ESPO oil pipeline: assessment of impact on social and economic development of municipal districts

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Abstract. The article presents the conducted analysis of the impact of the ESPO pipeline construction and operation on the socio-economic development of the territories along its route. The study area included municipal areas along the western part of the ESPO oil pipeline (the so-called ESPO-1): six municipal areas of Irkutsk region, four municipal areas of Yakutia and two municipal areas of Amur region. The study showed poor availability of jobs in oil pumping stations of the oil pipeline system, as well as the small amount of tax payments currently coming to the budgets of settlements and municipal districts, which is mainly explained by the existing system of redistribution of tax revenues. The change in the level of accessibility of transport infrastructure for the local population is also controversial: technological routes along the oil pipeline have departmental affiliation with limited access for third parties and individuals. As a result, despite the declared social orientation, the oil pipeline failed to bring enough positive changes for the majority of the territories, which resulted in much worse dynamics of the population relative to its regions in all municipal districts except for the Taishetsky district of Irkutsk region.

1. Introduction
The first negotiations between representatives of the Russian company Yukos and the China National Petroleum Company (CNPC) took place 20 years ago in 1999, when they discussed the construction of an oil pipeline from Angarsk to the PRC. The first interstate agreement on this issue, concluded in 2001, also envisaged the construction of an oil pipeline along the Angarsk-Daqing route. Then it was decided to move the starting point from Angarsk to Taishet, which would allow to begin the development of oil fields in the northern regions of Irkutsk region, as well as in Yakutia. Later, other routes were studied, the analysis of environmental impact of which was carried out, including the one by specialists from the Institute of Geography, SB RAS. During the construction, Transneft made attempts to reduce the cost of building the pipeline by moving its route closer to the Baikal-Amur Mainline, which caused widespread public protest due to the environmental threat to Lake Baikal in case of possible accidents on the pipeline [1]. As a result, the authorities decided to postpone the construction of the pipe north of the Baikal basin, which completely eliminated the possible negative consequences for the lake’s ecosystem during the construction and operation of the line [2].

It is difficult to say how much it had cost for the company to build an oil pipeline on a finally approved route: the company did not disclose accurate data on the cost of work, the conditions for obtaining a related loan from China by Transneft remained closed to the public (the condition for financing construction work was the supply of oil to China on certain conditions for 20 years). Presumably, the construction cost of the oil pipeline amounted to more than $11 billion (in this case,
the first phase of construction from Taishet to Skovorodino and the border with China, ESPO-1, is analyzed). Nevertheless, higher (in comparison with the proposed route along the BAM) construction costs were calmly received not only by people concerned about the ecological safety of the lake, but also by many residents of the territories along the construction route. It was expected that construction could contribute to the creation of new jobs, increase the tax base of municipalities, the construction of new transport routes and the reconstruction of old ones [3]. The latter problem was a little less acute for the easternmost and westernmost municipalities along the pipeline: Taishetsky, Chunsky, Bratsky, Nizhneilimsky and Ust-Kutsky districts of Irkutsk region, as well as Skovorodinsky and Tyndinsky districts of Amur region and Aldansky and Neryungrinsky districts of Yakutia, had year-round land routes with their regional centers (the quality of these routes, of course, often left much to be desired). The situation was much more complicated for the Kirensky district of Irkutsk region and the Lensky and Aldansky districts of Yakutia, where land routes did not provide constant communication of settlements with each other, with neighboring areas and with regional centers.

2. Models and Methods
The main research methods used were comparative-descriptive, problem-oriented, expert-evaluative, and cartographic methods. The main basis for the analysis was Transneft’s data on the location and transport accessibility of oil pumping stations, as well as the Yandex Maps mapping service, the data of which were used adjusted for the possibility of access by technical passage along the pipeline. In some cases, the nearest settlement to the oil pumping station was a working shift camp (usually of oil companies), such as Talakan for station no. 10. In such cases, the distance was counted to the nearest permanent settlement, since it is impossible to attract workers and maintenance personnel from the existing shift camps.

All data on the population in 2002 were taken from the census results for the corresponding year, while data for 2018 were obtained from Rosstat materials on annual population counts. In some cases, municipal districts changed their boundaries and composition (by including settlements), which required adjustments to the data of 2002 through the inclusion of the later attached settlements’ population in the population of municipal areas (for example, in 2002, Taishet was not a part of the Taishet district).

3. Results and Discussion
Today, 20 years after the first discussions on the prospects for the construction of the pipeline and in the year of its planned final commissioning at design capacity (the last three oil pumping stations are still under construction in Irkutsk region, the completion of which at the end of 2019 — 11 years earlier than the original plan — will allow the pumping of 80 million tons of oil per year according to ESPO-1. It was launched on December 28, 2009 with a throughput capacity of 15 million tons/year, which was increased in 2014 to 58 million tons), we can try to summarize some of the effects of the construction and operation of ESPO-1 on the social but the economic development of the territories.

