Forming a polycentric ecosystem to bring together of Russian and foreign stakeholders to develop of Far Eastern regions

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Abstract. In this paper, we investigated the joint efforts of Russian and foreign stakeholders to develop the regions of the Russian Far East. The competitive advantages of Russia’s border regions have been identified. Ways of enhancing competitive advantages are considered. The shortcomings of state support for regional development due to insufficient inter-sectoral and inter-regional coordination are noted. This study proposes an ecosystem approach as a mechanism to address this shortcoming. A polycentric ecosystem is a mechanism for equitable stakeholder integration. The hypothesis of this study is that economic and non-economic stakeholder interests, that are involved in launching and implementing projects as part of a development strategy underpin economic space development. We have considered how the barrier and contact functions of borders affect regional development. It has been shown that the methodology for studying stakeholder engagement in the region’s ecosystem is based on a quantitative-qualitative approach and identifies the benefits and challenges of both regions and projects. It reveals favourable and unfavourable factors influencing the integration of stakeholders in ecosystems. The prerequisites for stakeholder integration into a unified ecosystem are identified, and the main directions of integrated transport policy of the regions are considered.

1. Introduction

It is possible to form competitive advantages of the border regions based on the unique resources (natural, territorial, intellectual, etc.), and the interest in these resources both in Russia and abroad. This is facilitated by the growth of innovation and entrepreneurial activity; formation of investment and social attractiveness, including through the provision of preferences to businesses and the population.

The drawback of existing forms of state support (including advanced development territories, national projects, etc.) is the weakness of inter-sectoral and inter-regional (inter-state) coordination. Regions implement fragmented projects based on an understanding of priorities in their socio-economic development strategies.

To address this weakness, we propose the use of an ecosystem approach. The ecosystem can be interpreted as a mechanism to integrate the subjects of the socio-economic system, i.e. to form a polycentric model to unite the efforts of stakeholders for the development of regions [1].
An important point is the need to involve stakeholders in solving socio-economic problems of the region. In the modern economy, the role of social and environmental responsibility of business to both employees of companies and to the local community has been increasing. Investors should take this into account and be prepared to increase the costs associated with participation in addressing socio-economic development issues, as well as the adaptation of their business models, development strategies and corporate policies to the conditions of specific regions.

The regional ecosystem includes development project systems that include stakeholders from all production and infrastructure sectors. The polycentric model takes into account the interests of all the actors of development projects: both economic (investment return, access to distribution of project results, or outputs) and non-economic (integration into regions, participation in political and social activities, etc.).

The state has a direct interest in the manageability of the investment process. This is especially true for foreign investments, where possible imbalances can affect economic security. Working with foreign investors just to attract financial resources has no strategic perspective and is often not in the interest of stakeholders. The government should consider possible negative consequences of attracting foreign investment, such as financial dependence and possible volatility of the investment market, their unpredictable withdrawal, increased competition for Russian companies (with reduced growth opportunities; changes in workers’ remuneration and performance.

On the other hand, the entry of foreign companies into the business has the positive effect of sharing global best practices. This is important both for individual companies implementing joint projects and for the regions as a whole. In this regard, the task of forming strong integration ties between Russian and foreign stakeholders in the implementation of regional development projects becomes relevant.

2. Models and Methods
The hypothesis of this study is the assumption that the economic and non-economic interests of Russian and foreign stakeholders, who participate in the initiation and implementation of projects under the development strategy, are the basis of economic space development.

The basic models of socio-economic and spatial development of the regions in the conditions of modern economy were considered by S Glazyev [3], A Granberg [4], A Kudrin [5], V Mau [6], P Minakir [7], V Polterovich [8] and others. All of them noted the need for integration interaction both between the regions of Russia and with foreign countries. The optimal approach to such interaction leads to the accumulation of investment resources, the synergistic effect is manifested.

