



# REVISTA INCLUSIONES

ESPACIO Y TIEMPO EN EL SIGLO XXI

Revista de Humanidades y Ciencias Sociales

Volumen 7 . Número Especial

Octubre / Diciembre

2020

ISSN 0719-4706

**CUERPO DIRECTIVO**

**Director**

**Dr. Juan Guillermo Mansilla Sepúlveda**  
Universidad Católica de Temuco, Chile

**Editor**

**OBU - CHILE**

**Editor Científico**

**Dr. Luiz Alberto David Araujo**  
Pontificia Universidade Católica de Sao Paulo, Brasil

**Editor Europa del Este**

**Dr. Aleksandar Ivanov Katrandzhiev**  
Universidad Suroeste "Neofit Rilski", Bulgaria

**Cuerpo Asistente**

**Traductora: Inglés**

**Lic. Pauline Corthorn Escudero**  
Editorial Cuadernos de Sofía, Chile

**Portada**

**Lic. Graciela Pantigoso de Los Santos**  
Editorial Cuadernos de Sofía, Chile

**COMITÉ EDITORIAL**

**Dra. Carolina Aroca Toloza**  
Universidad de Chile, Chile

**Dr. Jaime Bassa Mercado**  
Universidad de Valparaíso, Chile

**Dra. Heloísa Bellotto**  
Universidad de Sao Paulo, Brasil

**Dra. Nidia Burgos**  
Universidad Nacional del Sur, Argentina

**Mg. María Eugenia Campos**  
Universidad Nacional Autónoma de México, México

**Dr. Francisco José Francisco Carrera**  
Universidad de Valladolid, España

**Mg. Keri González**  
Universidad Autónoma de la Ciudad de México, México

**Dr. Pablo Guadarrama González**  
Universidad Central de Las Villas, Cuba

**Mg. Amelia Herrera Lavanchy**  
Universidad de La Serena, Chile

**Mg. Cecilia Jofré Muñoz**  
Universidad San Sebastián, Chile

**Mg. Mario Lagomarsino Montoya**  
Universidad Adventista de Chile, Chile

**Dr. Claudio Llanos Reyes**  
Pontificia Universidad Católica de Valparaíso, Chile

**Dr. Werner Mackenbach**  
Universidad de Potsdam, Alemania  
Universidad de Costa Rica, Costa Rica

**Mg. Rocío del Pilar Martínez Marín**  
Universidad de Santander, Colombia

**Ph. D. Natalia Milanesio**  
Universidad de Houston, Estados Unidos

**Dra. Patricia Virginia Moggia Münchmeyer**  
Pontificia Universidad Católica de Valparaíso, Chile

**Ph. D. Maritza Montero**  
Universidad Central de Venezuela, Venezuela

**Dra. Eleonora Pencheva**  
Universidad Suroeste Neofit Rilski, Bulgaria

**Dra. Rosa María Regueiro Ferreira**  
Universidad de La Coruña, España

**Mg. David Ruete Zúñiga**  
Universidad Nacional Andrés Bello, Chile

**Dr. Andrés Saavedra Barahona**  
Universidad San Clemente de Ojrid de Sofía, Bulgaria

**Dr. Efraín Sánchez Cabra**  
Academia Colombiana de Historia, Colombia

**Dra. Mirka Seitz**  
Universidad del Salvador, Argentina

**Ph. D. Stefan Todorov Kapralov**  
South West University, Bulgaria

**COMITÉ CIENTÍFICO INTERNACIONAL**

**Comité Científico Internacional de Honor**

**Dr. Adolfo A. Abadía**

*Universidad ICESI, Colombia*

**Dr. Carlos Antonio Aguirre Rojas**

*Universidad Nacional Autónoma de México, México*

**Dr. Martino Contu**

*Universidad de Sassari, Italia*

**Dr. Luiz Alberto David Araujo**

*Pontificia Universidad Católica de Sao Paulo, Brasil*

**Dra. Patricia Brogna**

*Universidad Nacional Autónoma de México, México*

**Dr. Horacio Capel Sáez**

*Universidad de Barcelona, España*

**Dr. Javier Carreón Guillén**

*Universidad Nacional Autónoma de México, México*

**Dr. Lancelot Cowie**

*Universidad West Indies, Trinidad y Tobago*

**Dra. Isabel Cruz Ovalle de Amenabar**

*Universidad de Los Andes, Chile*

**Dr. Rodolfo Cruz Vadillo**

*Universidad Popular Autónoma del Estado de Puebla, México*

**Dr. Adolfo Omar Cueto**

*Universidad Nacional de Cuyo, Argentina*

**Dr. Miguel Ángel de Marco**

*Universidad de Buenos Aires, Argentina*

**Dra. Emma de Ramón Acevedo**

*Universidad de Chile, Chile*

**Dr. Gerardo Echeita Sarrionandia**

*Universidad Autónoma de Madrid, España*

**Dr. Antonio Hermosa Andújar**

*Universidad de Sevilla, España*

**Dra. Patricia Galeana**

*Universidad Nacional Autónoma de México, México*

**Dra. Manuela Garau**

*Centro Studi Sea, Italia*

**Dr. Carlo Ginzburg Ginzburg**

*Scuola Normale Superiore di Pisa, Italia*

*Universidad de California Los Ángeles, Estados Unidos*

**Dr. Francisco Luis Girardo Gutiérrez**

*Instituto Tecnológico Metropolitano, Colombia*

**José Manuel González Freire**

*Universidad de Colima, México*

**Dra. Antonia Heredia Herrera**

*Universidad Internacional de Andalucía, España*

