ISSN 2661-5150

# SEAS

ECONOMIC JOURNAL

# Three Seas Economic Journal

*Vol. 4 No. 2 (2023)*

**Riga 2023**

**Three Seas Economic Journal**, Volume 4 Number 2. Riga, Latvia : "Baltija Publishing", 2023, 42 pages.

The purpose of the journal **"Three Seas Economic Journal"** seeks to cover a wide range of issues of development and interaction of the countries of the European continent and to be at the forefront of important research. Discover the authors' researches covering relevant, discursive, and innovative topics in the most important scientific areas of social development.

**Three Seas Economic Journal**, a Scientific Journal of the Publishing House "Baltija Publishing", is published four times per year.

Latvia registered mass information mediums (MIM). Registration No. 000740448.

**Indexed in the following international databases:**
Index Copernicus; ERIH PLUS; Directory of Open Access Journals (DOAJ); Research Papers in Economics (RePEc); Google Scholar.



Printed and bound in Riga by LLC Publishing House "Baltija Publishing".

Journal is available: www.baltijapublishing.lv/index.php/threeseas

DOI: https://doi.org/10.30525/2661-5150

ISSN 2661-5150 (PRINT)
ISSN 2661-5290 (ONLINE)

**Three Seas Economic Journal**. Volume 4 Number 2 (2023).


Izdevniecība "Baltija Publishing"
Valdeku iela 62-156, Riga, LV-1058
Iespiests tipogrāfijā SIA "Izdevniecība "Baltija Publishing"
Parakstīts iespiešanai: 2023. gada 30. jūnijs
Tirāža 100 eks.

# CONTENTS

DOI: https://doi.org/10.30525/2661-5150/2023-2-2

# INTEGRATION LINKS AND METHODS OF THEIR IMPROVEMENT FOR THE EFFECTIVE FUNCTIONING OF THE MEAT AND FOOD SUBCOMPLEX

**Liudmyla Boltovska**[1]

**Abstract.** The *subject of research* is the current trends in the development of the meat products sub-complex of Ukraine and the formation of integration ties as an integral factor of influence on the effective activity of the livestock industry. Among the branches of agriculture, animal husbandry is a source of important food products for humans: milk, meat, eggs, and supplies various types of raw materials for industry (food, light pharmaceuticals, etc.). The growth of animal husbandry in the agricultural sector of Ukraine is formed in the meat products subcomplex, which unites producers of agricultural (animal) products, trade organisations and enterprises of the meat processing industry in the process of livestock and poultry breeding, their processing and sale of finished products. An important factor contributing to the sustainable development of the meat products sub-complex is the effective use of its components, i.e., agricultural enterprises, peasant farms, private farms of the population. The problem of sustainability in agricultural production is more complex than in other sectors of the economy. This is due to the fact that agricultural products are almost irreplaceable and the demand for them is inelastic. *Methodology*. The theoretical and methodological basis of the research were general and special methods of studying economic phenomena and processes, basic rules of management theory and general scientific principles of economics, logical and qualitative analysis and synthesis, system structural analysis. The research was conducted on the basis of the application of general scientific methods and techniques: the method of cause-effect analysis – to identify problems in the development of enterprises of the meat products sub-complex and the industry; logical generalisation – to form conclusions and proposals; factor analysis – to identify the influence of certain factors on the development of enterprises of the meat products subcomplex. The results of the research will broaden the scientific understanding of the integration processes in the meat products subcomplex, help to overcome the fragmentation of scientific knowledge in this area, contribute to the formation of information and applied research, and can be used in the development of programmes for the development of the meat products subcomplex. *Practical implications.* The choice of any development strategy requires the study of all factors affecting the effective operation of the company in the future, therefore the study of integration relations and the study of methods for their improvement is an important aspect in the formation of the company's development strategy. *Value/originality.* On the basis of the peculiarities of the activities of the enterprises of the meat products subcomplex, it is worthwhile to focus on the directions of improving the integration relations of the functioning of the meat products subcomplex on the basis of the use of vertical integration, which will contribute to the coordination of the economic interests of the participants and, in general, to the growth of production volumes, the improvement of the quality of animal products and food and environmental safety in general, in solving an important scientific task of the development of the food products subcomplex on the basis of a complex system of measures aimed at preserving and restoring the potential of the interrelated industries.

**Key words:** meat product subcomplex, market of meat and meat products, sustainable development, management of dynamic processes, integration links.

**JEL Classification:** A10, A11, B17, B27, D13, D24

[1] Vinnytsia National Agrarian University, Ukraine *(corresponding author)*
Email: liudmyla.boltovska@gmail.com
ORCID: https://orcid.org/0000-0002-6202-998X
ResearcherID: L-3460-2018

## 1. Introduction

The meat subcomplex is an important part of the economy and the main component of the country's food security. However, due to the decline in animal husbandry, the number of livestock, with the exception of poultry, is decreasing every year, which has a negative impact not only on the population's consumption of meat products, but also on the country's economy in general.

The development of the meat market in Ukraine requires scientifically based actions, one of which is the management of the integration ties of the meat products subcomplex.

Ukraine is currently implementing a model for the development of the meat products subcomplex based on vertically integrated industrial complexes with a full production cycle – from compound feed production to meat processing. Vertical integration is mainly characteristic of poultry and pig farming enterprises and the processing of their products, since in these industries there is a high level of concentration and mechanisation, which contributes to achieving efficiency due to the scale of production in large enterprises.

The **purpose of the study** is a theoretical substantiation and development of methodical and practical approaches to the formation of organizational and economic principles of management of integration ties of the meat products subcomplex.

The **objective of this study** is to select directions for improving the integration links of the meat and food subcomplex.

## 2. Development of Integration Processes in the Meat and Food Subcomplex

The development of integration processes in the industry, skipping the stage of the contractual form of relations characteristic of world practice, immediately began with the most rigid option of integration, based on the transfer of ownership and the centralisation of management in the hands of the integrator company.