To characterize the development of economic space we propose to use isopots (lines in the economic field) - the basis of “integration ties that ensure the transfer of financial, information, resource and other flows within the development of the region and the implementation of specific projects. This leads to the formation of a network of development projects - growth centres throughout the region, competing or complementing each other in terms of resources” [2]. Isopots can also form the basis of strategic business and regional planning.

Bordering regions have considerable potential for the development of economic space. Naturally, part of this space, according to the strategies of the state and regions, can be offered for joint development with foreign investors.

The methodology for studying stakeholder engagement in the region’s ecosystem is based on a quantitative-qualitative approach and identifies the benefits and challenges of both regions and projects.

The quantitative approach involves the use of financial, statistical and economic indicators that reflect the interests of foreign and Russian stakeholders in participating in a particular project (at the micro level, these are primarily profit and return on investment), as well as in the development of the region (at the macro level, a number of macroeconomic and statistical indicators). The qualitative approach implies an expert or rating assessment (including the translation of quantitative indicators into a rating.
The assessment can be carried out for two objects:

- a strategic development project involving involved stakeholders, including foreign stakeholders;
- the project environment, i.e. the region or that part of it which constitutes the project ecosystem in its economic, social, environmental and political aspects and which is reflected in the assessment.

The model of integration linkage formation potential (isopot) is as follows:

\[
P_c = \sum_1^5 a_i \times FA_i - \sum_1^5 b_j \times FN_j
\]

where

- \( P_c \) – is the potential for the formation of integration links between the stakeholders of development projects,
- \( FA_i \) – favourable (pushing) factors,
- \( ai \) – weight of the factor in the evaluation (\( \sum ai = 1 \)),
- \( FN_j \) – unfavourable (hindering) factors,
- \( bj \) – weight of the factor in the evaluation (\( \sum bj = 1 \)).

Favourable integration factors reflect the economic, social, environmental and political assessment of the project and its implementation environment and may include economic attractiveness, availability and quality of resources, state and public support, implementation preferences, including political and environmental, general development of the region’s economy, etc. Unfavourable integration factors reflect economic, political, environmental and social constraints, competition of business elites, etc.

By integration and investment capacity of the region we mean the needs and interests of stakeholders in attracting (or making) investments in projects of development of new and existing businesses in order to effectively use and transfer economic and social resources.

3. Results and Discussion

Based on the analysis of the development problems of those regions and municipalities that are located in the border area, we can draw the following conclusion: the border position affects the strategic development of regions through regulations and organizational and economic decisions, which can attract both improvement of contacts and increase of barriers.

Using the possibilities of the contact and barrier function, the state or region protects its economic interests and national (regional) security. The barrier function at the same time imposes restrictions on possible cooperation.

The formation of a polycentric ecosystem with the inclusion of stakeholders from neighbouring regions can be proposed in order to develop integration links and regularise the negative impact of barrier and contact functions.

A polycentric ecosystem ensures equal integration of stakeholders with common interests in creating a unified socio-economic system to achieve a common development goal, for example: joint implementation of certain actions, combining spheres and activities in order to implement inter-sectoral, interregional and international projects and programmes. This approach implies the active involvement of foreign stakeholders in the processes of regional ecosystem development.

The polycentric ecosystem implies that decision-making centres for specific projects are located in several regions (companies), including foreign ones. At the same time, strategic responsibility is delegated to them according to the functions and processes performed.

The following prerequisites for the integration of stakeholders into a single ecosystem for the implementation of a particular regional development project can be distinguished:

- administrative, related to the management of national, public and private projects in regions;
- socio-economic, related to solving regional development problems;
- political, connected with implementation of interests of local political and business elites.
The main prerequisites for integration are resource (cooperative supply of resources), process (joint implementation of certain processes) and structural (integration of tasks and functions) interdependence.

Below we consider the potential of formation of integration ties in the Far Eastern Federal District (FEFD) using formula 1 for some indicators of socio-economic development. The statistical evaluation of the indicators was converted into a ranking (place in the district) and further into points (Table 1).

