Entrepreneurial risk as consequence of contradictions of economic interests in forestry in Russia

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Abstract. The paper presents the results of the research of entrepreneurial environment in the forest sector. Complex and simple groups of risks, defining entrepreneurial activity in the forestry sphere, are determined. The most dangerous risky factors are spotted and their profile is obtained in respect of forestry entrepreneurship.

A methodical approach to assessment of business risks in forestry is formulated, by using criteria – values of the consequences of risk manifesting and probability of risk manifesting. Critical consequences for the forestry entrepreneurship, in the case of risk realization, are the following: enterprise insecurity with own financial resources, increase of rental rates and payments, qualified personnel flow-out, disposal of key workers.

It is explained that internal imbalancing of forest relations, including economic interests of the state, entrepreneurs – forest managers, ecologists and population, which is expressed in distortion of real forest revenues, inefficient forestry running, deterioration of forest production quality, decrease of investment attractiveness of forest sector, leave of especially valuable forest for lumbering, replacement of forms and methods of lumbering and forest management, decrease of reforestation quality, etc., is an prerequisite for forestry entrepreneurial risks arising.

Key words: entrepreneurial risk, entrepreneurship, forestry, forest relations.

JEL Codes: L73, D81.

1. Introduction

The total surface of forests in Russia is 774 million hectares. Another 108 million hectares are those of lots suitable and meant for forest growing. Economic relations within the system of forestry are manifested directly through interaction between economic interests of separate subjects – forest owner (the state) and forest managers in the person of forest lot leasers. Forest legislation reformation has opened new
opportunities for switching to the path of development of forest entrepreneurship and support of business interests within the forest managing sphere. Just during four years after the reformations more than 228 million hectares were granted for lease which significantly reflects the growing interest in the forestry economy sector within the entrepreneurial sphere [1].

The state, as the forestry funds-owner, has economic, social and ecological interests [2]:

Economic interest of the state is determined by the rent, received from using forest resources by the subjects of forest entrepreneurship, and tax proceeds to budget and non-budgetary funds;

Social interest of the state constitutes in decrease of social tense and increase of social stability in forest regions due to creating new working places and providing workers of the forest complex with worthy salary level;

Ecological interest of the state in the forest business is determined by preserving (increasing) recreational, water protective, landscape esthetical and other ecological functions of forests.

Realization of the state interests is based on forest revenues, which have indicated confident growth in recent years (mostly due to forest rates raising), in 2012 the forest revenues constituted 800 million dollars in the economy as a whole and raised by 4.4% compared with the figures of 2011. [3].

Entrepreneurship in forestry realizes its interests in getting revenues and benefits by forest management. Business activity at the forest lots can be carried out both in the form of separate forest management – lumbering, stocking up and collection of non-timber forest resources, stocking up food forest resources and collection of herbs, farming, growing fruit, berry, decorative plants, recreational activity, etc., and complex forest management, combining some different types.

At the same time the forestry entrepreneurship has to overcome significant difficulties, related to peculiarities of manufacturing forest production, in regard of long-term forest growing, influence of nature-climate factors, and economic restrictions, determined by the state monopoly on forest resources, etc. In this connection the size of forest payment arrears grows. Just during the period since 2008 till 2013 the forest payment arrears to the budgetary system of the country have grown 12.5 times and constituted 7.5 billion rubles, and the whole amount of debtors – forest managers in 1.11.2012 was 10706 [4]. To compare – the annual state expenditures on forestry operating, including expenditures on forest administration constitute 30.7 billion rubles.

Thereby it is impossible to form efficient measures of regulative impact directed to resultant growth and development of forestry on the state level without conducting analysis of entrepreneurship state, risk factors disclosure and disproportions of its development.

2. Methodology

Risk accompanies any business activity, but within the forestry sphere risk is the most probable comparing to any other type of activity. It is connected with that fact that entrepreneurial activity experiences both influence external factors and a whole range of internal factors, related to manufacturing and social processes.

In order to detect and analyze risk we used method of expert assessment, based on questioning entrepreneurs specializing on forestry manufacturing. Leaders of forest enterprises of Voronezh oblast were recruited as experts, all in all forest enterprises represented as respondents.

In order to process the survey results and evaluation of entrepreneurial risks within the forestry system two criteria were used:
1. Result (value of consequences) from risk manifesting (scale: from ‘minimal consequences’ to ‘maximal consequences’), and
2. Probability of risk appearance (scale: from ‘manifesting unlikely’ to ‘manifesting constantly’).