In many countries, particularly in Europe, vertical integration through ownership is practically non-existent, and is instead based on feed mills and meat processing plants operating independently of each other, and on livestock farming providing the raw materials needed for meat processing. The integration of agriculture into big business takes place through the conclusion of long-term contracts for the supply of products (Chumachenko, 2018). In Ukraine, small farms are not integrated into vertical production chains and occupy separate, narrow niches in the food market.

In addition, the vertical integration of production makes it possible to provide the raw material base for meat processing in the required quantities and with guaranteed quality; to reduce transaction costs; to minimise logistics costs by clustering the entire production cycle in a given area; to optimise the tax burden by excluding taxes on intermediate products and by relocating production to the area with more favourable tax conditions; to reduce business risks by allocating them to different market segments and controlling the entire production and sales chain; by providing full control over the quality of raw materials and their complex processing, expand the range of products, respond to changing consumer demands, increase the competitiveness of products, reduce the cost price; to improve information security of activities.

As a result of the combination of the above-mentioned advantages, a synergistic effect occurs – the appearance of new system properties in the integrated formation, which ensure that the overall effect is greater than the sum of the effects of its participants acting separately.

At the same time, the integration processes in the domestic meat products sub-complex had negative economic and social consequences. These include the monopolisation of the market and the reduction of competition, the reduction of opportunities for development and the displacement of small and medium-sized enterprises from the sector, the creation of barriers to market entry, the unavailability of agricultural land to small producers and owners of personal subsidiary farms, which were put at the disposal of integrated structures and in some cases formed latifundia; political and economic lobbying, including the obtaining of state support; the emergence of contradictions in the economic interests of the participants in integrated formations; the increase in unproductive costs of managing the extensive organisational structures of agricultural holdings.

For the further development and effective functioning of the meat subcomplex in the

conditions of market relations, it is necessary to combine the efforts of enterprises and branches of the agricultural sector and the food industry on the basis of cooperation and integration. This will make it possible to concentrate labour, material and financial resources on the production of final products, to restore the equivalence of exchange between industries, to use available production capacities and resources rationally, to harmonise the economic interests of commodity producers and to coordinate actions for their protection on the market.

In society, as industrial relations develop, the processes of cooperation and integration converge and take on a new character. And here the emphasis is on the "interpenetration", the "fusion" of industries or business units, i.e., closer industrial relations. The intensity of these links is not the same. It is determined by the degree of unity of purpose of the integrating units. Therefore, an important feature of cooperation and integration is the unity of the final useful result as a general objective of the functioning of agro-industrial formations (Radchenko, 2019).

Cooperative forms of management are of particular interest in integration processes. They offer great opportunities for establishing closer production and economic links of mutual interest.

Cooperation is carried out in three directions: intra-enterprise cooperation; cooperation of subjects of entrepreneurial activity in the field of agribusiness and individual farms; interfarm cooperation at the district and regional levels. At the first level of cooperation, the association of labour collectives makes it possible to already develop cooperative relations within the enterprise, to direct them towards a common interest in increasing the efficiency of production.

The second direction of cooperation development is the creation of agricultural production cooperatives on the basis of reorganised agricultural enterprises.

Cooperatives of subjects of entrepreneurial activity in the field of agriculture and individual farms are created for the purpose of consolidation of production, unification of separate production functions – distribution, processing, sale of products; implementation of financial and accounting operations and maintenance of services, etc.

The development of the cooperative movement at the district level includes the production of agricultural products, their harvesting, storage, processing, trade, credit operations and other business activities at the district level. Inter-economic cooperation is based on the development of two inseparable and interdependent processes: the division of labour (specialisation) and the expansion of production links between specialised enterprises.

Depending on the natural and economic conditions, the type of production relations and the composition of cooperative enterprises in agriculture, the following main areas of cooperation have developed:
– on the basis of intra-industry division of labour;
– by organising joint production on a share basis;
– on the basis of unification of all production activities of specialised farms;
– on the basis of the union of agricultural enterprises with processing enterprises, production maintenance with scientific institutions (Dovhal, 2013).

Each of these directions corresponds to a specific form of organisation: a company specialising in technology; a joint inter-economic association; an agricultural-industrial association; a scientific-industrial association.

As the primary form of inter-economic organisation, agricultural cooperation acts as one of the tools of the market mechanism, which allows the enterprise to easily adapt to the conditions of the market situation, while at the same time protecting agricultural production from the elements of the market. On the other hand, the cooperative system in the form of branch unions is a reliable means (instrument) of state regulation of agricultural production for the implementation of large state and local programmes for the introduction of technical agronomic innovations and the implementation of a rational financial policy. The basis of the cooperative development of enterprises in the agricultural sector is currently seen in the combination of the vertical (branch) principle of building a primary (grassroots) network of cooperation with the territorial principle of organising a system of cooperative unions (associations).

This allows material, financial and labour resources to be centralised and reallocated for structural change to maximise returns from technologically networked production. Savings in capital costs are achieved by making it

impossible for agricultural producers to build their own processing facilities. The creation of general services, including marketing, the absence of taxes at intermediate stages of production, the acceleration of the circulation of working capital, the increase in the rhythm of the supply of raw materials and the loading of meat processing plants, ensures the reduction of selling prices and the increase in the production of competitive products.

The fragmentation of agricultural production into small business structures that took place during the reform years has strengthened the situation in agriculture. Today it is necessary for agricultural producers to unite on a cooperative basis and not to divide production into natural farms of individuals. Cooperatives for the production of agricultural products should unite in branch cooperatives and associations. The experience of many countries shows that the most successful elements of the market are those that face difficulties together and win.

