Formation and Implementation of Public-Private Partnership Projects in the Agricultural Sector

Oksana Lazor (Corresponding Author)
Department of Public Management and Administration, Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Vinnytsia, Ukraine
Email: lazor.oks@gmail.com

Oleh Lazor
Department of Public Management and Administration, Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Vinnytsia, Ukraine

Natalia Lutska
Department of Management and Administration, Higher Educational Institution «King Danylo University», Ivano-Frankivsk, Ukraine

Ivan Krykhovetskyi
Department of Law, Higher Educational Institution «King Danylo University», Ivano-Frankivsk, Ukraine

Kateryna Maistrenko
Department of Public Administration, Interregional Academy of Personnel Management, Kyiv, Ukraine

Agnes Olkova-Mykhnytska
Department of Parliamentarism, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

Ukrainian City Territorial Community, Kyiv, Ukraine

Abstract

Existing mechanisms for integrating state and public resources with opportunities and business resources to achieve critical social goals need significant changes. This fully applies to the goals, functions, and mechanism of public-private partnership projects, the advantage of which is the involvement in traditional public sectors of the economy of private business practices, as well as the desire to eliminate the shortcomings of both methods of management through optimal allocation of resources, responsibilities, and risks. The article analyzed the current state of public-private partnerships in terms of periods, geography, and industries in the article. The recent positive changes related to PPP have been identified and analyzed. The authors proposed methodological bases for assessing the feasibility of PPP projects and proposed a system of indicators of the effectiveness of PPP projects and conceptual principles for creating a favorable environment for implementing public-private partnership projects in the agricultural sector in Ukraine.

Keywords: Concession; Conditions of change; Development strategy; Project management; Public administration; Public-private partnership (PPP); Sustainable development goals (SDG).

1. Introduction

The agricultural sector of the economy plays a crucial role in expanding food, strengthening the position in foreign markets and ensuring national security. The agricultural sector of Ukraine accounts for 15% of employment, and exporters of aggregated products account for about 40 per cent of Ukraine's exports (OECD Publishing, 2020b). Forecasts show that Ukraine will continue to increase its share in world trade and reach 12% of world exports in 2029 (OECD Publishing, 2020a). Ukraine is expected to increase productivity by 1.5% per year through increased crop rotation, advanced farming practices, and unproductive land abandonment. Due to the increase in agricultural productivity over the past ten years, the share of food products in Ukrainian exports has doubled to 47% in 9 months of 2020 (21% in 2010) [1]. An essential characteristic of the agricultural sector is increasing the sustainability of agricultural exports in the economic crisis, which reflects the low elasticity of demand for food by income (with declining revenues, demand for food decreases more moderately than other goods). Thus, in the structure of Ukrainian exports, the high share of food products mitigated the situation during the economic crisis in 2020.

Among the Sustainable Development Goals in Ukraine, Goal 2 is “Overcoming hunger and agricultural development”, the indicators of which are the performance indicators of the agricultural sector (Table 1).
Table 1. Indicators of SDG № 2. Overcoming hunger, agricultural development

<table>
<thead>
<tr>
<th>Task</th>
<th>Indicator</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1. Ensure the availability of a balanced diet at the level of scientifically sound standards for all segments of the population</td>
<td>2.1.1. Meat consumption per person</td>
<td>kg/year</td>
</tr>
<tr>
<td></td>
<td>2.1.2. Milk consumption per capita</td>
<td>kg/year</td>
</tr>
<tr>
<td></td>
<td>2.1.3. Fish consumption per capita</td>
<td>kg/year</td>
</tr>
<tr>
<td></td>
<td>2.1.4. Consumption of vegetables per capita</td>
<td>kg/year</td>
</tr>
<tr>
<td></td>
<td>2.1.5. Fruit consumption per capita</td>
<td>kg/year</td>
</tr>
<tr>
<td>2.2. Double the productivity of agriculture, primarily through the use of innovative technologies</td>
<td>2.2.1. Labor productivity in agriculture</td>
<td>thousands of US dollars per employee</td>
</tr>
<tr>
<td></td>
<td>2.2.2. Index of agricultural products</td>
<td>%</td>
</tr>
<tr>
<td>2.3. Ensure the creation of sustainable food production systems that contribute to the preservation of ecosystems and gradually improve the quality of land and soil, primarily through the use of innovative technologies</td>
<td>2.3.1. Food production index</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>2.3.2. Share of food industry products and processing of agricultural raw materials in exports of groups 1-24 UCT ZED</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>2.3.3. The share of agricultural land under organic production in the total area of agricultural land</td>
<td>%</td>
</tr>
<tr>
<td>2.4. Reduce food price volatility</td>
<td>2.4.1. Consumer price index for food</td>
<td>%</td>
</tr>
</tbody>
</table>