It is known that verbally figure scales are used mostly in those cases when evaluates by criterion (e.g. extents of risk) are subjective, based on experience and knowledge of the expert [5]. For evaluating the values of risks, Harrington desirability scale was used, added by verbal description of each interval of the scale.

Within diapason from 0 to 1 the desirability scale divides into five sub-diapasons. Average numerical evaluation by Harrington scale:
\[ LR_{av} = (0.9; 0.71; 0.5; 0.28; 0.1) \]  
(1)

Further particular parameters of comparable systems are distributed in scope, corresponding to qualifying standards, on the gap between effective values of scale of particular indicators. Then indicators corresponding to them are re-counted to marks on desirability scale.

Respectively evaluating such indicator, as level of risk, it is possible to say: ‘critical level of risk’ (numerical evaluation = 0.9) or ‘dangerous level of risk’ (numerical evaluation = 0.71), etc. (table 1)

<table>
<thead>
<tr>
<th>Risk changing interval</th>
<th>Level of risk</th>
<th>Risk description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- LR – 0.80</td>
<td>Critical</td>
<td>Extremely high level of risk. Danger, consequences of risk are catastrophic.</td>
</tr>
<tr>
<td>0.79 – LR – 0.60</td>
<td>Dangerous</td>
<td>High level of risk. Consequences are critical for an entrepreneur.</td>
</tr>
<tr>
<td>0.59 – LR – 0.40</td>
<td>Admissible</td>
<td>Satisfactory level of risk. Consequences of risk are significant for an entrepreneur.</td>
</tr>
<tr>
<td>0.39 – LR – 0.20</td>
<td>Low</td>
<td>Low level of risk. Consequences of risk are slight.</td>
</tr>
<tr>
<td>0.19 – LR – 0.00</td>
<td>Non-significant</td>
<td>Extremely low level of risk, consequences of its manifesting are minimal.</td>
</tr>
</tbody>
</table>

To calculate the integral indicator of risk the following function was used:
\[ Rw = f(Rn, W), \]  
(2)

Where \( Rn \) – indicator of criterial evaluations,
\( W \) – indicator of criteria weights.

Weights of criteria were determined with help of expert evaluation. Sum of weights by all criteria is equal to one. As the number of criteria is not big, to determine the value of weights the method of paired comparison was used, that allowed increasing accuracy of evaluation.

Evaluation of consequences and probability of manifesting of entrepreneurial risk was carried out by next formulas:
\[ Rc_i = \frac{\sum_{j=1}^{N} Rc_j}{N} \]  
(3)

Where \( Rc \) – risk consequences from realization of i-th risk;
\( Rc \)- risk consequences from realization of i-th risk according the j-expert evaluation;
J – expert number (from 1 to N).

\[
R_{w_j} = f \left( \sum_{j=1}^{N} \frac{R_{p_{ij}} \cdot W_{ij}}{N} \right)
\]

(4)

Where \( R_{p_{ij}} \) – evaluation of probability of i-th risk manifesting in opinion of j-th expert;

\( W_{ij} \) – probability of i-th risk manifesting in opinion of j-th expert.

On the basis of studying the factors, determining occurrence of risk situation, we worked out a systematization of both common and specific risks, marking out simple and complex. To the number of complex risks the next groups can be attributed: political, legal, manufacture-economic, financial, natural climatic, infrastructure, personnel risks.

Each complex risk in turn was represented by totality of simple risks (table 2).