### 3. Integration Links – Experience of the World's Leading Countries

Domestic and foreign experience shows that in large agricultural areas it is advisable to build processing plants of adequate capacity and to create agro-industrial cooperatives or associations in which capital can be transferred from processing plants to producers of agricultural raw materials. Banks are more willing to invest money in large enterprises. Worldwide, 35% of farms are created and supported by thestate (Revutska, 2014). Well-established cooperative relations of farmers and private farms with large agricultural and processing enterprises will allow them to receive support from them both in cash and in kind: feed, veterinary medicines, seeds of agricultural crops, fertilisers and other services.

Cooperation between agricultural producers is widespread in other countries, where credit and loans to farmers are provided by rural credit cooperatives and other financial cooperative organisations that support producers of agricultural products on preferential terms. In many countries, compensation is paid to farmers in the event of natural disasters and payments are deferred for several years (Shahrayuk-Onofrey, 2013).

The activities of cooperatives differ from other forms of production in a number of ways. Cooperatives, created on the initiative of the producers themselves and managed by them at their own risk and peril, are characterised by the existence of collective ownership. The main task of the cooperative is to provide services to its members and to produce goods, and the profit generated by its activities is mainly used to replenish the reserve and other funds of the association. The remaining part of the profit is distributed among the members in proportion to their capital participation.

The peculiarity of the collective form of vertical cooperation is that each enterprise is linked to several cooperatives at the same time. Some of them deliver agricultural raw materials from farms to cooperative enterprises, ensure their processing and sale of finished products; others supply commodity producers with tools and means of production; third parties provide loans. In each country there is a system of cooperative production services for cooperative members, including the provision of technical assistance, advice and other production services.

Cooperatives engaged in the collection, processing and sale of products produced by farmers are the most developed area of cooperative activity, and the key role is played by marketing cooperatives, which determine the direction of activity of producers and processors of products in the given market situation. The inclusion of this link in the system of vertical links allows farmers and cooperatives to work with confidence and stability.

Farmers' cooperatives are grouped at regional, national and state levels into large sectoral, product and territorial unions. National cooperative federations represent cooperative farmers in negotiations with the government of their country and actively participate in the development of agricultural policy, defending the interests of cooperatives. They also represent national cooperation in various international cooperative organisations, in a number of countries and in the governing bodies of the EU (Berezivskyi, 2013).

The main legal basis for the activities of cooperatives are specific laws on cooperation, which regulate the status of a cooperative organisation as a voluntary association of farmers operating on a democratic basis. However, these laws vary from country to country.

The basic law of the internal life of the cooperative is its statute. It contains the definition of

the purpose of the company, regulates the procedure for joining the company, determines the amount and the procedure for paying the share contributions, establishes the rules of commercial relations between the company and its members and the procedure for forming the governing bodies. The content of the statutes must fully comply with the norms of the legislation in force. Usually, the statutes are drawn up according to a single model, for which purpose there are model statutes for cooperatives in certain sectors, recommended by central associations.

The Charter is supported by a number of legal acts. During the organisation of the cooperative, its direction should be determined. Legislation does not describe the objectives of cooperatives of different specialisations, with the exception of credit cooperatives. The manner of establishing cooperatives is regulated by a number of legal acts. Any person can become a member of a cooperative. Agricultural cooperatives are governed by law. The highest governing body of a cooperative is a general meeting of members or (in very large associations) a meeting of commissioners.

For the operational management of the cooperative, the general assembly elects the board of directors or the management and control bodies (supervisory board).

The administrative bodies are elected for 1-4 years, with an obligation to report on their activities to the general meeting of the cooperative and to the supervisory bodies. It is allowed to involve salaried employees in the administration and to hire a paid director for the day-to-day management of the cooperative. Cooperative activities require significant working capital (in the form of cash) and fixed assets (in the form of investment capital). Agricultural cooperatives are financed from their own resources and from state and supranational subsidies. The source of cooperatives' own funds is their members' shares and annual contributions, as well as deductions from profits. The compulsory financial participation of each member in the cooperative's activities is regulated by law and is included in the statutes of most countries.

Capital contributions are registered (entered in the register), they cannot be inherited, they cannot be waived in favour of someone else.

In the event of withdrawal from the cooperative, shares will be paid out at the nominal value or book value at the time of withdrawal.

In addition to share capital, agricultural cooperatives use other internal sources to increase their funds, including initial and annual contributions. These contributions are mandatory, especially for cooperatives that create share capital. For example, Swiss legislation stipulates that the amount of the annual contributions is determined by the cooperative's general meeting, depending on the needs of the association (Rybak, 2014).

In addition to share capital, cooperatives sometimes require new members to pay a "right of entry" contribution.

The profits (or savings) generated by the cooperative's activities are allocated to reserves and other funds (insurance, depreciation, investment, development, etc.). These funds are important sources for the formation of cooperative capital and are of great importance because, unlike share capital, this part of the funds remains in the cooperative and is not subject to return in the event of withdrawal from the cooperative. The part of the profit remaining after the deduction of the funds is distributed among the members of the association in proportion to their equity participation.

If the financial year ends with a profit, the general meeting may decide to pay interest on the capital belonging to the members of the cooperative. The amount of interest is often limited.

## 4. Mechanism for Building Relationships Between the Subjects of Integration Links

The organisational and economic mechanism of relations between subjects of the integration system is a multifaceted economic category and includes the following main components (Figure 1). Successful development of economic relations in agro-industrial formations is possible if the main rules of their development and implementation are observed. These include: social orientation of economic relations; effective use of production potential; respect for the interests of all participants of the integrated formation; material and moral responsibility of the participants; transparency of economic relations for the employees of the agro-industrial formation; state regulation and support of economic relations for the employees of the agro-industrial formation; state regulation and support of economic relations.