According to the State Statistics Service of Ukraine [1], the dynamics of achieving the planned values of indicators will be presented in Fig. 3.

If we analyze in general, only two indicators have reached the planned value of the indicator. According to indicators 2.2.2, 2.3.1 and 2.4.1, the planned value was reached in 2019, but this indicator could not be maintained. Based on the above, it should be noted that the agricultural sector plays a significant role in the development of Ukraine. Still, in this format, it does not meet the needs of society and the economy.

To improve the existing potential of the agricultural sector, a high level of investment in agricultural profitability is required. Such assets include research and technology that will increase productivity and develop human resources and infrastructure for transporting, storing, processing, and selling aggregated goods [2].

One way to improve the agricultural sector's position in Ukraine is to provide additional resources and innovative approaches to industrial development, which may be a widespread model of public-private sector interaction - public-private partnership. The emergence of PPPs in the agricultural sector of the economy is increasing the need for public goods, such as food security and environmental protection, increasing the viability of rural areas.
2. Material and Method
2.1. Status of Public-Private Partnership Implementation in Ukraine and Regulatory Framework

According to the data of central and local executive bodies in Ukraine, as of January 1, 2022, 193 agreements were concluded on the terms of PPP, of which 31 agreements are being implemented (22 – concession agreements, 5 – joint venture agreements, 4 – other agreements), 162 deals are not implemented (119 – not executed, 43 – terminated/expired) [3].

![Figure 2. Contracts concluded on the terms of PPP, which are implemented as of 01.01.2022](chart)

Source: developed according to the Ministry of Economy of Ukraine [3]

Thus, we see deficient PPP performance: more than 60% of PPP projects are not implemented, of which 22.2% are hopeless.

A PPP can only be successful if the working arrangement between the public and private sectors is harmonious. PPP project managers play an essential role in building good relations between the two parties, demonstrating an approach to power-sharing, trust and willingness to negotiate.

Legislation on Public-Private Partnership (PPP) of Ukraine (which includes the Law of Ukraine "On Public-Private Partnership" and the Law of Ukraine "On Concession") provides a legal and institutional basis for improving the provision of socially significant infrastructure services through the private sector participation principles of publicity, transparency, proportionality, fairness and non-discrimination.

Regulatory framework:
- Economic Code of Ukraine;
- The Civil Code of Ukraine;
- Law of Ukraine "On Public-Private Partnership" of 01.07.2010 № 2404-VI;
- Law of Ukraine "On Concession" of October 3, 2019, № 155-IX;

Bylaws governing the implementation of PPP:
- Resolution of the Cabinet of Ministers of Ukraine of April 11, 2011, № 384 "Some issues of the organization of public-private partnership";
- Resolution of the Cabinet of Ministers of Ukraine of 01.07.2020 № 541 "On approval of the Procedure for replacement of a private partner (concessionaire) under an agreement concluded within the framework of a public-private partnership (concession agreement)";
- Resolution of the Cabinet of Ministers of Ukraine dated 22.07.2020 № 621 "On approval of the Procedure for returning the concession object to the concessionaire after the termination of the concession agreement";
- Resolution of the Cabinet of Ministers of Ukraine of 12.08.2020 № 706 "On approval of the Methodology for calculating concession payments";
- Resolution of the Cabinet of Ministers of Ukraine of 09.10.2020 № 950 "On approval of the Procedure for attracting advisers for the preparation of the project, which is carried out on the terms of the concession";
- Resolution of the Cabinet of Ministers of Ukraine of 09.12.2020 № 1210 "Some issues of using the electronic trading system for concession tenders";
- Resolution of the Cabinet of Ministers of Ukraine of 16.02.2021 № 232 "On approval of the Methodology for identifying risks of public-private partnerships, their assessment and determining the form of their management";
- Order of the Ministry of Economic Development, Trade and Agriculture of Ukraine dated 26.05.2020 № 986 "On approval of the Procedure for submission by public partners (concessionaires) of the annual report
on the implementation of the contract concluded in the public-private partnership, including concession agreement" registered with the Ministry of Justice of Ukraine dated 06.07.2020 № 628/34911;


