

Krasnopolski, Boris

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## Infrastructure of Public-Scientific Partnership (PSP) in Spatial Development of the Russian Far-East and North-Eastern Asia

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**Boris Krasnopolski, Ph.D, Professor**  
Economic Research Institute, Far Eastern Branch, Russian Academy of Science

## **Infrastructure of Public-Scientific Partnerships (PSP) in Spatial Development of the Russian Far-East and North-Eastern Asia<sup>1</sup>**

(JEL code R110)

**Keywords:** Public-Scientific Partnerships (PSP), PSP Infrastructure, Russian Far East, North-Eastern Asia, Declarations of Ministerial Conferences for Infrastructure Development

**Abstract:** *The **Public-Scientific Partnerships (PSP)** is examined as a mechanism of the interests' coordination of the scientific organizations, government bodies and businesses in realization of the detailed scientific researches of the social-economic and ecological development and introduction of their applied results into the practical economy. The **Infrastructure of PSP** is a network of the "technological chain" between all these organizations that is created in the concrete region and in the interregional/international system. This infrastructure has the inside and outside elements. The implementation of this project on example of the Russian Far East is based on the huge complex of the scientific-applied researches described in the monograph "**Pacific Russia – 2050**" (Synthesis of the applied results of the scientific-technical and economic prognosis / editors: P. Minakir, V. Sergienko), Vladivostok, 2011. These analysis and estimations are based also on the Declarations of the Asia-Pacific Ministerial Conferences on Public-Private Partnerships (PPP) for Infrastructure Development in Jakarta and Tehran (2010 and 2012) including materials of a High-level Expert Group Meeting in Tehran (2012) organized by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). The foreign experience of the organizational-methodical approaches in the use of the regional analysis and mechanisms of the infrastructure formation is discussed also in connections with the scientific researches in the area of the spatial economy.*

**Paper:** Unfortunately, right now a position of the SCIENCE in many developing countries (and in Russia also) between the Government and Business - like a position of the BEGGAR with the extended hand for the aims. In reality, the more-less effective scheme of cooperation between the Public (Government), Business and Science should be realized as the **Public-**

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**Scientific Partnerships (PSP)** that is demonstrated on the fundamental diagram (see Picture 1). This diagram is created by analogy with the famous enough **Public-Private Partnerships (PPP)** especially in the area of infrastructure development. This kind of PPP is the mechanisms of close cooperation between the Public (Government) and Private Business for the infrastructure creation. This approach and the PPP mechanisms and instruments in general are a good base for establishment the Public-Scientific Partnerships (PSP) for organization much more close cooperation and coordination between the Government, Private Business and Science.

As we can see on the diagram (see Picture 1) all three subjects are demonstrated here including the main contacts of their cooperation. Of course, each subject contains its main structural elements: *Government* – Parliament (legislation), Executive Branch (realization of legislation and management of society), Supreme Court (control for the legislation and its realization); *Business* (“big”, “medium” and “small”) and *Science* (fundamental, applied and scientific-educational organizations). The PSP contains the mechanisms of cooperation between the Public (Governmental) Structures, Business Structures and Scientific Organizations including scientific-applied structures (start-ups, Research and Development - R&D, innovation, “know-how”, engineering services and so on). The PSP area includes the parts of activities of the Government, Business and Science. This area is directed to create close cooperation and integration between these three subjects with the help of the **Infrastructure of PSP** - a network of the “technological chain” between all these organizations that should be created in the concrete region and in the interregional/international system (see Picture 2 - The fundamental diagram of the **PSP Infrastructure**).