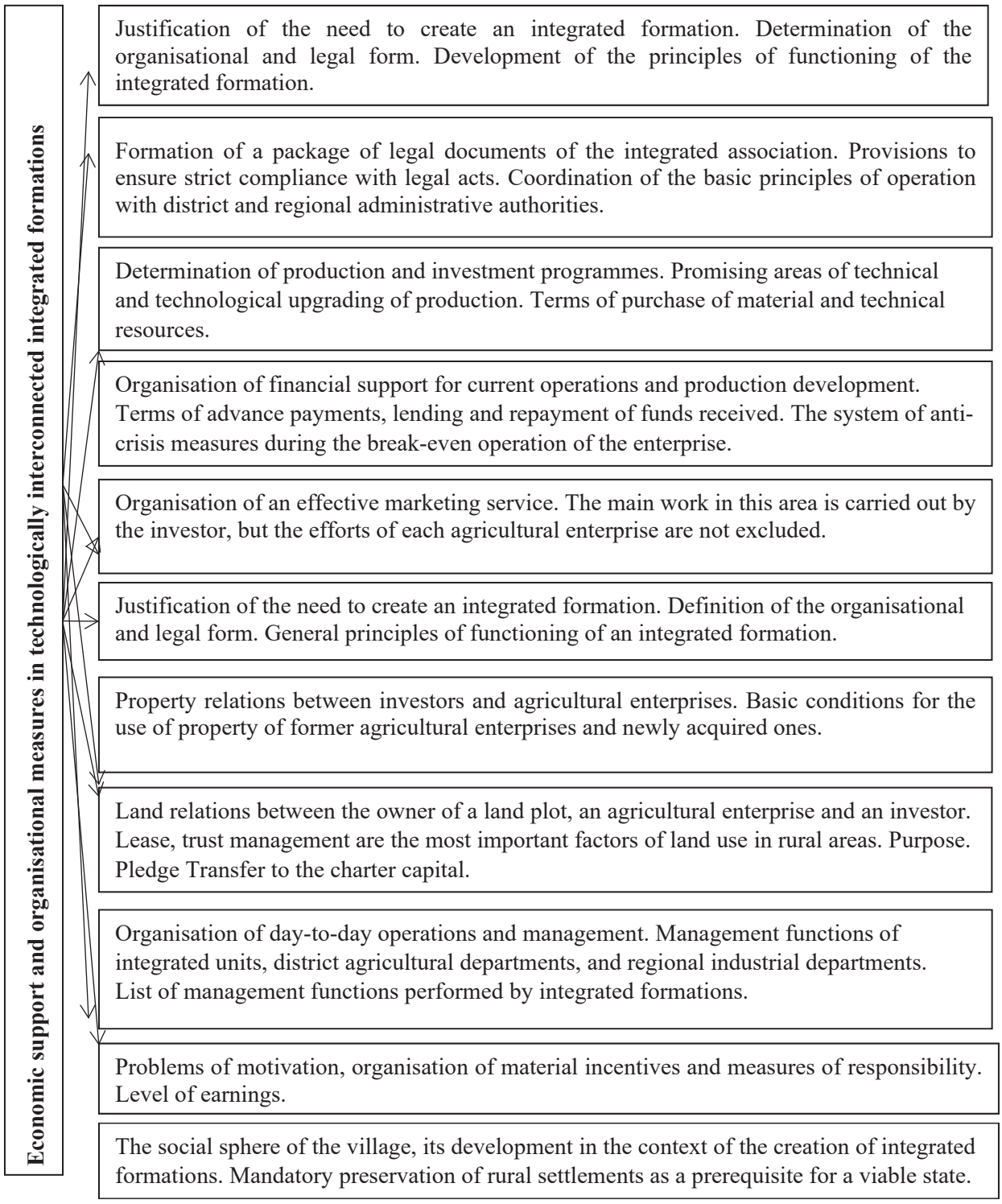


**Figure 1. The main components of the mechanism of economic relations of agribusiness enterprises in technologically interconnected integrated formations**

*Source: author's own development*

Priority attention should be paid to the process of creating an integrated formation, since it is at the stages of creation of the association that the foundations of the economic mechanism of its functioning and the prerequisites for successful further activities are laid. In the economic literature, the authors highlight the following leading principles for the creation of integrated formations:

– the principle of voluntariness. The decision to join the integrated structure is made in accordance with their charters: by a decision of the shareholders' meeting (in joint-stock companies), depositors (in limited liability companies), members (in cooperatives);
– the principle of adaptability. Integration entities should choose the form of association that best suits the existing economic conditions and be able to respond adequately and quickly to changes in the external environment;
– the principle of phasing. As the material, technical and economic conditions are created, it is possible to move from simple to more complex forms of integration (from horizontal to vertical, from production to production and trade, etc.);
– the principle of territorial integrity and optimality. For a balanced resource provision, territorial integrity and clear coordination between all links (participants) of the integrated process must be observed;
– the principle of the "leading link" – the integrator. When creating an agro-industrial formation, it is necessary to choose an integrator enterprise, the functions of which can be performed by a financially stable enterprise with production potential (Abduroimova, 2013).

## 5. Assessment of Integration Links in the Meat and Food Subcomplex

To assess the integration processes in the agricultural sector, it is proposed to introduce the following system of indicators for assessing agro-industrial integration (Table 1).

The indicators of the first Block are used to determine the level of integration potential of enterprises and changes in their individual characteristics in the process of integration. The presented indicators make it possible to study the quality and assortment of products in order to assess business prospects, the degree of wear and tear of fixed assets, the level of utilization of production facilities, financial stability, business activity, solvency. In addition, the indicators in this block make it possible to study the legal status of the fixed assets: whether they belong to the company or not, and whether they will be lost as a result of the merger.

Similarly, the investment policy of the enterprise, the relations of the owners with its management, the attitude of the authorities to possible integration, the prospects and forms of return of invested financial resources are evaluated. An important criterion for assessing the feasibility of integration is the degree of mutual importance of the enterprises in terms of supply to each other and their share in total sales (consumption), the existence of alternative sales channels (alternative consumers) in the association and in each of its members, the uniqueness of the enterprise for the technological chain.