<table>
<thead>
<tr>
<th>Complex risks</th>
<th>Simple risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political risks</td>
<td>Risk of production and resources export restriction</td>
</tr>
<tr>
<td></td>
<td>Risk in view of authority’s operations: confiscation of assets, termination of contract, revocation of licenses</td>
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<tr>
<td></td>
<td>Risk of non-payments by state customers, principals</td>
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<tr>
<td></td>
<td>Risk of unfavourable change of tax legislation</td>
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<td></td>
<td>Risk of presence of administrative barriers, frequent control, corruption</td>
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<tr>
<td></td>
<td>Risk of groundless growth of requirements from the side of organs of forestry administration</td>
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<tr>
<td></td>
<td>Risk of occurrence of unstable economic situation (inflation growth)</td>
</tr>
<tr>
<td>Legal risks</td>
<td>Risk of unfavourable change of forest legislation</td>
</tr>
<tr>
<td></td>
<td>Risk of change of forms, ways and methods of SME support</td>
</tr>
<tr>
<td></td>
<td>Risk of absence (refusal) of assistance from authoritative structures on the regional level</td>
</tr>
<tr>
<td></td>
<td>Risk of incompleteness and inadequacy of forest legislation on the regional level</td>
</tr>
<tr>
<td></td>
<td>Risk of reduction (loss) of legislative guarantees to SME</td>
</tr>
<tr>
<td>Manufacture-economic risks</td>
<td>Risk related to production distribution or rendering services</td>
</tr>
<tr>
<td></td>
<td>Risk related to organization of enterprise maintaining with material resources</td>
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<tr>
<td></td>
<td>Risk related to organization of manufacturing process or rendering services</td>
</tr>
<tr>
<td></td>
<td>Risk of technological processes failure</td>
</tr>
<tr>
<td></td>
<td>Risk related to equipment failure, breakage</td>
</tr>
<tr>
<td></td>
<td>Risk related to organization of marketing and advertising of manufactured production or rendered services</td>
</tr>
<tr>
<td>Financial risks</td>
<td>Risk of lack of financial resources (assets in turnover)</td>
</tr>
<tr>
<td></td>
<td>Risk of insufficient financial support (absence of subsidiaries, co-operate financing of forestry works – state-private partnership)</td>
</tr>
<tr>
<td></td>
<td>Risk related to high credit rates and credit inaccessibility</td>
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<tr>
<td></td>
<td>Risk related to growth of rental rates and payments</td>
</tr>
<tr>
<td></td>
<td>Risk related to growth of prices and tariffs for outside organizations services</td>
</tr>
<tr>
<td></td>
<td>Risk related to investments and possibility of their return</td>
</tr>
</tbody>
</table>
Risk related to refusal of legal entities to finance approved works on conservation, protection and reproduction of forests

**Natural climatic risks**
- Risk of forest fires occurrence under the conditions of drought
- Risk of multiplication enthomo- and phyto-pests
- Risk of forest damage by wild animals
- Risk related to unfavourable weather conditions, windfall, underflooding
- Risk related to discrete works in forests

**Infra-structural risks**
- Risk of absence (insufficiency) of forests roads of different categories
- Risk of investing limitation and low attractiveness of forestry
- Risk of underdevelopment of system of state forest inspection
- Risk related to incompleteness of cadastral registration of forest lots
- Risk related to imperfection of engineering and energetic infrastructure

**Personnel risks**
- Risk of lack of qualified staff
- Risk related to non-efficient system of personnel management
- Risk related to flow-out of qualified personnel, outflow of key workers of organization
- Risk related to non-efficient system of labour stimulation
- Risk related to labour organization, including non-negotiated working time

### 3. Results

As a result of methodical approbation within the forestry system it was possible to form profile of risks, which represent dynamic characteristic of attractiveness level, reflecting risk-producing way of carrying out entrepreneurial activity within the forestry system, which is a ranged list of risks, evaluated by the criteria of probability and the value of consequences from their manifesting.

It was discovered that activity of entrepreneurial structures of forestry system is subject to the impact of relatively large number of significant risk factors (fig. 1)

![Fig. 1: Diagram of risks distribution by the level of allowable losses (red – level of risk is allowable, blue – factual level of risk)](image)
As a result we obtained expert evaluations of level of risk, significance (rating) of detected risk factors – risk profile; values of indicators of risk factors state.

It should be mentioned that risk profile is a dynamic characteristic of the level of economic safety of a forest enterprise. At the same time due to regular actualization of obtained profile of entrepreneurial structure, it is possible to judge about the character and tendencies of development of risk situation changes for a particular enterprise and to plan adequate anti-risk measures, based on that.

The survey showed most dangerous risk factors, their profile was formed, analysis of which showed that financial risks belong to the sphere of high evaluation of risk level.

Development of the forerster entrepreneurship is mostly restrained by such types of risk as the following:

- neediness of own financial resources (assets in turnover);
- growth of rental rates and payments;
- flow-out of qualified personnel, outflow of key workers of organization;
- growth of prices and tariffs for outside organizations services;
- underdevelopment of system of state forest inspection;
- imperfect system of forest protection, leading to occurrence of forest fires;
- absence of forms, methods and ways of supporting SME within forestry system;
- imperfect tax legislation, and growing tax burden at small businesses;
- high credit rates;
- incompleteness and inadequacy of forest legislation on the regional level
- imperfection and inadequacy of forest legislation;
- underdevelopment of structure (forests roads);
- imperfection and instability of forest legislation;
- low investing attractiveness of forestry, lack of investments.