**Dr. Eduardo Gomes Onofre**

*Universidade Estadual da Paraíba, Brasil*

**Dr. Miguel León-Portilla**

*Universidad Nacional Autónoma de México, México*

**Dr. Miguel Ángel Mateo Saura**

*Instituto de Estudios Albacetenses "Don Juan Manuel", España*

**Dr. Carlos Tulio da Silva Medeiros**

*Diálogos em MERCOSUR, Brasil*

**+ Dr. Álvaro Márquez-Fernández**

*Universidad del Zulia, Venezuela*

**Dr. Oscar Ortega Arango**

*Universidad Autónoma de Yucatán, México*

**Dr. Antonio-Carlos Pereira Menaut**

*Universidad Santiago de Compostela, España*

**Dr. José Sergio Puig Espinosa**

*Dilemas Contemporáneos, México*

**Dra. Francesca Randazzo**

*Universidad Nacional Autónoma de Honduras, Honduras*

**Dra. Yolando Ricardo**

*Universidad de La Habana, Cuba*

**Dr. Manuel Alves da Rocha**

*Universidade Católica de Angola Angola*

**Mg. Arnaldo Rodríguez Espinoza**

*Universidad Estatal a Distancia, Costa Rica*

**Dr. Miguel Rojas Mix**

*Coordinador la Cumbre de Rectores Universidades  
Estatales América Latina y el Caribe*

**Dr. Luis Alberto Romero**

*CONICET / Universidad de Buenos Aires, Argentina*

**Dra. Maura de la Caridad Salabarría Roig**

*Dilemas Contemporáneos, México*

**Dr. Adalberto Santana Hernández**

*Universidad Nacional Autónoma de México, México*

**Dr. Juan Antonio Seda**

*Universidad de Buenos Aires, Argentina*

**Dr. Saulo Cesar Paulino e Silva**

*Universidad de Sao Paulo, Brasil*

**Dr. Miguel Ángel Verdugo Alonso**

*Universidad de Salamanca, España*

**Dr. Josep Vives Rego**

*Universidad de Barcelona, España*

**Dr. Eugenio Raúl Zaffaroni**

*Universidad de Buenos Aires, Argentina*

**Dra. Blanca Estela Zardel Jacobo**

*Universidad Nacional Autónoma de México, México*

**Comité Científico Internacional**

**Mg. Paola Aceituno**

*Universidad Tecnológica Metropolitana, Chile*

**Ph. D. María José Aguilar Idañez**

*Universidad Castilla-La Mancha, España*

**Dra. Elian Araujo**

*Universidad de Mackenzie, Brasil*

**Mg. Romyana Atanasova Popova**

*Universidad Suroeste Neofit Rilski, Bulgaria*

**Dra. Ana Bénard da Costa**

*Instituto Universitario de Lisboa, Portugal  
Centro de Estudios Africanos, Portugal*

**Dra. Alina Bestard Revilla**

*Universidad de Ciencias de la Cultura Física y el  
Deporte, Cuba*

**Dra. Noemí Brenta**

*Universidad de Buenos Aires, Argentina*

**Ph. D. Juan R. Coca**

*Universidad de Valladolid, España*

**Dr. Antonio Colomer Vialdel**

*Universidad Politécnica de Valencia, España*

**Dr. Christian Daniel Cwik**

*Universidad de Colonia, Alemania*

**Dr. Eric de Léséulec**

*INS HEA, Francia*

**Dr. Andrés Di Masso Tarditti**

*Universidad de Barcelona, España*

**Ph. D. Mauricio Dimant**

*Universidad Hebrea de Jerusalén, Israel*

**Dr. Jorge Enrique Elías Caro**

*Universidad de Magdalena, Colombia*

**Dra. Claudia Lorena Fonseca**

*Universidad Federal de Pelotas, Brasil*

**Dra. Ada Gallegos Ruiz Conejo**

*Universidad Nacional Mayor de San Marcos, Perú*

**Dra. Carmen González y González de Mesa**

*Universidad de Oviedo, España*

**Ph. D. Valentin Kitanov**

*Universidad Suroeste Neofit Rilski, Bulgaria*

**Mg. Luis Oporto Ordóñez**

*Universidad Mayor San Andrés, Bolivia*

**Dr. Patricio Quiroga**

*Universidad de Valparaíso, Chile*

**Dr. Gino Ríos Patio**

*Universidad de San Martín de Porres, Perú*

**Dr. Carlos Manuel Rodríguez Arrechavaleta**

*Universidad Iberoamericana Ciudad de México, México*

**Dra. Vivian Romeu**

*Universidad Iberoamericana Ciudad de México, México*

**REVISTA  
INCLUSIONES** M.R.  
REVISTA DE HUMANIDADES  
Y CIENCIAS SOCIALES

**Dra. María Laura Salinas**  
*Universidad Nacional del Nordeste, Argentina*

**Dr. Stefano Santasilia**  
*Universidad della Calabria, Italia*

**Mg. Silvia Laura Vargas López**  
*Universidad Autónoma del Estado de Morelos, México*

**CUADERNOS DE SOFÍA  
EDITORIAL**

**Dra. Jaqueline Vassallo**  
*Universidad Nacional de Córdoba, Argentina*

**Dr. Evandro Viera Ouriques**  
*Universidad Federal de Río de Janeiro, Brasil*

**Dra. María Luisa Zagalaz Sánchez**  
*Universidad de Jaén, España*

**Dra. Maja Zawierzeniec**  
*Universidad Wszechnica Polska, Polonia*

Editorial Cuadernos de Sofía  
Santiago – Chile  
OBU – C HILE

## Indización, Repositorios y Bases de Datos Académicas

Revista Inclusiones, se encuentra indizada en:





REX



UNIVERSITY OF  
SASKATCHEWAN



Universidad  
de Concepción

BIBLIOTECA UNIVERSIDAD DE CONCEPCIÓN

Hellenic Academic Libraries Link

HEAL LINK

Σύνδεσμος Ελληνικών Ακαδημαϊκών Βιβλιοθηκών

**REGULATION AND FINANCING OF ENVIRONMENTAL PROGRAMS: DEVELOPMENT  
OF PUBLIC-PRIVATE PARTNERSHIPS IN THE DIGITAL ECONOMY**

**Dr. Evgeny V. Alekseev**

Moscow State University of Civil Engineering (National Research University), Russia  
ORCID: 0000-0001-6345-3240  
AlekseevE@mgsu.ru

**Ph. D. (c) Galina Viktorovna Pinkovskaya**

Institute of Service Technologies, Russia  
ORCID: 0000-0002-3773-4409  
galina-pinkovskaya@mail.ru

**Ph. D. (c) Yuliya Vladislavovna Ustinova**

Kemerovo State University, Russia  
ORCID: 0000-0002-1649-889X  
yul48888048@yandex.ru

**Dr. Evgeniya Olegovna Ermolaeva**

Kemerovo State University, Russia  
ORCID: 0000-0003-2312-7955  
eeo38191@mail.ru

**Ph. D. (c) Tatyana Sergeevna Romanishina**

Russian State University of Tourism and Service, Russia  
ORCID: 0000-0002-8224-3748  
romanishina.t.s@yandex.ru

**Fecha de Recepción:** 06 de mayo de 2020 – **Fecha Revisión:** 06 de junio de 2020

**Fecha de Aceptación:** 23 de agosto de 2020 – **Fecha de Publicación:** 01 de octubre de 2020

**Abstract**

The need to ensure sustainable growth in the standard of living of the population through the introduction of environmentally oriented programs and projects makes all the institutions of socioeconomic relations more active. For the implementation of environmentally oriented programs and projects, one of the important tasks of environmental policy is the harmonization of environmental and economic relations. As a result, it is necessary to search for effective and competitive forms of solidarity regulation and financing of such programs and projects, which provide for close interaction of the business sector, government authorities and society. The study provides a theoretical analysis of the concept of public-private partnership. Based on an expert survey, the forms of public-private partnership, the main expected effects from the implementation of public-private partnership mechanisms and the criteria for its application in the implementation of environmental programs and projects are determined. Foreign experience in the application of various forms of public-private partnership in the environmental sphere is analyzed.

**Keywords**

Environmental projects – Contract – Concession – Joint venture



**Para Citar este Artículo:**

Alekseev, Evgeny V.; Pinkovskaya, Galina Viktorovna; Ustinova, Yuliya Vladislavovna; Ermolaeva, Evgeniya Olegovna y Romanishina, Tatyana Sergeevna. Regulation and financing of environmental programs: development of public-private partnerships in the digital economy. Revista Inclusiones Vol: 7 num Especial (2020): 372-385.

Licencia Creative Commons Attribution Non-Comercial 3.0 Unported  
(CC BY-NC 3.0)

Licencia Internacional



## Introduction

Financing and investments are the dominant factors of balanced functioning and environmentally friendly nature management in accordance with the needs of society<sup>1</sup>. The theoretical and practical need to develop long-term actions to stabilize the situation in environmental management and ensure the development of environmental infrastructure as the basis for sustainable development requires the selection of promising directions of financing.

Ensuring sustainable rates of development and achieving the strategic goals of the state is impossible without interaction between government bodies and business<sup>2</sup>. The orientation of strategic plans solely on the use of budgetary funds does not allow the authorities to implement large-scale strategic projects.

The system of solidarity financing is a complex interconnected set of financial transactions associated with the subordination of economic processes to the interests of human development<sup>3</sup>. As a system of socioeconomic relations, it is characterized by the unity of the following postulates. Firstly, it is the creation of open channels for the alternative provision of monetary resources for entities that cannot meet financial needs through traditional banking channels. Secondly, financial resources act as a catalyst for social ties between the subjects of relationships. Thirdly, there is a maximum provision of both economic and social needs of the participants in the interaction process<sup>4</sup>.

According to researchers<sup>5</sup>, the most effective and efficient mechanism of solidarity financing of environmentally oriented programs and projects is public-private partnership (PPP). The emergence and development of private entrepreneurship make it necessary to establish relationships between the state and private structures, which provides for joining

---

<sup>1</sup> M. N. Dudin; N. P. Ivashchenko; A. G. Gurinovich; O. M. Tolmachev y L. A. Sonina, "Environmental Entrepreneurship: Characteristics of Organization and Development", *Entrepreneurship and Sustainability Issues* Vol: 6 num 4 (2019): 1861-187 y A. Anfinogentova; M. Dudin; N. Lyasnikov y O. Protsenko, "Methods of assessing the quality of agribusiness activity in the regional economy based on environmentally responsible approach", *Economy of Region* Vol: 13 num 2 (2017): 579-590.

<sup>2</sup> M. N. Dudin; O. F. Shakhov; N. V. Vysotskaya y D. I. Stepanova, "Public and Private Partnership: Innovation-Driven Growth of Agriculture at the Regional Level", *Journal of Environmental Management and Tourism* Vol: 10 num 7 (2020): 1435-1444 y I. A. Bareeva; S. M. Vasin; G. A. Sugrobova y L. N. Korchagina, "Social Partnership in Human Resources Management", *Journal of Advanced Research in Law and Economics* Vol: 8 num 8 (2018): 2339-2353.