The indicators of Block II require an assessment of the extent to which the change in the final indicators of agro-industrial formation is directly caused by the interaction of the participants.

The criteria of Block III can be used to assess the efficiency of the agro-industrial formation. The competitiveness of a type of product produced by the integrated formation can be determined as the ratio of its price to the assessment of consumer properties in points or by calculating the integral indicator of competitiveness in the form of a price index –

Table 1
**System of indicators for agro-industrial integration**

| | |
|---|---|
| Block I<br>A system of indicators to assess the feasibility of integration | 1. General description of the technological process and applied technology<br>2. Indicators of financial stability<br>3. Legal status of fixed assets<br>4. The degree of mutual importance of enterprises |
| Block II<br>System of indicators of the level of integration | 1. Level of intensification of management decisions<br>2. Level of integration of production with science<br>3. Degree of production integration<br>4. Level of marketing integration |
| Block III<br>Integration performance indicators | 1. Competitiveness of the final product<br>2. Social and economic efficiency<br>3. Cumulative effect of joint activities |

*Source: author's own development*

the ratio of the selling price of the products of the agro-industrial formation to the average market price on the regional market.

The socio-economic efficiency of agro-industrial formations can be expressed through a system of indicators: wages, the size of the public funds of the association, the level of mechanisation, the equipment of the workforce, the improvement of the qualifications of the employees, etc.

The cumulative effect of the joint activity of the participants in the agro-industrial integration is determined by the ratio of the total profit obtained as a result of the integration to the cost price of the final products.

When making a final decision on the creation of an integrated agro-industrial complex, it is necessary to determine its possible significance for the socio-economic development of the district (region) in which its activities are planned.

The developing processes of cooperation and integration should not happen spontaneously, when creating long-term relations between agricultural and processing enterprises, the experience of previous stages of management should not be forgotten, because the placement of production capacities of processing enterprises was made taking into account the rational use of the raw material base, formed agricultural zones and needs of the population living in the respective territory.

The following factors can be highlighted as criteria that determine the direction and form of agro-industrial integration.

1. The availability of large markets. Satisfying the needs of customers is the purpose of any business. Proximity to potential consumers is not only a strong incentive for the creation of large-scale agro-industrial production, but also influences its specific form. For example, the organisation of processing directly by agricultural enterprises (meat processing plants of agricultural enterprises and processing cooperatives set up by small producers) only makes sense in the vicinity of sales markets, otherwise the commercial costs become prohibitive for producers.

2. The presence in a given area of companies that are links in a single technological chain "production-processing". The essence and concept of agro-industrial integration implies the combination in a single structure of two or more links of agro-industrial production and, first of all, of agriculture and processing. The presence in the agricultural zone of economic entities – producers of agricultural products and a processing enterprise capable of providing the necessary amount of processing of raw materials is the main condition for the formation of an agro-industrial association in this territory.

3. The volume of production of agricultural producers. This factor is not the last one that influences the expediency of choosing one or another form of unification processes. The creation of agricultural holdings tends to focus on large-scale production, as this reduces transport costs and allows the capacities of processing enterprises, which act as the main initiators of integration in the creation of holding structures, to be quickly utilised.

4. Financial situation of potential integration participants. When carrying out integration processes, it becomes necessary to select the main integrators – one, less often – several large, financially stable enterprises, capable of taking on all the organisational difficulties of creating an association. The formed financial position of the subjects of the adjacent stages of the technological chain determines the direction of integration: a stable economic condition and access to financial resources of the enterprises of the processing sector in case of an agricultural crisis will lead to "backward" integration, the opposite situation can contribute to the development of "forward" integration. Given the unfavourable financial situation of both spheres, it will most likely be necessary to turn to external sources of financing, i.e., there will be conditions for the development of lateral integration.

5. Organisational and legal status of the potential participants. This factor is important for the choice of one or another form of agro-industrial formation. For example, the predominance of agricultural enterprises operating in the form of production cooperatives in the region will make it difficult to create holding structures based on the ownership of large blocks of shares or cash capital of the organisations included in the association by the main company.

At the regional level, in order to coordinate the activities of agro-industrial formations, it is advisable to create an association (union) of meat producers and processors.

The work of the Meat Union should be carried out with the active support of the regional administration, which is interested in stabilising and increasing the efficiency of the industry. Its main tasks should be:
– representation and protection of producers' interests in local and state authorities;
– participation in the development of national and regional programmes for the development and support of livestock farming;
– initiating and participating in the development of programmes aimed at stimulating the development of cooperation and integration in the livestock sector;
– cooperation with research and educational institutions, financial and industrial organisations to provide organisational, scientific, technical, economic and investment support to its members;
– coordination of economic activities of the association's members, which includes: analysis and assessment of the industry, development of proposals for its development, planning and coordination of programmes for the introduction of intensive technologies for the production and processing of livestock products;
– promoting the development of market infrastructure (creation of wholesale food and resource and technical markets, credit cooperatives, insurance institutions);
– assisting union members in selling products, finding potential investors, obtaining loans, tax and other benefits for leasing operations;
– conducting research on economic, technological and other issues of the livestock industry;
– providing legal assistance to the union members.

In order to function effectively, this union must first be supported by the state and recognised by the regional authorities as an equal partner in the management system of the agricultural sector.

Integration and cooperation processes are just beginning to develop and are currently spontaneous and fragmented, which cannot significantly affect the state of the livestock industry in general. Only a comprehensive approach to the creation and development of agro-industrial formations, taking into account the management conditions of each territorial zone of the region, is capable of changing the situation.

