Efficiency of construction and modernization of hotel and accommodation facilities in tourist clusters

The article proposes a comprehensive solution to the current problem of the tourism industry, the shortage of accommodation facilities in regional tourist clusters, based on the intensification of construction and modernization of hotel and accommodation facilities (HAF). Based on the existing set of types of accommodation facilities, the authors propose a classification of collective accommodation facilities currently used in regional tourist clusters. A comprehensive list of types and forms of development of accommodation facilities in two main directions: construction of new and modernization of existing facilities is developed. The article proposes a methodological approach of three-stage formation of complex efficiency of construction and modernization of HAF, as well as a methodology for calculating the expected economic effect based on the income-cost method.

Keywords: tourism cluster, development of regional tourism clusters, collective accommodation facilities (CAF), construction and modernization of hotel and accommodation facilities (HAF), economic and social efficiency

The market of collective accommodation is a basic element of tourism development. As analysis has shown, the Russian Federation has a high potential for the development of the tourism industry, however, the domestic tourism infrastructure is not sufficiently developed to realize this potential [1]. Russia’s tourism industry currently lacks quality hotel and accommodation facilities (HAF), as well as there is a serious problem with roads and transport [2]. It is known that tourism clusters are a multi-faceted industry, in which the problem of infrastructure development deficit is closely related to the quantity and quality of services provided and the levels of availability and training of specialists.

It is established that the main priority direction determining the effective long-term sustainable development of tourist clusters is the factor of construction and modernization of HAF.

Based on the Decree of the Government of the Russian Federation of November 18, 2020 No. 1860 On Approval of the Regulation on classification of hotels, as amended on December 26, 2022, the author proposes the following interpretation of the classification of collective accommodation facilities (Fig. 1).

Collective accommodation facilities (CAF) are hospitality facilities designed for the temporary accommodation of tourists and travelers, which are provided on a shared-accommodation basis.

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include different types of facilities and can offer different levels of comfort and services, from simple rooms with a minimal set of amenities to premium rooms with a full range of services [3]. Collective accommodation facilities are one of the paramount elements of the infrastructure of the tourism industry and play an important role in attracting tourists to various regions [4].

The development of the hotel and accommodation stock of regional tourist clusters is divided into two groups: new construction of facilities, the second group - the modernization and conversion of facilities (Fig. 2) [5, 6].

New construction of facilities is the creation of new hotels, related structures, utilities and communications in new areas or in place of demolished old buildings, or as part of the existing tourist clusters. New construction includes all stages of the life cycle of the object: design, contracting, construction of the object, commissioning.

Completion of commenced construction is the process of bringing the construction facility to the completion of all work, including interior and exterior decoration and equipment work, as well as technical equipment and preparation for operation. Completion of construction in progress may occur for a variety of reasons, such as changes in design, delays in the execution of work, technical problems, financial difficulties, etc. The purpose of the completion of the started construction is the actual complete delivery of the object to the customer, obtaining operational documentation and permits to use the building or facility [7].

Creating places of temporary seasonal accommodation is the process of creating temporary tourist accommodation facilities for the tourist season. Such facilities may range from tents and campsites, to guarded cottages and turnkey hotels that are erected as part of clusters or on a specific plot of land, often in picturesque locations, and are used to accommodate tourists for the duration of the vacation [8].

The repurposing of existing buildings into accommodation facilities is the process of changing the functional purpose of a building for its use as an accommodation facility. Such conversion can be carried out for a variety of purposes, including increasing the profitability of the building, meeting new market needs, reducing temporary downtime, and reducing the costs of building new facilities. When repurposing a building, technical, structural, and legal constraints must be considered, as well as the economic impact of the change. As a rule, repurposing requires the reconstruction of the facility.

Reconstruction of facilities is the process of restoring and modernizing existing facilities and buildings. Reconstruction may include changes in the structure, functional purpose, appearance, as well as updating of technical systems (heating, electricity, water, etc.). The purpose of reconstruction can be improvement of living conditions, optimization of production processes, saving energy and resources, increasing the commercial attractiveness of the object, etc.

Capital repair of constructions and engineering networks is a vast complex of measures that includes replacement of outdated or damaged elements, installation of new constructions, reconstruction of objects, strengthening and reconstruction of bearing elements as well as replacement of communications and networks. Usually, major repairs are carried out taking into account the moral and physical deterioration of fixed assets to improve the functional properties of objects of the hotel and housing stock, as well as to increase their operating life.