<sup>3</sup> I. L. Vorotnikov; K. P. Kolotyryn; A. V. Romanov; A. V. Nayanov y M. Sh. Gutuev, "Sustainability Risk Mitigation in Food Industry under Public-Private Partnership", *Utopía y Praxis Latinoamericana* Vol: 25 (2020); J. A. Romanova; N. Yu. Barkova; O. A. Borodina; M. V. Soloveva y O. E. Ustinova, "Innovative Development of the Food Industry in the Conditions of Sanctions and Import Substitution on the Basis of Public-Private Partnership", *Journal of Advanced Research in Law and Economics* Vol: 10 num 2 (2020): 663 – 673 y L. S. Morozova; N. V. Khavanova; E. A. Vetrova y J. O. Sulyagina, "Scientific basis of the organisation of public-private partnership", *Revista Inclusiones* Vol: 7 num Especial (2020): 535-545.

<sup>4</sup> A. Artis, "Social and Solidarity Finance: A Conceptual Approach", *Research in International Business and Finance* Vol: 39 (2017): 737-749.

<sup>5</sup> J. Forrer; J. E. Kee y Z. Zhang, "Private finance initiative: A better public-private partnership?", *Public Manager* Vol: 31 num 2 (2002): 43-47 y G. A. Hodge y C. Greve, "Public-private partnerships: an international performance review", *Public Administration Review* Vol: 67 num 3 (2007): 545-558.

efforts to meet public needs. In market conditions, the state has several functions that it cannot always perform. Combining government regulation and private sector opportunities and forging partnerships between them can greatly contribute to solving environmental problems<sup>6</sup>.

In foreign theory and practice, the definition of PPP is used. In Russian practice, the concepts of PPP can be translated as “state-private partnership”, “public-private partnership” or even “communal-private partnership”. This is due to the fact that the meaning of “public partner” in most foreign countries has a broader meaning than “state”. In world practice, public partners can be not only government bodies, but also local governments, public organizations and charitable foundations.

It should be noted that PPP most closely reproduces the concept where public organizations are actively involved in relations with the private sector while emphasizing the public orientation. However, in post-Soviet countries, the concept of state-private partnership is most often used. This is due to the fact that the state is the initiator of most PPP projects. In addition, it sets priorities and invites businesses to take part in programs and projects that cannot be implemented solely through the efforts of the state.

There are various definitions of the term “PPP”, and it is considered from at least three positions:

1) as a form of interaction between the state and the private sector for the implementation of socially significant projects on mutually beneficial terms<sup>7</sup>;

2) as a relationship of cooperation between the state and business for the implementation of socially significant projects<sup>8</sup>;

3) as a public institution, within which joint activities of the state and the private sector are carried out to meet the needs of society<sup>9</sup>.

Researchers<sup>10</sup> consider PPP based on different approaches to the main classification features: legal form of interaction; pooling assets (resources and competencies); distribution of risks; state property as an object of partnership; focus on solving state and socially significant tasks and achieving socioeconomic effect and strategic goals of economic development; receipt and distribution of income (profit, benefits) between the parties (participants) of the PPP; equality of the parties to partnership interaction; mutually beneficial cooperation.

<sup>6</sup> R. Kemp; S. Parto y R. B. Gibson, “Governance for sustainable development: moving from theory to practice”, *International Journal of Sustainable Development*. Vol: 8 num 1 (2005): 12-30.

<sup>7</sup> J. Zheng; J. K. Roehrich y M. A. Lewis, “The dynamics of contractual and relational governance: Evidence from long-term public-private procurement arrangements”, *Journal of Purchasing and supply management*. Vol: 14 num 1 (2008): 43-54.

<sup>8</sup> S. Leitch y J. Motion, “Public private partnerships: consultation, cooperation and collusion”, *Journal of Public Affairs* Vol: 3 num 3 (2003): 273-278.

<sup>9</sup> N. Pongsiri, “Regulation and Public-Private Partnerships”, *The International Journal of Public Sector Management* Vol: 15 num 6 (2002): 487-495.

<sup>10</sup> R. Liang; C. Wu; Z. Sheng y X. Wang, “Multi-Criterion Two-Sided Matching of Public-Private Partnership Infrastructure Projects: Criteria and Methods”, *Sustainability* Vol: 10 (2018) y M. J. Garvin y D. Bosso, “Assessing the Effectiveness of Infrastructure Public-Private Partnership Programs and Projects”, *Public Works Management Policy* Vol: 13 (2008): 162-178

DR. EVGENY V. ALEKSEEV / PH. D. (C) GALINA VIKTOROVNA PINKOVSKAYA / PH. D. (C) YULIYA VLADISLAVOVNA USTINOVA  
DR. EVGENIYA OLEGOVNA ERMOLAEVA / PH. D. (C) TATYANA SERGEEVNA ROMANISHINA

P. Scharle<sup>11</sup> believes that PPP is a specific method of government procurement of capital-intensive goods and services for which the budget cannot bear the costs at a time. On the other hand, this is the participation of private business in the creation of certain goods or services, which are of a public (state) nature, based on risk-sharing with the state.

P. Bloomfield<sup>12</sup> argues that PPP is a system of cooperation between the private sector, enterprises and business organizations with government agencies, as well as regional corporations with state-owned enterprises and institutions, aimed at achieving common economic goals, to address pressing socioeconomic problems.