Of course, such an impact seems to be positive in the materials presented by Transneft itself [4]. As a rule, the emphasis is on tax payments, job creation and the possibility of access to the created transport infrastructure, which in total creates “a significant impetus for the development of distant territories”. Without completely rejecting the potential positive effects for territorial development and even, probably, on innovative transformations in the country's economy [5], it is worth noting the weaknesses in the information constantly broadcast by the company and some researchers [6]. Significant tax payments to different levels of budgets were made mainly during the construction phase, including compensation for the use of roads. Tax payments at this stage for most territories make up only a small percentage of personal income tax (most of which goes to the budgets of the constituent entities of the Federation), while the number of such jobs is also small: Transneft claims 700 jobs in Bratsk, where one of the managing structures of the pipeline is located, but only 21 oil pumping stations will operate along the route upon completion of construction (by 2020), with an average number of employees about 60 people each. At the same time, as a rule, the staff of such
stations is not recruited from local residents and works on a rotational basis [7], which further reduces the positive effect on the local economy. Moreover, the analysis of the location of oil pumping stations shows that many of them would not be able to attract workers from the local population, because their daily delivery to work even from the nearest villages would entail significant labor and financial costs, which would also need to include accelerated depreciation of road transport (due to the poor quality of roads) (see figure 1). In addition, many of the settlements considered in this analysis do not have significant human resources, and the distance to relatively large settlements is even greater, for example, station no. 9 is located more than 200 km from the town of Kirensk (11 thousand inhabitants)1. Nevertheless, the location of the station within 25 km from the settlement (in the presence of high-quality road communication between them) allows us to count on the construction of housing for workers in a permanent settlement, and not only in the territory of the shift camp, as happened in Chunsky, Rechushka and Zheleznogorsk-Ilimsky, where Transneft built residential buildings2.

![Figure 1. Oil pumping stations of the ESPO-1 pipeline and the distance to the nearest settlements](image)

The use of a long-distance passage, which is formally a private technical passage serving for the maintenance of the oil pipeline, remains a complex issue. Transneft, after numerous requests by local residents to representatives of regional and federal authorities, has created an online travel permit system that allows local residents, subject to a number of conditions, to use the often only available means of communication (for representatives of commercial structures and private entrepreneurs engaged, for example, in food delivery and etc., only paid fare is possible). However, the facts of non-admission of individuals, school buses, cars of the mayor of the district, etc. [8], in turn, refuted by representatives of Transneft, are still being found. The company’s logic is understandable and legally flawless (which is confirmed by numerous inspections by the prosecutor’s office, including according to the statements of local residents) — the technical passage serves to ensure the operation of the

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1 “Eastward expansion. Transneft increases the productivity of the Eastern Siberia — Pacific Ocean (ESPO) oil pipeline”. Transneft press center, 2019 (in Russian) Income accessed online on 2.09.2019 via https://www.transneft.ru/pressroom/rg8-7

2 “Preparing to reach full capacity. ‘Transneft East’ - at the final stage of expansion of the Eastern Siberia —Pacific Ocean oil pipeline” 2019 Rossiyskaya gazeta - Ekonomika Sibiri 26(7784) (in Russian) Income accessed online on 3.09.2019 via https://rg.ru/2019/02/07/reg-dfo/zavershaetsia-stroitelstvo-poslednih-nefteperekachivushchih-stancij-ts-vsto.html
pipeline and is not a substitute for public roads. However, can this serve as an excuse for local residents who do not have high-quality roads (and even have no foreseeable prospect of waiting for their construction), but who live near a year-round highway built with state funds?

The influence of the construction of the pipeline on the activation of oil production in Irkutsk region and Yakutia, which led to a noticeable increase in revenues, primarily to regional budgets, cannot be doubted. However, among all the municipal districts through which the pipeline route passed, intensive oil production is carried out only in the Lensky district of Yakutia. In the remaining territories, the construction of the pipeline did not contribute to fundamental qualitative changes in the structure of the local economy, and the existing positive changes could not reverse the existing trend of population decline (see figure 2).

**Figure 2.** Population change in municipal areas along the route of the Western part of the Eastern Siberia — Pacific Ocean oil pipeline (ESPO-1)

It is worth noting the uneven population decline observed in municipal areas along the ESPO-1 route, as well as the mismatch of this indicator with the regional average. Thus, in Yakutia as a whole since 2002, the population has increased by 18.7‰, while in all the studied territories it has decreased. Lensky district was no exception, where there is an intensive development of oil production — here the reduction was –44.8 ‰. The indicators of the districts of Amur Region turned out to be worse, than the regional average –121.4 ‰, and only one municipal district along the entire ESPO-1 oil pipeline — Taishetsky — showed a better indicator than the average for Irkutsk region (–11.3 ‰ and –68.8 ‰ respectively). This is both the only relatively settled area located in the main settlement zone of Russia (actually interrupted in Amur region, which allows Skovorodinsky district to be attributed to it only formally), and the territory of the Taishet aluminum plant construction project, which nevertheless could not stop the population decline in the area.

4. Conclusion

Perhaps, the expectations of local residents of remote areas related to the construction of the ESPO pipeline can be objectively called unfounded [9], and the problems of socio-economic development of territories are non-core for the Transneft company (the State Federal Property Management Agency owns 100% of the company's ordinary shares or 78.1% of the authorized capital). However, in a situation of almost total depopulation of the eastern territories of the country, the use of all possible ways to support the local population seems more justified. The future of these territories, which should
not be limited to a short horizon of oil fields’ depletion, depends on whether it will be possible to create more opportunities for local residents to work in the structures of Transneft, to provide the most free access to the route along the pipeline and redistribute tax payments in a more equitable way in favor of the budgets of local settlements and municipal districts.

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