A comprehensive approach to the reform of the system of intra-economic relations is necessary for the successful entry of an agricultural enterprise into an integrated formation. Studies have shown that the improvement of intra-economic relations in agricultural cooperative formations is a necessary condition for their financial recovery and increase in production efficiency. In order to achieve these goals, it is necessary to reform intra-farm labour and organisational relations based on the coordination of the general farm interests and the individual interests of the members of the cooperative. Economic calculation corresponds most closely to such relations. Modern agricultural production cooperatives differ significantly in the level of application of elements of intra-farm calculation.

The highest category is the use of all elements of intra-economic calculation, when each unit of the cooperative formation and even individual employees are in a relationship of complete self-sufficiency with the cooperative administration.

The first category consists of cooperatives that establish intra-economic relations according to the principles of intra-economic calculation. Self-sufficiency and self-financing, material interest and economic responsibility are practised here. In these enterprises, the optimal production and organisational structures of the cooperative have been determined and the order of relations between structural divisions has been clearly regulated on the basis of estimated intra-farm prices. Expenditure standards are applied to the units and bonuses are paid for their reduction, financial incentives depend on the income received, the responsibility of the units towards the cooperative administration and other units for violations of production conditions is provided.

The second category consists of cooperatives where only the basic elements of internal accounting have been mastered. The relationship between the units and the management of the cooperative does not clearly differentiate responsibility for failure to fulfil obligations, compliance with regulations.

In the third category of cooperatives, elements of intra-household calculation are also applied. The order of interrelationships between structural subdivisions is determined on the basis of intra-household estimated prices, financial incentives are related to the results of operations but are not fully dependent on them,

Table 2

**Classification of agricultural production cooperatives according to the degree of application of elements of on-farm accounting**

| Elements of intra-accounting transactions | Categories of agricultural cooperative organisations | | | | |
|---|---|---|---|---|---|
| | Higher category | 1 | 2 | 3 | 4 |
| 1. The optimal production and organisational structure of the cooperative is determined | + | + | + | | |
| 2. The procedure for relations between structural units on the basis of internal business estimates is determined | + | + | + | + | |
| 3. Prove cost standards | + | + | + | + | - |
| 4. Reward for cost savings was introduced | + | + | + | | |
| 5. Employees' financial incentives are entirely dependent on the income of the divisions | + | + | + | + | |
| 6. Provides for liability of departments and administration for violation of the terms of proceedings | + | + | | | |
| 7. Each unit is fully self-supporting with the cooperative's administration | + | | | | |
| 8. An automated system was introduced to record the work of each unit and the cooperative as a whole, as well as their relationships | + | | | | |

*Source: author's own development*

i.e. payment is made for the products produced, but there is no bonus for reducing costs. There is no clear division of responsibility between the units and the cooperative management for failure to meet commitments.

The fourth category includes all other forms of cooperatives in which intra-enterprise calculations are practically not used, intra-enterprise relations are based on the conditions of management methods, and the remuneration of the members of the cooperative is not directly related to the results of the units' activities.

At present, the main task of the cooperative is to fulfil the contractual obligations between the units, between the cooperative and the units, between the cooperative and the employees, and between the cooperative and external partners. The development of self-supporting relations, the granting of real independence to the structural units provides an opportunity for the self-realisation of specialists, promotes the increase of material interests of all employees and activates entrepreneurial activity. State accounting increases the effectiveness of the system of control and accounting for the consumption of production resources, ensures an increase in the material interest and responsibility of all members of the cooperative. In order to improve the organisational and economic relations in the cooperative, it is proposed to introduce additional measures to stimulate the work of managers and specialists, to establish the standard of their salaries (from the gross income, profit or the amount of revenue for the economy), as well as a fixed amount of other planned expenses (the content of fixed assets attached to the equipment, stationery, expenses for business trips, personnel training, etc.). During the year, employees are paid an advance salary (shareholders receive a guaranteed minimum, employees receive full salary). At the end of the year, the actual salary is determined according to the approved standard. Savings on fixed costs are added to this amount (or the excess is retained). The total amount is adjusted according to the fulfilment of obligations. If the cooperative manager and the equipment staff have fulfilled all their obligations, this amount is increased by 35%, but is reduced by 11% for each unfulfilled item, as is the fixed amount of other planned expenses (maintenance of fixed assets assigned to the equipment, stationery, travel expenses, staff training, etc.).

The proposed system is designed to ensure a sufficiently close link between the level of material participation, increased employee responsibility and the level of gross income of the cooperative, thus contributing to the growth of production and improving product quality.

In today's conditions, increasing the efficiency of production can be achieved mainly through the development of innovative processes, which

find their final expression in new technologies, new types of competitive products. Finding and using innovations directly in enterprises is a real problem. The development of new technical and organisational-technological solutions, the improvement of the main principles of management in relation to the specifics of the domestic market create conditions for the restoration of reproduction processes in enterprises and provide additional impetus for economic growth. Constant updating of equipment and technologies makes the innovation process the main condition for the production of competitive products, gaining and maintaining positions of enterprises on the market, increasing productivity and efficiency of the enterprise.

**6. Distributional Relations in the Activities of Integrated Formations**

In the process of economic activity of integrated formations, an important place is occupied by the distribution relations of the achieved joint effect, the mechanism of which must be ensured:
– firstly, the determination of the fair individual contribution of each participant to the overall result of the joint activity;
– secondly, the identification of a real criterion for the distribution of the achieved joint results (income, profit).

The choice of the organisational and economic mechanism and the rules for the distribution of the general additional effect must, of course, be determined as the result of negotiations between the participants of the integrated formation. The process of finding a "fair compromise solution" can be clearly determined by the variety of formations created, if only because the concept of "justice" itself is very complex, multifaceted and can be interpreted differently by different members of the association (Karmazina, 2012).