- Order of the Ministry of Economic Development and Trade of Ukraine dated 07.06.2016 № 944 "On approval of Guidelines for applying the Methodology for identifying risks of public-private partnerships, their assessment and determining the form of management."

Additional:
- "Concept of development of public-private partnership in Ukraine for 2013-2018" aimed to intensify the implementation of projects through PPP.

The main characteristics of PPP (Fig. 3).

**Figure 3.** The essence and features of public-private partnership

<table>
<thead>
<tr>
<th>Public-Private Partnership</th>
<th>is</th>
</tr>
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<tbody>
<tr>
<td>peculiarities</td>
<td></td>
</tr>
<tr>
<td>I. creation and/or construction (new construction, reconstruction, restoration, overhaul and technical re-equipment) of the object of public-private partnership and/or management (use, operation, maintenance) of such object;</td>
<td></td>
</tr>
<tr>
<td>II. Longevity of the relationship (from 5 to 50 years);</td>
<td></td>
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<tr>
<td>III. Transfer to the private partner of part of the risks in the process of public-private partnership;</td>
<td></td>
</tr>
<tr>
<td>IV. Investment by a private partner in a public-private partnership.</td>
<td></td>
</tr>
<tr>
<td>objects</td>
<td></td>
</tr>
<tr>
<td>Existing, in particular reproducible (through reconstruction, restoration, overhaul and technical re-equipment) objects in state or communal ownership, or property of companies, 100 per cent of shares (shares) of which belong to the state, territorial community, etc.;</td>
<td></td>
</tr>
<tr>
<td>Created or freshly built facilities by the agreement concluded within the public-private partnership framework.</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** developed according to Law of Ukraine "On Public-Private Partnership" (Law of Ukraine [4] "On Public-Private Partnership")

PPP agreements provide for cooperation and the division of responsibilities, and the main goal is to accumulate resources for infrastructure construction.

### 2.2. PPP Projects in the Agricultural Sector

PPP in the agricultural sector is a formalized partnership between the state and business entities aimed at achieving sustainable agricultural development, which provides benefits to the state from the project, distribution between investment participants and risks at all stages of the project [5, 6]. PPP in the agricultural sector is seen as an institutional and organizational alliance of public and private businesses to implement national and local priority projects, carried out on the principles of mutual benefit and consolidation of joint efforts [7-9].

The scientific literature [2, 5, 10, 11] considers the following general types of PPP projects in the agricultural sector:

- Partnerships aimed at developing value-added value retail chains in aggregation to provide access to foreign and foreign markets (VCD);
- a partnership for collaborative research in agriculture, innovation and technology transfer, established to commercialize innovative technologies for increased productivity and market access (ITT);
- partnerships for the construction and modernization of market infrastructure, aimed at the development of shopping centres, warehouses, logistics systems (MI);
Partnership for the provision of trade development services to farmers and small agricultural enterprises, including the development of market information systems and subsidies for business development services (BDS).

Joint public-private partnership projects in the agro-industrial complex are:

- introduction of innovations (research in the agricultural sector, introduction of innovative products that increase the efficiency and productivity of agricultural production and access to the market of technological innovations);
- Renovation of production and social infrastructure facilities in the agricultural sector (processing and storage of products, rural social facilities, reclamations systems), etc.

