Method and Software of Planning of the Substantial Risks in the Projects of Production of raw Material for Biofuel

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Abstract. The research outlines the unsolved managerial tasks of planning of the substantial risks in the projects of raw material production for biofuel with consideration of the risks, caused by changeable natural-climatic and production conditions of the region. In contrast to the existing methods, the described method expects forecasting of the variable durations of the periods of a life cycle of the projects of raw material production for biofuel. That method also concerns changeable natural-climatic and production conditions of the region of implementation of the project of raw material production for biofuel. The work supplies the developed software, used to plan the substantial risks of the projects of raw material production for biofuel. Use of that software can secure quantitative evaluating of the substantial risks for the conditions of Zabolottsi community in Brody district of Lviv region. It is recommended to create the reserve of cropping area in the volume of 9.0…9.9 hectare in order to secure a minimum substantial risk in the projects of rape production for biofuel under conditions of Zabolottsi community.

Keywords: Project, Planning, Substantial Risks, Biofuel.

1 Introduction

Changeability of the market conditions and crisis manifests, which are particular for agribusiness, argues consistency of the projects implementation. Moreover, the appropriate managerial decisions in the progress of the projects implementation require development and application of the instruments for their managing. Those instruments should consider peculiarities of the domain and variability of the project environment. The variability of the project environment is one of the principal reasons of risk manifestation in the projects. However, there is a growing interest to the approaches in the project environment, which suggest quantitative evaluation and argumentation of the responses to risks, including ones in agrarian production [1-3].

The integrated projects of agrarian production are currently mainstream, including the projects of production of raw material for biofuel [4-6]. Consideration of the risks in the projects of raw material production for biofuel due to their appropriate planning, which is based on evaluation of variable components of the project environment, makes a basis for the adequate managerial decision-making, as well as reduction of losses because of agreement of their configuration with the substantial risks. Nevertheless, completion of the process of planning of the substantial risks in the projects of production of raw material for biofuel requires consideration of their peculiarities, as well as development of the method and software for fulfillment of the mentioned managerial process.

2 Analysis of Literary Data and Problem Statement

Development of the methods and models of project planning with risk consideration in different domains is studied in numerous scientific works [7-9]. The scientists use different software for planning of the projects [10-12], arguing their importance for the theory of project management. However, those works do not consider changeable natural-climatic, thematic and organizational-scale factors of risks of the projects of raw material production for biofuel. Hence, it prevents the appropriate planning of the need for natural resources, as well as evaluating of their risks and substantiating of the resource reserves as a response to the risk.

The work [13-15] notes that planning of the resource consumption for implementation of the projects should be done with consideration of their variable components, causing the risk of value. There is also a known method, developed in the work [16-18], which substantiates the need for resources for production projects. It eliminates some drawbacks of other methods. However, use of the method for planning of the projects of raw material production for biofuel with consideration of the risk is impossible because it expects calculating by the average figures of the impact of natural-climatic, topic and organizational-scale factors on the need for raw material and field area for its growing. The presented arguments indicate the need to develop a method and software for planning of the projects of production of raw material for biofuel with consideration of the substantial risks.

The aim of the work is to develop a method and software for planning of the substantial risks in the projects of production of raw material for biofuel with consideration of changeable natural-climatic conditions of the region.

To reach the set goal, it is necessary to perform the following tasks: to argue the method of planning of the substantial risks in the projects of raw material production for biofuel; to develop software and make quantitative evaluation of the substantial risk of the projects of production of raw material for biofuel in the set project environment.

3 Method of Planning of the Substantial Risks in the Projects of Production of raw Material for Biofuel

The proposed method of substantial risk planning in the projects of production of raw material for biofuel with consideration of the substantial risks of their components in the project environment expects performance of the following stages (Fig. 1).

Stage 1*. Forecasting of variable durations of the periods of a life cycle of the project of raw material production for biofuel*

Stage 2. *Determination of the need for variable volumes of raw material production for biofuel with risk consideration*

Stage 3. *Determination of the need for field area for growing of energy crops, used as raw material, with consideration of risks*

Stage 4. *Argumentation of the response to substantial risks of the project of raw material production for biofuel*

Fig. 1. Stages of the method of planning of the substantial risks in the projects of production of raw material for biofuel

Stage 1. Forecasting of variable durations of the periods of a life cycle of the project of raw material production for biofuel starts with the analysis of possible scenarios of its implementation. The fundamental for possible scenarios of implementation of the project of raw material production for biofuel is supplied by the kind of agricultural crops and technology of its growing. There are two kinds of agricultural crops, i.e. annual (Fig. 3) and perennial. Each of the mentioned variants has its basic events, causing the need and duration of performance of the blocks of works in the phase of implementation of the project of raw material production for biofuel.