This circumstance requires the development of methodological approaches to the distribution of the general co-benefit based on a combination of different economic interests, focusing on the different perceptions of the participants regarding the fairness of such a distribution. Such a technique should be multi-variant, gradually leading to the maximum consideration of all interests and arguments of the integration participants in order to reach an agreed solution. The most modern and effective method of obtaining a compromise solution is the method of modelling the created or functioning integrated formation in the meat products sub-complex based on the use of personal computers. It allows to visually present various options based on different distribution principles and different states of the external economic environment.

Specific options for the distribution of income between meat producers, meat processors and traders can be reviewed and clarified both at the stage of establishment and during its operation, in the event of unforeseen changes in conditions or a reassessment of the interests of some participants in the integration structure.

According to the assessment, there is no doubt about the multivariate and interactive nature of the process of coordinating the interests of the integration subjects. Studies show that it is useful to define the basic reference options for the distribution of the total additional financial result.

For example, in the first basic version, the additional effect is distributed between the integration subjects in proportion to their production contribution.

The second basic option is to allocate the effect in proportion to the value added in each firm and in each link of the technological chain, but the apparent fairness of such an allocation may be distorted by existing price differentials. If one of these options is taken as the basic one, the other should be used to adjust it. On the basis of the above provisions, it is possible to propose methodical approaches to the distribution of the benefit received, as well as the choice of the organisational and economic mechanism of the functioning of the integrated formation.

The choice of mechanisms can be based on several important approaches. Without pretending to be exhaustive, some principles will be presented that should be applied with regard to the importance of the individual organisations involved in the integration and, indirectly, the validity of their claims to a share of the overall benefits (profit).

First. The basis of the distribution of impact by contribution (specific weight) is most often economic indicators that determine the relative

economic power of each subject of integration. The basic version of the distribution based on the economic contribution of organisations to the total value added has already been shown. In order to clarify or reshape this distribution, it is necessary to take into account such important economic indicators as the profit before the organisation of the integration structure, the balance of liquid assets, fixed assets, working capital and some of their combinations. The choice of a particular combination of indicators is made on the basis of the analysis of the functioning of the integrated formation or the project of its functioning, taking into account the specifics of individual participants.

Second. The distribution of the effect according to where it occurs. To determine this, all possible options are considered. This principle is derived from the distribution of income received in proportion to the additional value created in each company or in each link of a single technological chain.

Third. The distribution of the additional effect by the amount of assets and fixed assets can be used with a small number of participants in the formation and a large uniformity of the products produced.

Fourth. Distribution according to the principle of coalition power, since the importance of each member of the alliance is determined purely by economic indicators. According to the assessment, the importance of the individual participants (and therefore their share of the profit) is higher the more important their entry into the alliance is for its successful functioning.

Fifth. The principle of the distribution of benefits, based on the theory of threats, is to determine the importance of the principle of coalition power. It is obvious that a member of the coalition (in this case, an integrated formation) is stronger or more important for the group the greater the number of threats associated with its exit from various options of the coalition; the remaining members do not find counter-threats.

On the basis of the application of one of the principles described above or of another principle obtained, for example, by their synthesis, the possibility of distributing the total income among the participants of the integration is determined.

Furthermore, the resulting options for the distribution of the total benefit can be implemented both in an explicit form, i.e., by determining the absolute amounts allocated to each organisation, and through more complex, "hidden" schemes of mutual calculation, e.g., through the mechanisms of internal settlement prices or internal taxes, which are subdivisions of the organisational-economic mechanism.

Distribution relations in integrated formations of the meat products subcomplex can be constructed according to two models:

– price, which in practice can be applied in two ways: at current market prices or at estimated domestic prices;

– normative-distributive, which differs from the price model in that the calculations are not made on the basis of the intermediate result, but on the basis of the final result.

In the price (or cost-technological) model, calculations are made according to the costs of the technological process, starting from the producer of raw materials and ending with the trading organisation for the sale of semi-finished and finished meat products. It is advisable to use such a scheme in those integrated formations in which the participants either retain legal and economic independence, or retain only economic independence, but do not have the rights of a legal entity. Since the price model is built according to the stages of the technological process, the prices of meat products passing through successive stages can be determined in two ways:

– based on the normative or actual costs and the applied meat production technology, while the cost of the final products is determined on a cost basis, starting from the first stage of production and ending with the last – trade, taking into account the increase in added value;

– based on the retail price of the final type of meat products, i.e., a reversible model is used, according to which the estimated price of raw materials is determined in reverse order. The peculiarity of this method is that the starting point of the calculations is the actual market price for a specific type of semi-finished or finished product and the final point is the calculated price for a specific type of raw material (increase in cattle, pigs, poultry).

The application of the pricing model in the market relations of the participants of the joint activity has constraining moments, because each participant of the integrated chain proceeds

from its own interests and tries to obtain the maximum profit through the price. In integrated formations of a closed type, the concept of pricing is built primarily with the orientation of all participants to obtain the maximum aggregate income from integrated activities in general, and here it should not act as an in dependent tool of distribution relations, but serve as a value basis for the distribution of the final financial result.

In the normative-distributive model, economic relations are established by distributing the final financial outcome (sales revenue, profit) in proportion to the participants' contribution to the joint production. The amount of this contribution for each participant can be determined by one of three normative methods: cost, price, resource. The regulatory cost method calculates the regulatory costs at each stage of product promotion. The contribution of agricultural producers is determined on the basis of the normative (full) cost price, the rest on the basis of its increase. One of the main conditions for using this method of calculation is that the right of product ownership must belong to the main integrator of the group. This has the effect of deferring the tax assessment, since in this system the profit is calculated only at the end of the technological cycle, i.e. at the stage of sale of semi-finished or finished meat products. However, given the practical difficulty of determining the normative level of costs for the production of the meat products sub-complex, it is possible to use a more modified option.

The standard price method differs from the price method in that the standard profit indicator is added to the calculation procedure. The contribution of the participants is determined as follows: for agricultural cooperatives – according to the standard value, for others – according to the added standard value. This option can be used for any form of integration – both with the loss and with the preservation of the legal independence of the participants – economic units. The full calculation is carried out through the distribution of the profit received at the final stage of the integrated association's activity, and earlier an advance is paid to the supplier of livestock after the sale (handover) of the products for processing.