The primary forms of public-private partnership are the development and implementation of targeted programs and national priority projects, concession agreements, the creation of special economic zones, technology parks, technopolises, the formation of integrated structures, clusters and investment funds [12-15]. The group of agreements that mediate the registration of cooperation between the state and agrarian business includes contractual forms of agro-investment activities, for example, the formation of the authorized capital of agricultural enterprises (founding agreement, joint venture agreements, etc.); implementation of agro-investment activities based on agro-investment understanding [16-19]. Prospects are seen in the use of public-private partnership mechanisms to assist agricultural producers in organizing the rational use and protection of agricultural land in soil surveys, agrochemical passports, crop rotation projects, creation of protective forest belts and more.

3. Results

The analysis showed that in Ukraine, there are both positive and negative changes in the development of PPP.

The central negative aspect is the failure to bring PPP projects to a logical conclusion: implementation of results. As mentioned above, more than 60% of projects are not implemented, and these are financial and human resources that were spent at all stages of project preparation and conclusion of contracts; it is possible to reject those projects that could be implemented. To reduce the share of unrealized projects, we propose an algorithm (Fig. 4), which will be able to assess the feasibility of the PPP project at a preliminary stage.

![Figure 4. Algorithm for evaluating the feasibility of innovation-oriented PPP](image)

The proposed algorithm for assessing the feasibility of implementing a PPP project is based on the existence or emergence of a particular social problem, the solution of which is possible through the PPP mechanism.

This algorithm takes into account the interests of the main participants of the PPP: the state (through the level of solving the problem as a whole: social or budgetary effect, risk and parity of interests) and private participants (through profitability, payback period and profitability and risk and parity of goods).

**Stage 1: Development and evaluation of the concept note.** The first stage concerns the identification and preliminary assessment of the project, its suitability for implementation in the PPP format and the level of readiness to move to Stage 2. The result of Stage 1 is the preliminary approval of the project candidate for implementation on PPP terms. At this stage, the project is approved for the first time by the procedure established by law, where all relevant aspects of the project are pre-evaluated on a large scale as far as the available information allows. If the
The implementation of the project on the terms of PPP). Such a decision only if the Ministry of Economic Development agrees with an appropriate tender methodology, including the development of tender rules, specifications, draft contract, and the system of evaluation of proposals and criteria for awarding the contract. The tender commission carries out the tender process for the project by the procedure established by the Law “On Concession” - for projects implemented under concession, or Resolution of the Cabinet of Ministers of Ukraine № 384 - on non-concession PPP projects. Based on the consideration of the participants’ bids, the tender commission prepares a report. The report is reviewed and approved by the state partner. In case of approval of the information, the PPP / concession agreement is awarded. The state partner negotiates the provisions of the final contract with the party to whom the contract was awarded and agreed on the final text of the contract, which is then signed by the head of the state partner. The next stage takes place after signing the relevant agreement. The public partner must send the PPP agreement/concession agreement to the Ministry of Economic Development and some basic data from the register.

Stage 4: Support and implementation of PPP agreements. The project is undergoing implementation at this stage: construction, commissioning, operation, and transfer. The public partner/concessionaire manages the contract through its project management unit and monitors the performance of the private partner (concessionaire). The purpose of PPP / concession contract management activities is to obtain the services specified in the specifications of these contracts and to ensure continued affordability, price-quality ratio and proper management of distributed risks. PPP/concession contract management activities allow the public partner/concessionaire to exercise its rights and fulfill its obligations to ensure the fulfilment of the objectives set out in the PPP / concession agreement.