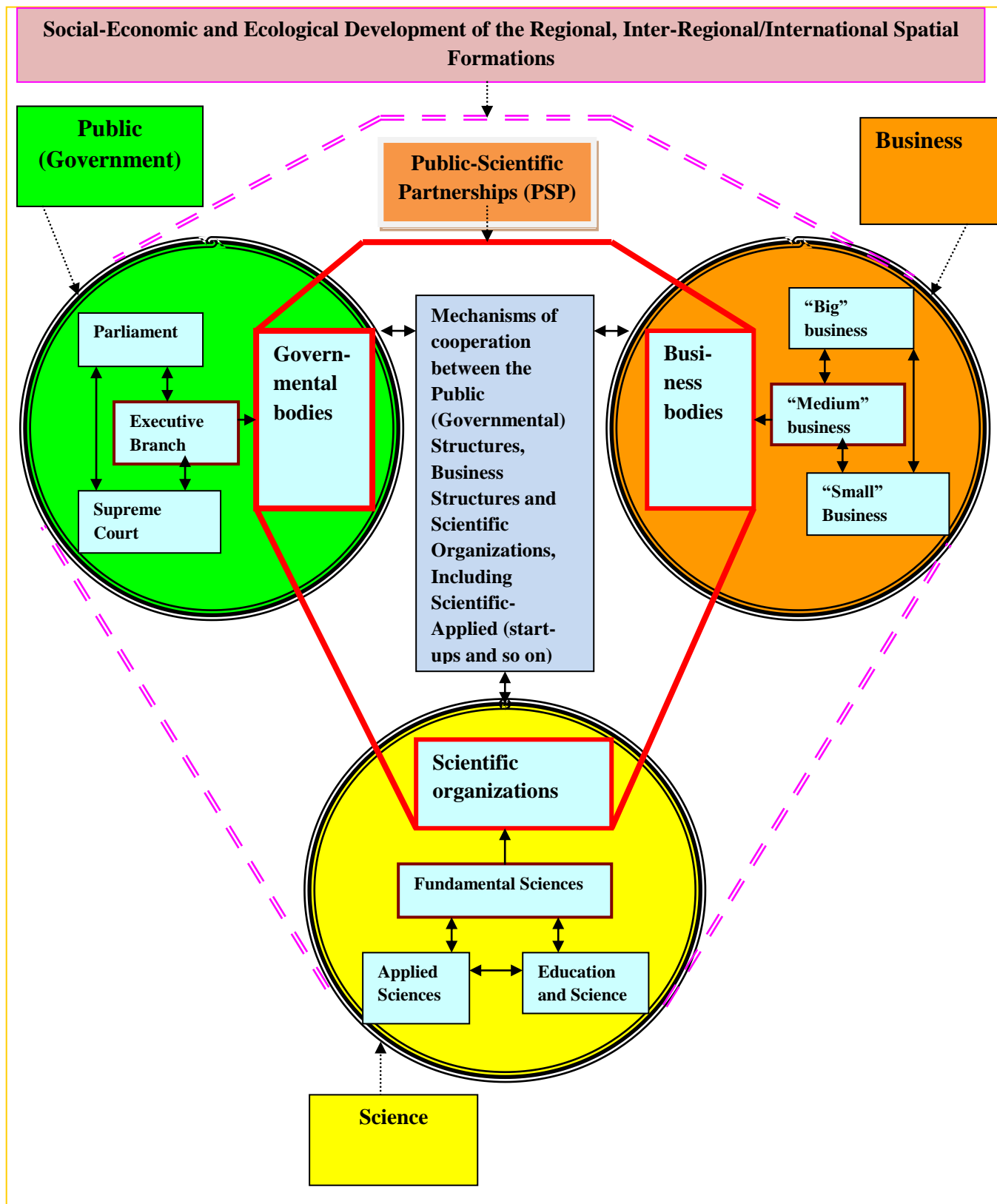
This diagram shows the main (base) elements of the PSP (Government, Business and Scientific bodies), its supporting elements (cosmo-sphere, geo-sphere, bio-sphere, socio-sphere, economic-sphere, techno-sphere, noo-sphere, spiritual-sphere) and the inside and outside elements of the infrastructure that is “tightened” these main and supporting elements in the united, unified system. It is very important: the real cooperation in full between the Government, Business and Science will be possible and effective only if this cooperation includes all these mentioned above eight supporting elements. These supporting elements reflect the real social-economic and ecological life of the people societies, and all main (base) elements of the PSP should be directed using its “technological chain” (PSP Infrastructure) for joint realization of the modern goals of these supporting elements.

In the world the examples (not ideal) of the PSP Infrastructure are exist. It is the current structure of the international and interregional associations and organizations in the regional