The use of a cost-price variant of distribution relations will allow agro-industrial formations to effectively influence the interests of integrators in order to reorient them towards the final results of joint activities. The formation of the profit of each of the participants should be carried out taking into account the real conditions of operation.

The normative-resource method determines the resource intensity of the production of weight gain and its processed products. To do this, all types of production resources used in agricultural production and processing are summed up in a monetary estimate and the share of each participant is determined. The application of this method is limited by the complexity of comparing the costs of resources of different quality (labour, fixed assets) and of the same type but belonging to different activities (e.g., livestock farming and meat processing).

For agro-industrial formations of the meat products subcomplex of the joint-stock type with the maximum degree of integration, which implies the loss of the legal entity status of the participants, the given distribution relations of the obtained general effect are the most acceptable. Participants who do not have legal independence, operating under the conditions of internal commercial settlement, have collective economic interests, the totality of which affects the formation of the mechanism of distribution relations, especially when justifying the ratio between accumulation and consumption.

## 7. Conclusions

The author's position is to recognise the need for a reasonable combination of large agro-industrial formations, medium-sized agricultural enterprises, farms and private peasant households in the subcomplex, which allows for the realisation of the advantages of each form of management, economic growth in the industry and sustainable development of rural areas. The results of the study provide grounds to identify the following areas for the effective development of integration processes and integrated structures in the meat and food subcomplex, on which it is proposed to focus the efforts of the state, business, industry associations and the scientific community:

– ensuring effective entry of integrated structures into the global agri-food market;

– implementation of full-scale anti-epizootic measures to combat animal diseases, primarily

African swine fever, which poses a major threat to the development of pig production;
– establishing a legal framework for property and distribution relations between participants in integrated structures, including the adoption of the Law of Ukraine "On Holding";
– development of scientific and methodological support in the field of organisational and economic mechanism of integrated formations, taking into account the interests of all participants;
– organisation of state statistical monitoring of the functioning of integrated structures in order to form a system of statistical indicators that comprehensively characterise their activities;
– focusing investment activities of integrated entities on modernising production and sales, developing the breeding, genetic and feed base;
– vertical integration of producers with research and development organisations with the creation of research and production associations to create an innovative direction for the industry's development;
– creation and expansion of contractual forms of integration, inter-organisational interactions and institutional arrangements;
– developing the diversification of the integrated units' activities (towards deep processing, coverage of new regions, meat and livestock projects), increasing production volumes for emerging market segments (turkey, duck, rabbit, etc.), improving product safety and quality;
– use of modern scientific and methodological support for corporate strategic management, business process and quality management, and marketing;
– state regulation of the activities of integrated structures, including by improving land legislation, in order to mitigate the negative impact on the competitive environment, environmental situation and socio-economic situation in rural areas;
– regionalisation of the state policy of supporting integrated structures, taking into account the specifics of business entities and the current level of development of vertically integrated industries in the respective territories;
– increased focus on corporate social responsibility of agro-industrial integrated entities and their social objectives;
– development of mechanisms of public-private partnership in the creation of integrated structures in "growth points" and implementation of large investment projects by integrated entities (Boltovska, 2021).

The results of the conducted research, which systematize and specify the content and genesis of agro-industrial integration, taking into account the specifics of the industry, expand scientific ideas about integration processes in the meat products subcomplex, contribute to overcoming the fragmentation of scientific knowledge in this area, contribute to the formation of information and applied research, and can be used in the development of programs for the development of the meat products subcomplex and rural areas, mechanisms of state support for meat production, and in the preparation of proposals for improving the regulatory and legal framework for the activities of integrated structures.

## References:

Chumachenko, Yu. S. (2018). Foreign experience of economic integration of the agrarian-industrial complex: agro-industrial integration of the cooperative type. *Herald of Cherkasy University. Series: Economic Sciences*, 1, 70–76. Available at: https://econom-ejournal.cdu.edu.ua/article/view/2668

Radchenko, O. P. (2019). International economic integration of the agro-industrial complex of Ukraine in the conditions of globalization. *Intelligence XXI*, 6 (1), 155–158. DOI: https://doi.org/10.32782/2415-8801/2019-6.28

Dovhal, O. V. (2013). Cooperation as a promising direction for the development of entrepreneurship in the countryside. *Formation of Market Relations in Ukraine*, 9, 132–135.

Revutska, A. O. (2014). Cooperation as a promising direction for the development of agro-industrial enterprises. *Economic Space*, 84, 190–199.

Shahrayuk-Onofrey, S. I. (2013). Cooperation as an organizational form of agricultural production in the system of sustainable development of rural areas. *Scientific Bulletin of the Bukovyna State Financial and Economic University. Economic sciences*, 2, 190–201.

Berezivskyi, P. (2013). Cooperation in the development of rural areas. *Agrarian economy,* 6(1-2), 33–40.

Rybak, Ya. Ya. (2014). Agricultural service cooperative as a means of development of personal peasant farms. *Economy of agro-industrial complex*, 9, 162.

Abduroimova, E. D. (2013). Integration as a factor in increasing the efficiency of production in the agricultural sector. *Economy and the region*, 3, 13–18.

Karmazina, N. V. (2012). Integration of the potential of small enterprises at the regional level. *Scientific notes of the National University "Ostroh Academy". Ser.: Economy*, 19, 135–139.

Boltovska, L. L. (2021). Organisational and economic principles of managing dynamic processes of the meat and food subcomplex: a thesis for the degree of Doctor of Economics: 051. Vinnytsia: VNAU, 248 p.

Received on: 27th of April, 2023
Accepted on: 29th of May, 2023
Published on: 30th of June, 2023