According to V.G. Varnavskii<sup>13</sup>, PPP is coregulation, that is, joint regulation of certain public relations by the state and business, which means the transfer of part of the functions of the state to the private sector and which is based, on the one hand, on the pooling of their resources and potentials and, on the other hand, on the distribution of their responsibilities and risks.

T. Bovaird<sup>14</sup> focuses on the balance of interests of the state and business. The scholar argues that if a balance of interests exists, then the state and business receive benefits that are unattainable when trying to invest independently. In his opinion, in PPP both the state and business, when interacting on the principles of partnership, have their own interest, which in the future brings them both benefits. At the same time, the benefits of implementing a PPP differ from each other due to the different goals pursued by the parties.

The overwhelming majority of researchers<sup>15</sup> note the project nature of PPP, meaning, it is created for certain tasks and after the completion of the project is terminated.

J. Quiggin<sup>16</sup> believes that business, taking part in partnership with the state, counts on a certain set of guarantees and preferences at the expense of administrative, material, financial and natural resources of the state. In addition, for the private sector, the benefits of participating in PPP are the receipt of a guaranteed income for the long term, as well as the possibility of expanding their activities. By entering into a partnership with business, the state gets the opportunity not only to attract additional sources of funding for the implementation of environmental programs and projects, which, in turn, reduces the burden on the budget, but also to form a flexible and efficient management system.

---

<sup>11</sup> P. Scharle, "Public private partnerships as a social game", *Innovation* Vol: 15 num 3 (2002): 227-252.

<sup>12</sup> P. Bloomfield, "The challenging business of long-term public-private partnerships: Reflections on local experience", *Public Administration Review* Vol: 66 num 3 (2006): 400-411.

<sup>13</sup> V. G. Varnavskii, *Partnerstvo gosudarstva i chastnogo sektora: formy, proekty, riski* (Moscow: Nauka, 2005), 315.

<sup>14</sup> T. Bovaird, "Public-private partnerships: From contested concepts to prevalent practice", *International Review of Administrative Sciences* Vol: 70 num 2 (2004): 199-215.

<sup>15</sup> D. Martimort y J. Pouyet, "To build or not to build: Normative and positive theories of public-private partnerships", *International Journal of Industrial Organization* Vol: 26 num 2 (2008): 393-411 y R. R. Geddes y B. L. Wagner, "Why Do States Adopt Public-Private Partnership Enabling Legislation?", *Journal of Urban Economics* Vol: 78 (2013): 30-41.

<sup>16</sup> J. Quiggin, "Risk, PPP, and the Public Sector Comparator", *Australian Accounting Review* Vol: 14 num 2 (2004): 51-61.

The parties to the partnership are endowed with certain functions that, when clearly allocated, balance their relationship and ensure long-term implementation. At the same time, the state plays a key role in such interaction, since the object of the transaction is primarily state property and the subject is the implementation of state functions.

Today in Russia, PPP projects are implemented in various spheres of the economy: air transport, railway transport, motor transport, road construction, construction, housing and communal services, etc. They are most widespread in the infrastructure sectors of the economy. In the field of environmental management and environmental protection, the formation of a mechanism for interaction between PPP is at the initial stages of development and implementation. It requires significant efforts to create theoretical, methodological and applied foundations for cooperation between business and government and effective involvement of the private sector in regulation and financing of environmental programs.

The purpose of the study is to explore the possibilities of PPP in the regulation and financing of environmental programs in the digital economy.

The hypothesis of the study: the main defining feature of PPP in the digital economy is that this mechanism is used to implement socially significant, including environmental, programs and projects.

According to the results of the study, it can be concluded that the purpose of the study has been achieved.

## **Methods**

To achieve the purpose of the study, a set of theoretical and empirical research methods was used: theoretical methods (analysis, synthesis, comparison, generalization) – in the study of scientific literature on the problems of using PPP in the management and financing of environmental programs; empirical methods (expert survey method).

When carrying out the expert survey, the experts were asked to fill out a semiformalized questionnaire on a voluntary basis. The expert survey was attended by experts (40 people) – employees of municipal authorities and private companies whose professional activities are related to the implementation of environmental programs and projects at the municipal and regional levels. They were asked questions related to the forms of PPP, the main expected effects from the implementation of PPP mechanisms, the criteria for using PPP in the implementation of environmental programs and projects, as well as foreign experience in the use of various forms of PPP in the environmental sphere.

All survey participants were warned about the purpose of the survey and the plans of the organizers of the study to publish results in a generalized form.

## **Results**

According to the interviewed experts, the implementation of environmental PPP projects in the implementation of environmental programs most often occurs in the following forms (Table 1).

No	PPP objectives	%*
1	design, construction and operation of infrastructural production facilities, the ultimate goal of which is to improve the quality of functioning of ecosystems, natural areas and objects and (or) ensure their rational use	90%
2	transfer to the private sector for management of natural areas and objects remaining in state or communal ownership	82.5%
3	granting concession and lease of natural territories and objects that remain in state or municipal ownership	80%
4	design, construction and operation of recreational, tourist and health institutions and their infrastructure within certain natural areas and facilities	75%

Note: compiled based on the expert survey; \* – percentage of expert mentions

Table 1

### Forms of PPP in the implementation of environmental programs and projects

The experts identified the potential general positive effects of PPP mechanisms in the implementation of environmental programs (Table 2).