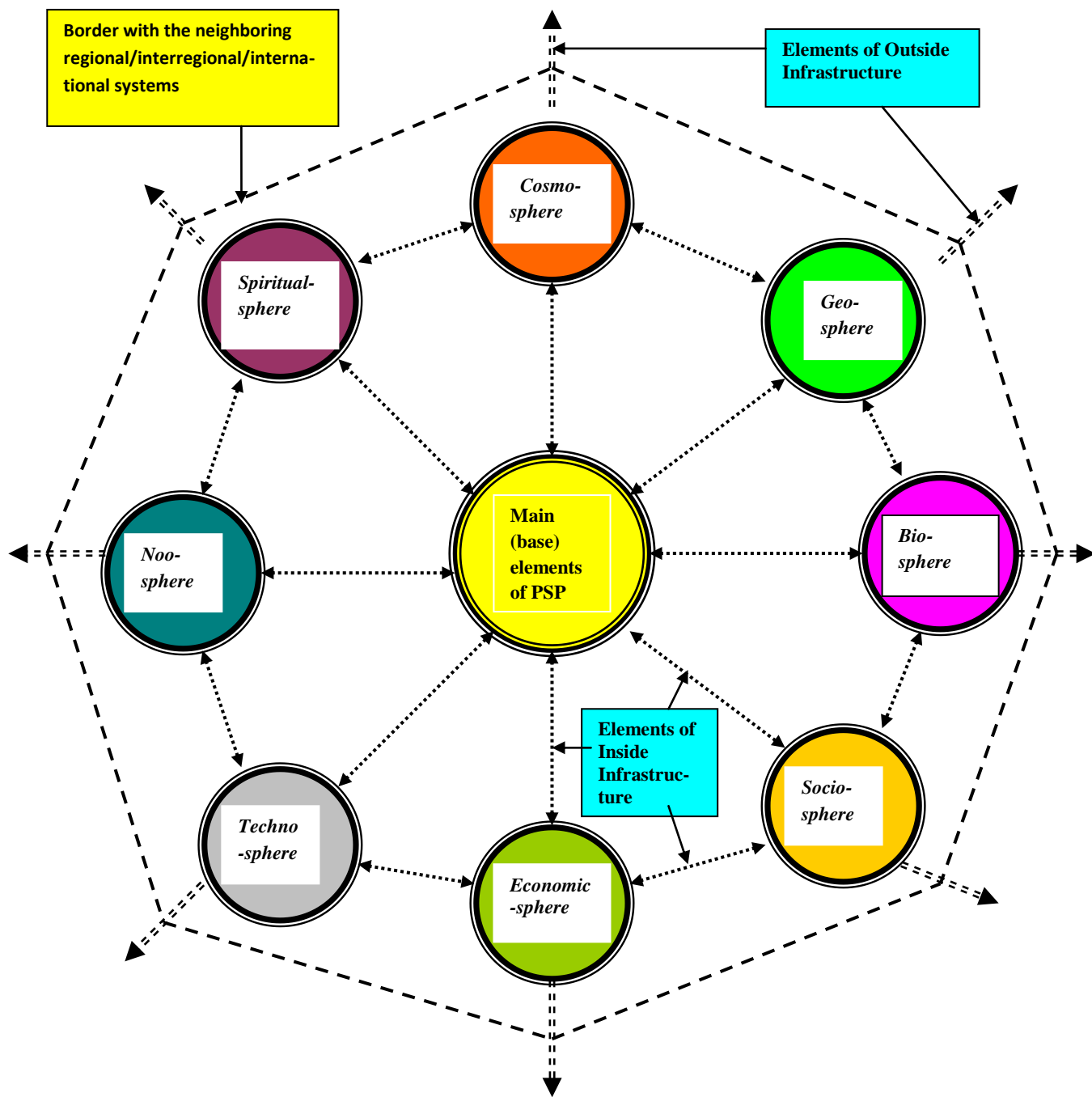
science in the different political-economic zones of the world. First of all, it is the **Regional Science Association International – RSAI** and its “sectors”: the **European Regional Science Association – ERSA**, the **North American Regional Science Council – NARSC** and the **Pacific Regional Science Conference Organization – PRSCO**. It is also the cooperation of the **NARSC** and the **Regional Science Association of the Americas – RSAMERICAS**. This “network” of organizations covers all nations except only, probably, Africa. In reality – this “network” is the real first step to creation of the international and interregional system of the **PSP Infrastructure**. The first step – because this “network” was created mainly by the scientific organizations only especially – the regional science associations. The role of the Government and Business here is episodic and doesn’t have the strong and directed mechanisms for realizations of the scientific-applied researches in the social-economic life.