At the same time the most dangerous risks for the entrepreneurs are: firstly, risk of lack of own financial resources; secondly, risk related to growth of rental rates and payment; thirdly, risk related to flow-out of qualified personnel, outflow of key workers of organization.

Table 3: Critical entrepreneurial risks within the forestry system

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Evaluation of factor significance (value of consequences)</th>
<th>Evaluation of manifesting frequency (probability)</th>
<th>Total risk evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>risk of lack of own financial resources</td>
<td>0.78</td>
<td>0.85</td>
<td>0.82</td>
</tr>
<tr>
<td>risk related to growth of rental rates and payment</td>
<td>0.96</td>
<td>0.66</td>
<td>0.81</td>
</tr>
<tr>
<td>risk related to flow-out of qualified personnel, outflow of key workers of organization</td>
<td>0.84</td>
<td>0.79</td>
<td>0.81</td>
</tr>
</tbody>
</table>

The first and the third risk factors are internal, the second – external, at that in many respects these external and internal factors are interconnected. High level of risk according to given factors means that, in whole, low level of attractiveness of forestry activity for small businesses, and for activation of the last both
internal managing decisions and dramatic changes of existing policy towards entrepreneurial within forestry system are necessary.

4. Discussions

The economic literature of recent years, devoted to the problems of risks, provides classification of entrepreneurial risks with, marking out four spheres of their appearance: manufacturing, commercial, financial and innovation [6]. At the same time, it seems to be interesting to study the reasons for entrepreneurial risks appearance [7].

The research we conducted allowed us to detect the types of risks, determining development of entrepreneurial activity within forestry sphere at different levels, and to evaluate their priority. Methodical approach using Harrington scale, added by verbal description by each interval, allows not only to define the dominating risks, evaluate the extent of their interference, but to establish skilfully the directions of development of economy of entrepreneurial structures, engaged in forestry sphere.

We are convinced that internal imbalancing of forest relations, including economic interest of the state, entrepreneurs – forest managers, ecologists and population, is expressed in distortion of real forest revenues, inefficient forestry running, deterioration of forest production quality, decrease of investment attractiveness of forest sector, leave of especially valuable forest for lumbering, replacement of forms and methods of lumbering and forest management, decrease of reforestation quality, etc., is a prerequisite for forestry entrepreneurial risks arising [8]. We consider that most essential contradictions within the system of economic interests of forest relations subjects, hindering both development of entrepreneurship and realization of state policy within the forestry system, belong to five sub-systems:

- sub-system ‘state-entrepreneurs’ (contradiction is in maximum of forest revenue – interest of the state and maximum of entrepreneurial revenue – interest of entrepreneur);
- sub-system ‘big entrepreneurial structures – small and medium entrepreneurship’ (getting preferences in forest lots rent by big entrepreneurs and in the absence of interests in their complex use);
- sub-system ‘entrepreneurs – population’ (realization of forest management at leasehold lots of forests by entrepreneurs is a barrier for free access of citizens to forests);
- sub-system ‘state – subjects of SME’ (minimization of financing of forestry works and quality of performed works by entrepreneurs).

We consider that coordination of economic interests within forestry is a condition for decrease of entrepreneurial risks and resultant development of entrepreneurial activity.

5. Conclusion

Thereby, the starting point of balance of interests of small entrepreneurship, state and population must be admission that goals and targets of forestry and forest entrepreneurship in whole are alike: to conserve, to protect, to reproduce forest and use them without destroying and degradation, manufacturing competitive forest production, including deep lumber treatment, that is a unity of economic and forestry efficiency. In the context of discussed above it is needed to be mentioned that denial of predominance of interests of some forestry subjects over others during the process of their meeting is representing as necessary condition of entrepreneurial risks minimization and development of entrepreneurship within forestry system [9].
At the same time economic interest of leaser should be not only to receive revenue in short-term period, but to be directed at preservation and multiplication of forest wealth. In other words, the policy of coordination economic interests within forestry, conducted by the state and the regions, does not lead to sufficient results and demands purposeful consistent perfection.

6. References