Improving the comfort and techno-equipment of facilities are modern measures aimed at improving the living and working conditions of people in the accommodation facilities. Improving comfort can be achieved by installing new systems of heating, water supply and water disposal, air conditioning, updating and improving the furniture and interior, creating favorable conditions for recreation. Technological re-equipment includes automation and introduction of new technologies in the organization of tourist facilities, such as online reservation systems, electronic tours, etc. This helps to ensure a higher efficiency of operation, increase revenues and reduce the cost of operation of the facility, which is important in the tourism industry [9].

Routine cosmetic repair is a type of repair that is done to improve the appearance of a room or structure. It may include...
painting or wallpapering, replacing flooring, installing new fixtures, etc. The purpose of current cosmetic repairs is to maintain the aesthetic condition of the room.

As the results of the quantitative assessment of the factors of influence and their weighting have shown, the priority area for the effective development of tourist clusters is the construction and modernization of HAF [10].

Improvement of this factor to the greatest extent is determined by the increase in tourist flows and, accordingly, the growth of sales of tourist services.

In addition, the construction of new accommodation facilities allows to equip them with the latest technologies and communications, which increases the quality and level of service, as well as improving the environmental and energy efficiency of HAF. As a result, the main goal of building new accommodation facilities in the process of creating a competitive tourist infrastructure that can attract more tourists and meet their needs for comfortable living conditions is achieved.

During the analysis, the author found that the development of tourist clusters in the aspect of new construction and modernization of accommodation facilities provides a dual effect: economic and social. Fig. 3 presents the scheme of the process of formation of comprehensive efficiency in enhancing the reproduction of hotel and accommodation facilities (HAF).

The first stage of the scheme outlines the purpose of the process of forming the effects, the second stage sets the target performance indicators of enhanced reproduction of accommodation facilities, the third stage provides evaluation criteria in the form of economic and social indicators.

The economic and social effect of the construction and modernization of HAF as part of tourist clusters is manifested at three levels of the economy; micro- meso- and macro-level, i.e.: cluster, region and country. Table shows the three-level structural scheme of the expected types of economic and social effects from the implementation of the cluster development potential, developed by the author.

As can be seen from Table, the formation of economic and social effects begins at the micro level from the activities of tourism cluster enterprises, then the process continues at the city, oblast, regional level and ends at the federal level, taking into account the functioning of not only accommodation facilities, but also all

<table>
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<th>I step</th>
<th>Effective development of regional tourism clusters based on the reproduction of accommodation facilities</th>
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<td>Goal setting</td>
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| Stage II             | Increase in accommodations; Improving the comfort of accommodation and technical equipment of rooms; Increasing the list of services provided; Improving the quality of services; Increase of space for rent; Small business development; Growth of jobs; Average wage growth; Environmental protection |

| III stage            | 1. Economic indicators: Sales growth; Increase in the price of services provided; Increase in rents; Increase in housing stock; Increase in regional and federal taxes; Small business development; 2. Social indicators: Decrease in unemployment; Growth of average wages in the region; Improving the cultural and educational level of the population; Improvement of the medical and recreational level of the population; Development of related infrastructure in the region; Improvement of environmental and ecological indicators of the environment |

Fig. 3. The process of forming a comprehensive efficiency in improving the factor of construction and modernization of HAF
Types of economic and social effects from the construction and modernization of HAF

<table>
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<tr>
<th>Levels</th>
<th>Economic effect</th>
<th>Social effect</th>
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<tr>
<td>I. Micro-level (tourist cluster)</td>
<td>1. Income from the operation of an accommodation facility</td>
<td>1. Job growth</td>
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<td>2. Rent for non-residential premises</td>
<td>2. Increase in wages and salaries</td>
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<tr>
<td>II. Meso-level (region, territory, city)</td>
<td>1. Taxes from the operation of the OGVF</td>
<td>4. Environmental and ecological effect</td>
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<tr>
<td></td>
<td>2. Taxes from small business operations</td>
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<tr>
<td></td>
<td>3. Rents from the regional share of the OGVF</td>
<td></td>
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<tr>
<td></td>
<td>4. Related cumulative income from the operation of regional infrastructure</td>
<td></td>
</tr>
<tr>
<td>III. Macro-level (country)</td>
<td>1. Tax revenues to the federal budget</td>
<td>1. Reduction of unemployment</td>
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<td></td>
<td>2. Increase in hotel rooms</td>
<td>2. Increase in average wages</td>
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<tr>
<td></td>
<td>3. Taxes to the federal budget from small and medium-sized businesses</td>
<td>3. Growth in the tourism industry</td>
</tr>
<tr>
<td></td>
<td>4. Taxes from the use of federal infrastructure</td>
<td>4. Increase in the coverage of the population by cultural, educational, therapeutic, sports and other services</td>
</tr>
</tbody>
</table>

In this case, the income is provided by increasing the number of rooms, the price of rooms and rent for rented space. The increase in prices is explained by an increase in the level of comfort, technical upgrading of rooms, implementation of cosmetic repairs, improvement of the surrounding area, etc.