By the way, the study of the current international experience in the regional sciences partnership it is possible to apply to the concrete situation in Russia. This country doesn’t have right now, for example, the National Regional Science Association. But this country has a lot of different problems with her spatial structure and regional development related with her huge geographic space. Following the world experience it is necessary to create the **Russian Regional Science Association** with her, for example, “sectors” – **Central-European, Mid-Continental (Ural and Siberia) and Far-Eastern**. It will be possible with establishment of this Association and its “sectors” to activate partnership of the regional scientific organizations, universities and academic institutes in coordination of its interregional researches in the regional-spatial disciplines, in creation of joint data base and mechanisms and instruments of the regional analysis and synthesis and so on. And (what is very important) it will be possible to activate the international partnerships of the Russian Regional Science Association and its “sectors” with the “network” of the different international and national regional science organizations described above. The world experience in the regional analysis, methodical and instrumental mechanisms in research and development of the regional-spatial sciences is much more important right now for Russia in comparison, for example, with European, American or Pacific countries. The creation of the Russian Regional Science Association will be also as the first step of establishment of the very important National **Public-Scientific Partnership (PSP)**.

The implementation of this project and creation of the PSP Infrastructure on example of the spatial development of the Russian Far East (RFE) and North-Eastern Asia (NEA) is based on

The fundamental diagram of the **Public-Scientific Partnerships (PSP)**

The fundamental diagram of the **PSP Infrastructure**



the huge complex of the scientific-applied researches described in the monograph “**Pacific Russia – 2050**”<sup>2</sup>. In this book the synthesis of the regional scientific-applied researches and the necessary governmental and business support for their realization is examined in close connection with analysis of social-economic and ecological development of the RFA and NEA. Of course, the creation of the inside and outside elements of the PSP infrastructure is proposed in this book also that should be realized for the purposes of the future development of both regions. There are reviewed all the necessary technological chains: “scientific organizations - government structures – local businesses” by the most important economic branches (supporting elements on the Picture 2). The future role of all these regions is discussed in connection with creation of the regional, interregional and international infrastructure network and with the federal and regional governmental and business bodies for practical realization of the social-economic and ecological projects in this zone.

These analysis and estimations in this project are based also on the **Declarations of the Asia-Pacific Ministerial Conferences on Public-Private Partnerships (PPP) for Infrastructure Development** in Jakarta and Tehran (2010 and 2012) including materials of a High-level Expert Group Meeting in Tehran (2012) organized by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)<sup>3</sup>. The foreign experience of the organizational-methodical approaches in the use of the regional analysis and mechanisms of the infrastructure formation is discussed also in connections with the scientific researches in the area of the spatial economy of the Asian-Pacific region and its North-Eastern zone. It is very interesting, but the most part of decisions of the last declaration in Tehran (2012) has a very close connection with creation of the **Public-Scientific Partnerships (PSP) and PSP Infrastructure** in these spatial formations. Taking into account this Declaration we can formulate some principles for creation of the PSP Infrastructure especially in North-East Asian regions including the Russian Far East:

1. The pivotal role of the PSP infrastructure (a network of the “technological chains” by all supporting elements – see Picture 2), its inside and outside elements including but not

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<sup>2</sup> Pacific Russia – 2050 (Synthesis of the applied results of the scientific-technical and economic prognosis / editors: P. Minakir, V. Sergienko), Vladivostok, 2011.

<sup>3</sup> See <http://www.pppconference.ir/>.

merely limited: from *Government* – the specially oriented complex of the legislative acts, executive laws and financial support mechanisms; from private *Business* – the specially oriented needs and requirements for the scientific-applied researches (if it is possible) and in any case the special foundations and mechanisms for financial support by all levels of business; from *Science* – the specially oriented scientific researches (fundamental, applied, and scientific-educational) and their institutional and technological base by the temporal and spatial levels of social-economic and ecological development of the society and business structures;

2. Insufficient and unsustainable PSP infrastructure and related services have strong adverse effects on social-economic growth which will prevent the countries efforts to realize their full development potential in the region;
3. PSP infrastructure development requirements are significantly larger than budget provisions and public finance and that innovative solutions are needed in order to find adequate financial resources for the development of infrastructure, improve the efficiency of infrastructure operations and create incentives to promote the maintenance of infrastructure through appropriate policies and coordinated actions in the region;
4. Importance of cooperation among the public and private sectors and science to bridge the gap between the required financial resources for infrastructure projects and the availability of finance through their partnership, within and among the nations in the region;
5. Value of the creation of specific financial arrangements for infrastructure development which would help to promote investment in infrastructure by the government and private sector in the region;
6. Public (Government and Business) partnerships with Science is a key strategy for building sustainable PSP infrastructure and delivering related services, especially in the context of the global economic downturn, which threatens to reverse the development gains made by countries in the North-East Asian region;
7. Sustainability of public-scientific partnerships is being undermined by a number of constraints in business environment, legislative, regulatory framework, institutional arrangements, financing, human resources and implementation process and so on;
8. Provision of the PSP infrastructure and related services that contributes to sustainable development outcomes needs to be given high priority in our national development agendas;