PPP effect type	Description of the main components
Economic	Increase of welfare, competitiveness of the economy, level of provision of environmental goods and services, reduction of budget expenditures, development of environmental entrepreneurship
Economic and environmental	Reduction of economic losses from pollution, resource intensity, growth of fixed environmental assets, increase in the amount of natural capital, provision of natural assets
Environmental	Improvement of the environment, reduction of environmental risks
Political and economic	Improvement of the country's environmental image
Social	Improving the provision of living conditions for a person, improving the population, increasing the level and quality of life, reducing morbidity, mortality
Synergistic	Integral economic effect from interaction and mutual strengthening of action at the intersection of factors and all constituent types of effect
External	Externalities are manifested in related activities and sectors of the economy

Note: compiled based on the expert survey

Table 2

### Main expected effects from the implementation of PPP mechanisms in the implementation of environmental programs and projects

According to the experts, the development and use of PPP mechanisms in the process of regulation and financing of environmental programs require the definition of modern criteria and algorithms for choosing between the traditional tender procedure and the formation of PPP. Consequently, the public sector, public authorities determine the procedure and methodology for selection, and the PPP mechanism becomes expedient and justified if the following criteria are adhered to (Table 3).

No	PPP Criteria	%*
1	the authority is able to determine the level of quality that the private partner must adhere to when implementing PPP	90%
2	the ability to determine indicators of efficiency and effectiveness of the program implementation	87.5%
3	implementation of preliminary and final assessment of the implementation of individual points of the program and types of environmental infrastructure	85%
4	impossibility of solving the environmental problem by another means and using	80%

	other mechanisms	
5	the advantages of using PPP outweigh the disadvantages of using it and provide a significant positive effect on society, population, environment, state	75%
6	creation of public-private incentives for investing in solving environmental problems (water management, environmental pollution, neutralization of environmental risks, reducing the nature and resource intensity of the production process, products, etc.)	70%

Note: compiled based on the expert survey; \* – percentage of expert mentions

Table 3

PPP criteria for the implementation of environmental programs and projects

The results of the expert survey made it possible to form an extended classification of PPP forms (Table 4) in the field of implementation of environmental programs based on classification criteria.

PPP form	Average term of agreement, years	Provision of services	Provision of working capital	Obtaining net profit/covering net losses	Long-term financing	Asset ownership	Sector planning and regulation of services
Private services market shareholding and financing	unlimited period	PUB	PUB/PR	PUB	PUB/PR	PUB	PUB
Service contract	2-3	PR	PUB	PUB	PUB	PUB	PUB
Management contract	2-5	PR	PUB	PUB	PUB	PUB	PUB
Leasing	7-15	PR	PR	PR	PUB	PUB	PUB
BOT (Build-Operate-Transfer)	20-30	PR	PR	PR	PR	PUB	PUB
BOO (Build-Own-Operate)	20-30	PR	PR	PR	PR	PR	PUB
Concession	20-30	PR	PR	PR	PR	PUB	PUB
Alienation and sale of assets	unlimited period	PR	PR	PR	PR	PR	PUB

Note: compiled based on the expert survey; PUB – public; PR – private.

Table 4

Extended classification of PPP forms in the implementation of environmental programs and projects

The experts believed that as a result of the implementation of PPP, a synergistic effect can be obtained, which will help to increase the efficiency of the state and business by combining them. In this case, the effect of the partnership exceeds the sum of the effects of the activities of each subject of activity.

## Discussion

Further, the international experience of using various forms of PPP in the environmental sphere will be analyzed in more detail.

According to the experts, cooperation between partners is carried out within various structures, with different competencies, with a different set of tasks and sources of funding. Therefore, there are a large number of different options for using PPP.

Thus, European Commission in the *Green Paper on Public-Private Partnerships and Community Law on Public Contracts and Concessions* distinguishes contractual PPP, in which the partnership between the public and private sectors is based exclusively on contractual relations, and institutional PPP, which include cooperation between the public and private sectors within a separate structure<sup>17</sup>. At the same time, PPP contractual forms cover models where one or more functions are transferred to a private partner.

The key difference between the various models is considered to be the nature and degree of risk that is transferred from government to business. In accordance with this criterion, R. Wettenhall distinguishes the following models<sup>18</sup>:

- management contracts in which part of the operational risk in the business can be transferred to the concessionaire. That is, a state-owned enterprise or institution is transferred to the management of a management company – the state transfers its management functions to a concessionaire, a priori on the basis that private management is more effective than state management. The concessionaire's remuneration may vary depending on the profitability of the company and depends entirely on the volume of operating profit, but significant operational risk remains on the public side, since the financial return from the transferred enterprise depends on the level of the operating profit of the company;

- lease, or rent, does not provide for any payment to the concessionaire from the state. The profit of the concessionaire is directly related to the operating profit of the firm. Operational risk is fully transferred to the concessionaire. The state is responsible for the choice of the investor, and therefore bears the investment risk;

- concession, agreements such as BOT BOT (Build-Operate-Transfer) and ROT (Rehabilitate-Operate-Transfer), when the concessionaire undertakes to invest and thus assumes both operational and investment risks. In most countries, the concession is the main model. Currently, the concession has become widespread in the world under various names.

---

<sup>17</sup> The Commission. Green Paper on public-private partnerships and Community law on public contracts and concessions. Retrieved from: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52004DC0327>

<sup>18</sup> R. Wettenhall, "The Rhetoric and Reality of Public-Private Partnerships", *Public Organization Review* Vol: 3 num 1 (2003): 77-107.



The identification of certain types of transactions such as BOT and ROT showed a clear distinction between concession projects, which, accordingly, provide for the construction of new facilities “from scratch” (greenfield projects) and projects aimed at the reconstruction of existing state assets (brownfield projects).

It is the latter, associated with the transfer of existing assets for a certain long period, according to the experts, that refers to the classic concession.