Income calculation $D_{inc}$ is made according to the formula:

$$D_{inc} = \left[ N \cdot Z_m \cdot \rho_n \cdot k_z + Q_m \cdot Z_o \cdot \rho_m \cdot k_{ma} \right] \cdot k_{sin}$$

were $N_m$ — number of rooms after modernization, pcs.;
$Z_m$ — average price for the room, taking into account the increase, rub/room;
$\rho_n$ — average rate of return;
$k_{z,m}$ — room occupancy rate after modernization;
$Q_m$ — area to be rented after the modernization, m²;
$Z_o$ — average rent, rub/m²;
$\rho_m$ — rate of return on the lease of the premises after the modernization;
$k_{ma}$ — coefficient of the volume of leased space (in relation to the total);
$k_{sin}$ — coefficient of synergistical effect.

The total cost of new hotel construction is calculated by the formula:

$$Z_{nc} = Z_{od} + Z_{sr} + Z_{as} + Z_{ab} + Z_{el},$$

were $Z_{od}$ — cost of the initial permitting documentation;
$Z_{sr}$ — cost of design and survey work;
$Z_{as}$ — cost of construction and assembly work;
$Z_{ab}$ — costs of all types of equipment;
$Z_{el}$ — commissioning costs;
For all investors, a very important and sometimes decisive condition for investing in a new construction or modernization project is the expected payback period of the investment \( T_{ra} \).

To this end, given the baseline value of the average profitability of the hotel stock in the region, you can determine the payback period, the invested funds or based on the results of the calculation \( Z_o \) or \( E_{zr} \).

\[
T_{ra} = \frac{Z_o}{E_{zr}}, \text{ years.} \quad (7)
\]

In determining the social effect, the following functional relationships are proposed, at the regional level:

\[
E_{w,r} = \left[ \frac{Q_{ar}}{N_{rb}} \cdot N_{ma} \cdot \eta_{wa} \cdot Y_{ra} \cdot Y_{rb} \cdot l_j \cdot Q_{w} \right], \quad (8)
\]

where \( \Delta Q_{ar} \) — space and room stock transferred to regional management, depending on the share of budget funding;

\( N_{ma} \) — taxes from the functioning of the tourist cluster in the regional budget;

\( N_{ma,rb} \) — taxes of small businesses;

\( \Delta Y_{rb} \) — growth in the number of jobs in the region;

\( \Delta Y_{pa} \) — reduction of the unemployment rate;

\( \Delta Y_{pa} \) — growth of average wages in the region;

\( \Delta Y_{pa} \) — increasing the cultural and educational level of the population in the region;

\( \Delta \) — regional infrastructure development;

\( Q_{w} \) — environmental protection measures in the environment.

The implementation of investment and construction projects related to the construction and modernization of HAF should be considered appropriate at the regional level if the economic effect of their implementation at the level of the investor is accompanied by the social effect at the regional and local levels.

CONCLUSIONS

The proposals presented in this paper to assess the effectiveness of construction and modernization of hotel and accommodation facilities allow for a comprehensive assessment of investment and construction projects implemented within the framework of touristic clusters. The comprehensive approach includes different types of effects: social, economic for all participants of investment and construction activities at three levels of the economy. The availability of assessment tools allows the analysis to be carried out at the early stages of investment projects, which, in turn, ensures an increase in the quality of investment decisions made at the conceptual stage.

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Эффективность строительства и модернизации объектов гостинично-жилого фонда в составе туристических кластеров

В статье предлагается комплексное решение актуальной проблемы туристической отрасли, учитывая место размещения в региональных туристических кластерах на основе активизации строительства и модернизации объектов гостинично-жилого фонда (ОГЖФ). На основе существующего множества видов объектов размещения авторами предложена классификация коллективных средств размещения, используемых в настоящее время в региональных туристических кластерах. Разработан комплексный перечень видов и форм развития объектов размещения по двум основным направлениям: строительство новых и модернизация существующих объектов. Предлагается методический подход трехэтапного формирования комплексной эффективности строительства и модернизации ОГЖФ, а также методика расчета ожидаемого экономического эффекта на основе доходно-затратного метода.

Ключевые слова: туристический кластер, развитие региональных туристических кластеров, коллективные средства размещения (КСР), строительство и модернизация объектов гостинично-жилого фонда (ОГЖФ), экономическая и социальная эффективность

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