9. Effective use of the cooperatives and non-profit organizations capacities in public-scientific partnership is one of the complementary factors in enhancing the development and provision of infrastructure facilities and services in the region;
10. It is necessary for the North-East Asian countries, as appropriate, to consider the sustainability of their PSP by reviewing and assessing their:
  - (a) Public-scientific partnership advocacy initiatives;
  - (b) Opportunities to engage the government and private sector in infrastructure provision that supports sustainable development;
  - (c) Public-scientific partnership strategies, policy frameworks and action plans for infrastructure development, as well as legislative, regulatory and institutional arrangements for the PSP at the general and sectoral levels in order to identify any barriers to their effectiveness;
  - (d) Financial instruments and capacity to meet long-term equity and debt needs of infrastructure projects;
  - (e) Portfolio of bankable and sustainable infrastructure projects which could be offered to the government and private sector for financing;
  - (f) Capacity for risk management in both public and private sectors and its impact on the PSP projects;
  - (g) Group of all relevant stakeholders including, where appropriate, cooperatives, academic and applied institutions and non-profit organizations in the full PSP cycle;
  - (h) Accountability of relevant stakeholders and the transparency of the PSP process;
11. It is necessary, probably, to request the United Nations bodies and specialized agencies, the relevant offices of the United Nations secretariat, international and regional financial institutions, bilateral donors and other organizations:
  - (a) to assist the North-East Asian countries in meeting PSP infrastructure development challenges through: (i) regional and interregional cooperation in the development of the PSP; (ii) the organization of meetings and regional networking arrangements aimed at promoting the exchange of experiences and information; (iii) promoting the use of ICT-based products, networks, services and applications; (iv) to mainstream ICTs in their programs and to assist all levels of developing countries, to be involved in the preparation and implementation of

national action plans to support the fulfillment of the goals of the social-economic and ecological development;

(b) to assist countries in conducting an applied study on the positive and negative impact of taxes on the PSP infrastructure investment projects in the region and in launching a process for establishing a special working group for these purposes

(c) to assist countries, on a mutually agreed basis, in their capacity-building programs, including PSP policy framework formulation, legislative and regulatory reform and the administrative arrangements for PSP;

(d) to work collectively to establish, for example, an North-East Asian network of PSP units and programs which would, amongst other matters, provide ad hoc advisory and training services, disseminate information on PSP and coordinate regional meetings of national PSP units and programs with the aim of developing PSP projects that contribute to sustainable development;

(e) to encourage financial and monetary institutions as well as international development banks to invest on the PSP bankable projects, especially for the international interests of the neighboring group of countries;

(f) to explore ways to facilitate cooperation among countries of North-East Asian region on the PSP projects in their effort towards: (i) streamlining financial flows and motivating investment especially through attracting foreign direct investment to the PSP projects; (ii) setting up forums to invite government bodies and private sectors of different countries to cooperate in the PSP projects; and (iii) encouraging and inviting countries of the NEA region to consider setting up an *North-East Asian investment bank*;

(g) to expand their supporting activities on PSP through cooperation with all regional arrangements and organizations.

There are presented only the *proposed principles* of creation and development of the PSP Infrastructure, especially in the North-Eastern Asia, but in the near future these principles should be under more detailed special researches with concrete methodical instruments. The results of this project will be presented to the federal and regional governmental bodies, to the main business structures and to the different scientific organizations for the further development of the

PSP Infrastructure for improvement of the social-economic and ecological development on the regional and interregional/international levels.

It is very important right now, for example, in the North-Eastern Asia for Russia and China as the countries of this region. In May, 2014 the huge agreements between both countries were signed in the area of the gas production, gas transportation and creation of new gas-pipelines from Siberia to the Northern territories of China. These agreements connect not only with Russia and China, but with many other countries of the North-East Asian zone also. It is necessary right now to study and research all aspects of these business projects. And first of all, by our opinion, it is very important to create here as soon as possible the appropriated Infrastructure of the Public-Scientific Partnerships, as a first step, between Russia and China, and, as a second step, between other countries of this zone.