Basing on the graphical interpretation of durations of the periods of a life cycle of the project of raw material production for biofuel (Fig. 2), one can suggest that, in the projects with annual agricultural crops, there are three basic events with the probable time of their occurrence. They include events of vegetation restart in the spring period ($E_{rest\ veg}$), appearance of harmful objects ($E_{app\ harm}$) and ripening ($E_{cr\ rip}$) of agricultural crops.

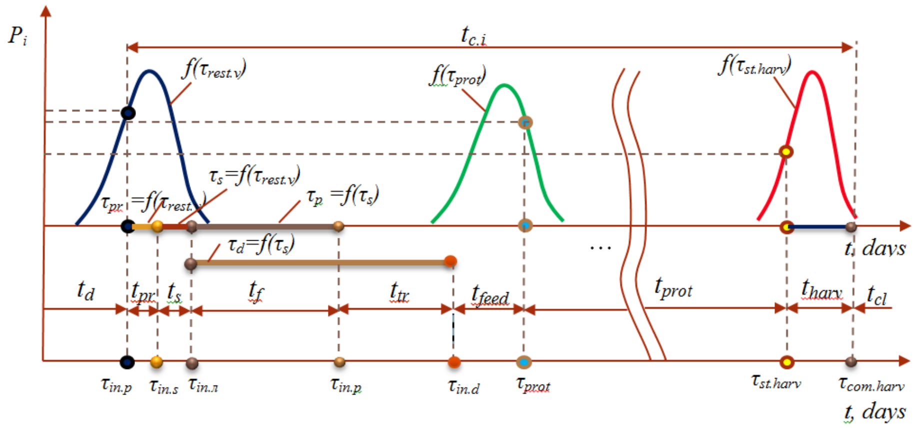

Fig. 2. Graphical interpretation of durations of the periods of a life cycle of the project of raw material production for biofuel; t_{del}, t_{imp}, t_{com} – are durations of the phase of development, implementation, and completion of the project respectively; t_{pr}, t_s, t_f – are durations of the blocks of works concerning preparation, sowing and stem formation respectively; t_{fert}, t_{prot}, t_{harv} – are durations of the blocks of works concerning fertilization, protection, and harvesting of agricultural crops respectively; $\tau_{st\ pr}$, $\tau_{com\ pr}$ – is the time of start and completion of the preparatory works respectively; $\tau_{com.s}$, $\tau_{stop.veg}$ – is the time of completion of sowing works and cease of vegetation of agricultural crops respectively; $\tau_{rest\ veg}$, $\tau_{st\ tr}$ – is the time of restart of vegetation in the spring period and treatment of agricultural crops respectively; $\tau_{st\ prot}$ – is the time of start of protection from harmful effect of raw materials objects; $\tau_{st\ harv}$, $\tau_{com\ harv}$ – is the time of start and completion of harvesting of agricultural crops respectively

However, the basic event of vegetation restart ($E_{rest\ veg}$) in the spring period along with the variable natural-climatic conditions (precipitation, soil humidity, air temperature, etc.) causes the following derivative events, i.e. start of sowing ($E_{st\ sow}$), formation ($E_{st\ form}$) and fertilization ($E_{st\ fert}$) of agricultural crops. The basic events of harmful objects appearance ($E_{app\ harm}$) and ripening ($E_{cr\ rip}$) of agricultural crops force the derivative events, such as the start of protection from harmful objects ($E_{st\ prot}$) and harvesting ($E_{st\ harv}$) of agricultural crops respectively.

Referring to the figures of duration of some stages of implementation of the project of raw material production for biofuel, it is possible to determine duration of the phase of its implementation (t_{imp}):

$$t_{c.im} = t_{pr} + t_s + t_f + t_{tr} + t_{feed} + t_{plot} + t_{harv}\,. \tag{1}$$

The forecasted duration of a life cycle of the project of production of raw material for biofuel (t_l) is measured by the formula:

$$t_l = t_{in} + t_{dev} + t_{imp} + t_{com}\,, \tag{2}$$

where t_i, t_{dev}, t_{imp}, t_{com} – is the duration of the phases of initiation, development, implementation, and completion of the project of production of raw material for biofuel, days.