In other models common in the countries of the European Union, the private partner manages the property for the benefit of the public partner. The private partner regularly receives payments only from the state. Examples of these interactions are the Private Finance Initiative (PFI) in the UK and Betreibermodell in Germany.

The PFI, the main PPP model in the UK, was introduced in 1992 as a way to attract the private sector to unattractive industries based on long-term contractual obligations, such as green programs and projects. In this model, the remuneration of the private partner does not take the form of user fees, as in concessions, but is a regular payment that is paid by the public partner. These payments can be fixed, but can also be calculated, for example, based on the availability of works or related services, or even based on the level of use of such works. There are five main PPP schemes used within PFI: DBFO (Design-Build-Finance-Operate), BOOT (Build-Own-Operate-Transfer), BOT (Build-Operate-Transfer), BOO (Build-Own-Operate), and turnkey construction<sup>19</sup>.

Currently, the UK government has developed a new approach to PPP based on strengthening regulation, cross-sectoral analysis and planning, a combination of traditional and new PPP instruments, which reveals a new model PF2 (Private Finance 2). PF2 has a new funding structure where the share of government funding is much smaller than the previous model. In addition, PF2 provides much faster and cheaper contract execution<sup>20</sup>.

The contractual form of PPP Betreibermodell in Germany includes the following models<sup>21</sup>: acquisition (E-model), owner (I-model), lease (L-model), rent (M-model) and concession (K-model) (Table 5).

Characteristics			Models				
			acquisition (E-model)	owner (I-model)	lease (L-model)	rent (M-model)	concession (K-model)
Ownership structures	of	Implementation of the contract		+			+
		Customer Contractor	+		+	+	

<sup>19</sup> A. Wall y C. Connolly, “The private finance initiative”, Public Management Review Vol: 11 (2009): 707-724.

<sup>20</sup> R. Ball, “Provision of public service infrastructure – The use of PPP in the UK and Australia: A comparative study”, International Journal of Public Sector Management Vol: 24 num 1 (2011): 5-22.

<sup>21</sup> K. Mause y T. Krumm, “Public-Private Partnership as a tool of Government: Exploring its Determinants Across German State”, German Politics Vol: 20 (2011): 527-544.

	Expiration of the contract	Customer Contractor	+	+	Option		+
Payment type	Service fee			+			
	Regular contributions			+		+	
	User funding						+
	Leasing fee (with transfer of ownership)	+			+		

Table 5  
 Characteristics of the models of the contractual form of PPP in Germany

Institutional forms of PPP, in contrast to contractual ones, provide for cooperation between public and private participants within a separate structure through the creation of an institution jointly owned by the public and private sectors, or control by the private sector of a state enterprise. In the EU countries, different terms are used to denote institutional forms and corresponding models – “joint ventures” in the UK, “mixed economy community” or “public-private community” in France, “institutional model” or “G-model” (PPP-Gesellschaftsmodell) in Germany, etc.

In the UK, joint ventures are created based on the organization of mixed public-private joint-stock companies or through the sale of part of the business of shares in existing state-owned enterprises<sup>22</sup>. Another type of institutional form is an object created for the implementation of a specific project (often without creating a legal entity), but an institutionally separate entity (foundation, trust, special legal entity).

**Conclusion**

Today, the main direction of the development of the world economy is the environmental orientation of the economies of most countries of the world based on the activation of investment and innovation processes. Neither the state, nor the private sector, nor nonprofit structures on their own are able to achieve the priority goals for the activation of environmentally oriented processes that meet the principles of sustainable development. Only the consolidation of all participants in the process and the introduction of forms of solidarity financing is a necessary basis for ensuring the environmental and economic self-sufficiency of Russia.

The experience of foreign countries shows that, subject to correct organization, PPP becomes a key factor in the new state policy; contributes to the innovative development of strategically important types of economic activity, the effective distribution of risks between the public and private sectors and the reduction of losses from natural-man-made and environmental emergencies; provides significant benefits from investment in government programs.

The introduction of such a mechanism of cooperation between public authorities, territorial communities and the private sector as PPP will contribute to the implementation of the state regional policy focused on improving the social standards of living of the population. Thus, the hypothesis of the study was confirmed that the main defining feature of PPP in the digital economy is that this mechanism is used to implement socially significant, including environmental, programs and projects.

---

<sup>22</sup> C. Connolly y T. Wall, “The global financial crisis and UK PPP”, *International Journal of Public Sector Management* Vol: 24 num 6 (2011): 533-542  
 DR. EVGENY V. ALEKSEEV / PH. D. (C) GALINA VIKTOROVNA PINKOVSKAYA / PH. D. (C) YULIYA VLADISLAVOVNA USTINOVA  
 DR. EVGENIYA OLEGOVNA ERMOLAEVA / PH. D. (C) TATYANA SERGEEVNA ROMANISHINA

Prospects for further research are in the distribution of powers between public and private partners in the implementation of PPP contracts and balancing the economic and environmental efficiency of environmental programs and projects.