**Table 1. Assessment of the development project environment for the formation of integrative linkages in regional ecosystems**

| FA1   | FA2      | FA3        | FN1          | FN2        | FN3      | Total score |
|-------|----------|------------|--------------|------------|----------|-------------|
|       | Investments in fixed capital | Population | Gross regional product | Share in exports of Russia | Natural increase rate | Migration rate |
| Republic of Buryatia | 5 | 7 | 4 | 6 | 2 | 2 | 6 |
| Republic of Sakha (Yakutia) | 11 | 6 | 10 | 3 | 1 | 5 | 18 |
| Zabaikalsky Krai | 6 | 9 | 6 | 9 | 7 | 9 | -4 |
| Kamchatka Territory | 4 | 4 | 5 | 6 | 4 | 8 | -8 |
| Primorsky Territory | 7 | 11 | 9 | 3 | 10 | 3 | 11 |
| Khabarovsk Territory | 6 | 10 | 7 | 4 | 5 | 6 | 8 |
| Amur Region | 10 | 6 | 6 | 9 | 11 | 4 | -2 |
| Magadan Region | 3 | 2 | 3 | 9 | 8 | 10 | -19 |
| Sakhalin region | 9 | 5 | 11 | 1 | 6 | 7 | 9 |
| Jewish Autonomous Oblast | 1 | 3 | 1 | 11 | 9 | 11 | -24 |
| Chukotka Autonomous Area | 2 | 1 | 2 | 11 | 3 | 1 | -10 |

*a Source: compiled by the authors on the basis of [9].

In this assessment, we used as favourable factors the main macroeconomic indicators, such as investment, gross regional product, and the region's population (as a volume of potential human resources to implement possible projects). Foreign economic relations (their level of development in the studied regions), as well as the dynamics of population change in the regions were considered as unfavourable factors. This choice of indicators was based on the hypothesis that the project environment is primarily positively influenced by the investment climate and economic activity in the region. Negative influence is determined by social attractiveness as well as traditional external relations with existing stakeholders (in this case, foreign buyers of products).

Thus, the best socio-economic conditions for the formation of integration ties between stakeholders are in the ecosystems of the Republic of Sakha (Yakutia), Primorsky Krai and Sakhalin Oblast; the worst are in the ecosystems of the Jewish Autonomous Region and Magadan Oblast. When the assessment indicators are changed (other favourable and unfavourable indicators are added), the picture of assessing the potential for forming integration links between stakeholders will change.

The basis for the implementation of integration links in projects of economic space development is transport infrastructure, which in this case is a material embodiment of transport isopot connecting stakeholders in the economic space.

The specifics of building such isopots in border regions (subject to the implementation of ecosystems with the participation of foreign stakeholders) is to improve the capacity of border crossings as a key point in the implementation of barrier and contact functions.

The main problems of transport infrastructure development in the Far East include ensuring accessibility of remote areas, inclusion in international transport flows, ensuring that transport systems are environmentally friendly, and increasing their contribution to the region’s economic development.
Thus, the formation of an integrated regional transport policy should be developed in two directions:

- integration of corporate, municipal, regional, interregional, federal and international transport infrastructure within the region;
- integration of social, environmental and economic objectives of transport policy and, accordingly, their implementation in the transport infrastructure.

The following factors influencing the development of transport infrastructure at the present stage can be identified: the need for innovative transformations, the growth of integration processes, and the need to ensure competitiveness.

4. Conclusion
The considered approach to the formation of a polycentric ecosystem that integrates Russian and foreign stakeholders in the development of the Far East regions will make it possible to take into account the interests of all project participants, as well as project coordination at the intersectoral, interregional and international levels.

The model proposed in the study to assess the conditions for the formation of integration links in regional ecosystems makes it possible to determine the impact of the main factors (indicators) of socio-economic development on the integration environment of projects.

The novelty of this approach lies in the consideration of economic and non-economic interests of Russian and foreign stakeholders, the initiation and implementation of projects as part of development strategy. This approach can be applied in the state management of strategic development of regions.

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