Stage 2. The state expects assessment of the need for variable volumes of production of raw material for biofuel with consideration of the risks of natural-climatic conditions (variable durations of the period of growing of raw material crops, which cause variable volume of some kinds of raw material) and risks of organizational-scale components of the project environment, which are depicted by a variable need for biofuel during the period, for which the need is argued.

The annual need Q^i_{kjp} for raw materials, made of the k agricultural crops, which are grown on the j field with p yield capacity, is determined by the formula:

$$Q^i_{kjp} = M\left[Q^i_{kp}\right] \cdot t_{bi} \cdot k_{kjp} \,, \tag{3}$$

where $M\left[Q^i_{kp}\right]$ – is the expected value of the forecasted daily need for raw materials, made of the k agricultural crops, which are grown on the j field with p yield capacity in the i calendar year, hundredweight; t_{bi} – is the duration of b period of biofuel production, which is based on use of the k kind of raw materials, days; k_{kjp} – is the factor of the respective need for raw materials, made of the k agricultural crops, which are grown on the j field with p yield capacity.

The expected value $M\left[Q^i_{kp}\right]$ of the forecasted daily need for raw materials, made of the k agricultural crops, which are grown on the j field with p yield capacity in the i calendar year, is calculated by their energy value on the base of the dependences, argued in the work [19-20].

The total annual need ($\bar{Q}^i_k$) for raw materials, made of the k agricultural crops, is calculated by the formula:

$$\bar{Q}^i_k = \left(\sum_{j=1}^{n} Q^i_{kj} \cdot n_j\right) \cdot k_{loss\ st} \cdot k_{loss\ tr} \cdot k_{loss\ proc} \quad , \tag{4}$$

where n_j – is the number of biofuel consumers of the j category by the volume of consumption, units; $k_{loss\ st}$, $k_{loss\ tr}$, $k_{loss\ proc}$ – are the coefficients of loss of raw materials, made of the k kinds of agricultural crops, during its storage, transportation and processing; *n* – is the number of the categories of biofuel consumers by the volume of consumption, units.

Stage 3. Basing on the obtained figures of the total annual need ($\bar{Q}^i_k$) for raw materials, made of the k agricultural crops in the i calendar year, it is possible to measure the forecasted area of fields ($\bar{S}^i_{kp}$), used for their growing:

$$\bar{S}^i_{kp} = \frac{\bar{Q}^i_{kp}}{M\left[Y_{ki}\right] \cdot K_k} \,, \tag{5}$$

where $M[Y_{ki}]$ – is the expected value of the forecasted yield capacity of the *k* agricultural crops in the i calendar year, hwt/ha; K_k – is the multiplicity of yield harvesting of the *k* agricultural crop, units.

The expected yield Y_{ki} of the k agricultural crops, which are the raw materials for biofuel, is characterized by variability. To determine its quantitative characteristics, the statistical data of their producers of the studied administrative territory is used. Referring to the used methods of mathematical statistics and statistical data on yield Y_{ki} of the k agricultural crops, which are used as raw materials for biofuel in the i calendar year, it is possible to get a set $\{Y_{ki}\}$ of them. It is a fundamental for substantiation of the density $f(Y_k)$ of its distribution law and specification of its main characteristics:

expected value

$$M(Y_k) = \sum_{i=1}^{j} Y_{ki} \cdot P_i \ , \tag{6}$$

where Y_{ki} – is the yield capacity of the *k* agricultural crops, used as raw material for biofuel in the i calendar year, hwt/ha;

variance

$$D(Y_k) = \sum_{i=1}^{j} (Y_{ki} - Y_{kc})^2 \cdot P_i \ , \tag{7}$$

where Y_{kcr} – is the yield Y_{ki} of the k agricultural crops, used as raw material for biofuel in the j category of the i calendar year, hwt/ha;

