M., Amuza, A., Burlea-Schiopoiu, A. and Glogovețan, A.-I., 2020. Food Waste Behavior among Romanian Consumers: A Cluster Analysis. *Sustainability*, [e-journal] 12. <https://doi.org/10.3390/su12229708>.

- SAPEA (Science Advice for Policy by European Academies), 2020. *A sustainable food system for the European Union. Evidence Review Report No. 7*. [online] Berlin: SAPEA. Available at: <<https://www.sapea.info/topics/sustainable-food/>> [Accessed 26 November 2021].
- Sazvar, Z., Rahmani, M. and Govindan, K., 2018. A sustainable supply chain for organic conventional agro-food products: The role of demand substitution, climate change and public health. *Journal of Cleaner Production*, [e-journal] 194(1), pp.564-583. <https://doi.org/10.1016/j.jclepro.2018.04.118>.
- Science for Environment Policy, 2012. *Carbon footprint of food adds along the food chain*. [pdf] Available at: <https://ec.europa.eu/environment/integration/research/newsalert/pdf/268na1_en.pdf> [Accessed 4 December 2021].
- Swinnen, J. and McDermott, J., 2020. COVID-19 and Global Food Security. *Agricultural Economics Association of Agricultural Economists*, [e-journal] 19(3), pp.26-33. <https://doi.org/10.1111/1746-692X.12288>.
- Too Good To Go, 2021. *Too Good To Go brings food waste solution to Washington, D.C.* [online] Available at: <<https://toogoodtogo.com/en-us/press/releases/dclaunch-pressrelease>> [Accessed 20 December 2021].
- Weber, H., Wiek, A. and Lang, D., 2020. Sustainability entrepreneurship to address large distances in international food supply. *Business Strategy & Development*, [e-journal] 3(3), pp.318-331. <https://doi.org/10.1002/bsd2.97>.
- Wiskerke, J.S.C., 2009. On places lost and places regained: Reflections on the alternative food geography and sustainable regional development. *International Planning Studies*, [e-journal] 14(4), pp.369-387. <https://doi.org/10.1080/13563471003642803>.
- Wittman, H., 2011. Food sovereignty: A new rights framework for food and nature? *Environment and Society: Advances in Research*, [e-journal] 2(1), pp.87-105. <https://doi.org/10.3167/ares.2011.020106>.