## References

Anfinogentova, A.; Dudin, M.; Lyasnikov, N. y Protsenko, O. "Methods of assessing the quality of agribusiness activity in the regional economy based on environmentally responsible approach". *Economy of Region Vol: 13 num 2 (2017): 579-590.*

Artis, A. "Social and Solidarity Finance: A Conceptual Approach". *Research in International Business and Finance Vol: 39 (2017): 737-749.*

Ball, R. "Provision of public service infrastructure – The use of PPP in the UK and Australia: A comparative study". *International Journal of Public Sector Management Vol: 24 num 1 (2011): 5-22.*

Bareeva, I. A.; Vasin, S. M.; Sugrobova, G. A. y Korchagina, L. N. "Social Partnership in Human Resources Management". *Journal of Advanced Research in Law and Economics Vol: 8 num 8 (2018): 2339-2353.*

Bloomfield, P. "The challenging business of long-term public-private partnerships: Reflections on local experience". *Public Administration Review Vol: 66 num 3 (2006): 400-411.*

Bovaird, T. "Public-private partnerships: From contested concepts to prevalent practice". *International Review of Administrative Sciences Vol: 70 num 2 (2004): 199-215.*

Connolly, C. y Wall, T. "The global financial crisis and UK PPP". *International Journal of Public Sector Management Vol: 24 num 6 (2011): 533-542.*

Dudin, M. N.; Ivashchenko, N. P.; Gurinovich, A. G.; Tolmachev, O. M. y Sonina, L. A. "Environmental Entrepreneurship: Characteristics of Organization and Development". *Entrepreneurship and Sustainability Issues Vol: 6 num 4 (2019): 1861-187.*

Dudin, M. N.; Shakhov, O. F.; Vysotskaya, N. V. y Stepanova, D. I. "Public and Private Partnership: Innovation-Driven Growth of Agriculture at the Regional Level". *Journal of Environmental Management and Tourism Vol: 10 num 7 (2020): 1435-1444.*

Forrer, J.; Kee, J. E. y Zhang, Z. "Private finance initiative: A better public-private partnership?". *Public Manager Vol: 31 num 2 (2002): 43-47.*

Garvin, M. J. y Bosso, D. "Assessing the Effectiveness of Infrastructure Public-Private Partnership Programs and Projects". *Public Works Management Policy Vol: 13 (2008): 162-178.*

Geddes, R. R. y Wagner, B. L. "Why Do States Adopt Public-Private Partnership Enabling Legislation?". *Journal of Urban Economics Vol: 78 (2013): 30-41.*

Hodge, G. A. y Greve, C. "Public-private partnerships: an international performance review". *Public Administration Review Vol: 67 num 3 (2007): 545-558.*

Kemp, R.; Parto, S. y Gibson, R. B. "Governance for sustainable development: moving from theory to practice". *International Journal of Sustainable Development*. Vol: 8 num 1 (2005): 12-30.

Leitch, S. y Motion, J. "Public private partnerships: consultation, cooperation and collusion". *Journal of Public Affairs* Vol: 3 num 3 (2003): 273-278.

Liang, R.; Wu, C.; Sheng, Z. y Wang, X. "Multi-Criterion Two-Sided Matching of Public-Private Partnership Infrastructure Projects: Criteria and Methods". *Sustainability* Vol: 10 (2018).

Martimort, D. y Pouyet, J. "To build or not to build: Normative and positive theories of public-private partnerships". *International Journal of Industrial Organization* Vol: 26 num 2 (2008): 393-411.

Mause, K. y Krumm, T. "Public-Private Partnership as a tool of Government: Exploring its Determinants Across German State". *German Politics* Vol: 20 (2011): 527-544.

Morozova, L. S.; Khavanova, N. V.; Vetrova, E. A. y Sulyagina, J. O. "Scientific basis of the organisation of public-private partnership". *Revista Inclusiones* Vol: 7 num Especial (2020): 535-545.

Pongsiri, N. "Regulation and Public-Private Partnerships". *The International Journal of Public Sector Management* Vol: 15 num 6 (2002): 487-495.

Quiggin, J. "Risk, PPP, and the Public Sector Comparator". *Australian Accounting Review* Vol: 14 num 2 (2004): 51-61.

Romanova, J. A.; Barkova, N. Yu.; Borodina, O. A.; Soloveva, M. V. y Ustinova, O. E. "Innovative Development of the Food Industry in the Conditions of Sanctions and Import Substitution on the Basis of Public-Private Partnership". *Journal of Advanced Research in Law and Economics* Vol: 10 num 2 (2020): 663 – 673.

Scharle, P. "Public private partnerships as a social game". *Innovation* Vol: 15 num 3 (2002): 227-252.

The Commission. Green Paper on public-private partnerships and Community law on public contracts and concessions. Retrieved from: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52004DC0327>

Varnavskii, V. G. *Partnerstvo gosudarstva i chastnogo sektora: formy, proekty, riski*. Moscow: Nauka, 2005.

Vorotnikov, I. L.; Kolotyryn, K. P.; Romanov, A. V.; Nayanov, A. V. y Gutuev, M. Sh. "Sustainability Risk Mitigation in Food Industry under Public-Private Partnership". *Utopía y Praxis Latinoamericana* Vol: 25 (2020).

Wall, A. y Connolly, C. "The private finance initiative". *Public Management Review* Vol: 11 (2009): 707-724.

Regulation and financing of environmental programs: development of public-private partnerships in the digital economy Pág. 385

Wettenhall, R. "The Rhetoric and Reality of Public–Private Partnerships". Public Organization Review Vol: 3 num 1 (2003): 77-107.

Zheng, J.; Roehrich, J. K. y Lewis, M. A. "The dynamics of contractual and relational governance: Evidence from long-term public–private procurement arrangements". Journal of Purchasing and supply management. Vol: 14 num 1 (2008): 43-54.

REVISTA  
INCLUSIONES M.R.  
REVISTA DE HUMANIDADES  
Y CIENCIAS SOCIALES

CUADERNOS DE SOFÍA  
EDITORIAL

Las opiniones, análisis y conclusiones del autor son de su responsabilidad  
y no necesariamente reflejan el pensamiento de **Revista Inclusiones**.

La reproducción parcial y/o total de este artículo  
debe hacerse con permiso de **Revista Inclusiones**.