Another improvement in the formation and implementation of public-private partnership projects is the division of institutions’ responsibilities in all stages (Table 2).
<table>
<thead>
<tr>
<th>Project development stage</th>
<th>Key stakeholders</th>
<th>Authority that performs performance analysis</th>
<th>Decision-making authority</th>
<th>Government partner</th>
<th>Ministry of Economic Development</th>
<th>Ministry of Finance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stage 1:</strong> Development and evaluation of a concept note (CON)</td>
<td></td>
<td>- Ensures the priority of proposals at the stage pre-selection; - Evaluates the CON; - Makes decisions on the preparation of the feasibility study.</td>
<td>Part of the evaluation body (participation in the evaluation process)</td>
<td>Maybe an evaluation body or part of an evaluation authority</td>
<td>Maybe the initiator of the PPP proposal or part of the evaluation authority</td>
<td>Part of the evaluation body (participation in the evaluation process)</td>
</tr>
<tr>
<td><strong>Stage 2:</strong> Assessment of feasibility study</td>
<td></td>
<td>- Analyzes the effectiveness of PPP - Prepares a conclusion based on the results of performance analysis.</td>
<td>- Decides on the appropriateness or inexpediency of PPP; - Publishes the opinion on its official website.</td>
<td>In most cases, it is a performance review body and/or a decision-making authority</td>
<td>- Agrees (disagrees) the conclusion on the results of the performance analysis - Publishes the opinion on its official website.</td>
<td>Assess the fiscal implications of PPPs and the feasibility and feasibility of state support.</td>
</tr>
<tr>
<td><strong>Stage 3:</strong> Preparation for the tender and procurement</td>
<td></td>
<td>Does not participate</td>
<td>Can be a state partner</td>
<td>- Organization of preparation and holding of a competition for selection of a private partner/concessionaire - Negotiating the future terms of the contract - Signing a PPP/concession agreement.</td>
<td>- Participates in the tender commission - Controls the process of the competition - Registers PPP agreements.</td>
<td>Participates in the tender commission</td>
</tr>
<tr>
<td><strong>Stage 4:</strong> Support and implementation of PPP agreements</td>
<td></td>
<td>Does not participate</td>
<td></td>
<td>- Monitors the implementation of the contract; - Reports to the Ministry of Economic Development on an annual basis.</td>
<td>Monitors the implementation of the agreement in terms of assessing fiscal risks</td>
<td></td>
</tr>
</tbody>
</table>

Table-2. Distribution of areas of responsibility of institutions at the stages of PPP
4. Discussion
It should be noted that the formation of PPP projects is characterized by both incentives and motivators and their risks for a wide range of possible participants.

For the state:
- The primary motivation is a new effect (social, innovative, economical, etc.)
- The main incentives - the possibility of attracting innovative content, inventions and private objects of intellectual property, both in a specific field to which the state entity belongs and in the field of professional management; The growth of financial and economic indicators due to the results of the use of state assets, an increase in income to the state budget as a tax return from the achievement of positive socio-economic and other results.

Major risks include:
- The risk of corruption as a result of the opaque selection structure of the private PPP partner;
- Industrially significant risk due to the failure of a private partner's innovative strategy to realize the potential of a particular government asset and not achieving the planned financial indicators;
- Reputational risk as a result of damaging the public and international reputation of a particular party of the PPP;
- The information risk resulting from the loss of the integrity of the closed data circle in government registers when a private partner is allowed to work with them.

For a private PPP partner, the most important incentives are:
- The possibility of innovative content using its intellectual property objects;
- The creation of a new structure for income and revenue generation;
- Formation of the state and public interest.

The main risk for him is the absence of a state strategy at the legislative level, which should ensure that access to data contained in state registers is restricted if processing this data is necessary for implementing the DPP project. This is extremely important for projects under construction based on digital innovations and profound innovation in the processing of personal data. Intelligent, transparent rules and preferential support conditions for PPP projects guarantee the immutability of the primary requirements for implementing the PPP agreement throughout the entire duration of the PPP agreement. This will eliminate corruption factors that could affect the transparency of the choice of a potential PPP partner.

For society, a significant risk is to ignore the public environment and other aspects important to the life of the individual regional communities in which a PPP project is implemented in favour of profit-making main objectives.

For forms of state and private ownership in education and science, there is a risk of infringement of intellectual property rights due to unauthorized use of innovative scientific developments and inventions, given its absence due to the relationship and structure that guarantees fair payment for the use of the results of scientific activity in the real sector of the economy (extremely important for the knowledge economy).

5. Conclusions
Public-private partnerships in the agricultural sector can provide:
- PPP risk allocation function, which can help structure projects to address a range of industry risks (production, market, etc.);
- benefits related to increased efficiency and market access through the use of innovative technologies and high management and marketing skills of the private sector;
- results of food security and stimulating the development of value chains, including small farmers and small and medium-sized agricultural enterprises as critical suppliers of raw materials for agribusiness enterprises.

References