standard error

$$\sigma(Y_k) = \sqrt{D(Y_k)} \ , \tag{8}$$

variation factor

$$\nu(Y_k) = \frac{\sigma(Y_k)}{M(Y_k)} \ . \tag{9}$$

Referring to the forecasted annual need $\left(\bar{Q}_k^i\right)$ for raw materials, made of the k agricultural crop in the i calendar year, and forecasted field area $\left(\bar{S}_{kp}^i\right)$, used for the crop growing, one can perform a set of calculations for the i calendar year with a change of durations $\left(t_{bi}\right)$ of the periods of a life cycle of biofuel production. The obtained set of figures of the annual need $\left(\bar{Q}_k^i\right)$ for raw materials, made of the k agricultural crops in the i calendar year, and the forecasted area of field $\left(\bar{S}_{kp}^i\right)$, used for its growing, supply a basis for argumentation of their distribution and specification of the principal characteristics by the formulas (6-9), characterizing the substantial risks of the projects of production of raw material for biofuel.

Stage 4. The principal responses to the substantial risks of the projects of production of raw material for biofuel include creation of the reserves of raw materials, made of the *k* agricultural crop, or purchase of the raw materials at the market. To substantiate responses to the substantial risks of the projects of raw material production for biofuel, it is primarily needed to set limits of the change of needs for the annual reserve $R\left(\bar{Q}_k^i\right)$ of raw materials, made of the *k* agricultural crops. To determine a maximum relative value of the annual reserve $R\left(\bar{Q}_k^i\right)$ of raw materials, made of the *k* agricultural crops, the following formula can be used:

$$R\left(\bar{Q}_k^i\right) = \frac{\bar{Q}_k^{max} - M\left[\bar{Q}_k\right]}{M\left[\bar{Q}_k\right]} \cdot 100 \ , \tag{10}$$

where $\bar{Q}_k^{max}$ – is the maximum value of the annual need for raw materials, made of the k agricultural crops, hundredweight; $M\left[\bar{Q}_k\right]$ – is the expected value of the annual need for raw materials, made of the k agricultural crops, hundredweight.

Having determined the limits of a possible change of the relative value of the reserve $R\left(\bar{Q}_k^i\right)$ of raw materials, made of the *k* agricultural crops, one can measure changes of the expenditures for creation of the reserve $B_{R\left(\bar{Q}_k^i\right)}$ and costs $C_{R\left(\bar{Q}_k^i\right)}$ of buying of the required materials at the market within the set range (Fig. 3).

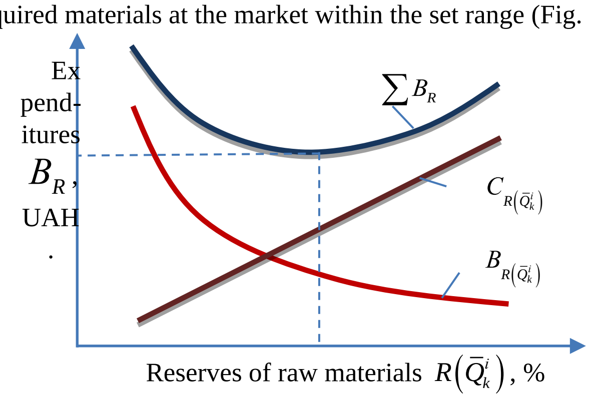

Fig. 3. Determination of reasonable responses to the substantial risks of the projects of production of raw material for biofuel: $B_{R\left(\bar{Q}_k^i\right)}$, $C_{R\left(\bar{Q}_k^i\right)}$ – are the expenditures for creation of the reserve, and costs for buying of the deficient resource at the market respectively; $\sum B_R$ – is the total costs for creation of the reserve of raw materials for biofuel production

Reasonable responses to the substantial risks of the projects of raw material production for biofuel include those, which secure minimum total expenditures for creation of the reserve of raw materials, i.e. $\sum B_R \rightarrow min$.

The expected yield capacity Y_{ki} of the *k* kinds of agricultural crops varies on separate fields and in i calendar years. Thus, the reserve area for their growing should be calculated with consideration of its standard error $\sigma\left(Y_k\right)$. However, the average costs (expected values of the total costs) $M\left(B_R\right)$ for determination of the reserve of field area $R\left(S_k\right)$ for some crops under the set figure of that reserve can be found by the following formula:

$$M\left(B_R\right)=0,5\cdot B_{R(S_k)}\cdot R\left(S_k\right)+B_{R(S_k)}\int_0^{R(S_k)}\left(R\left(S_k\right)-R\left(S_k\right)_n\right)\cdot f\left(R\left(S_k\right)_n\right)\cdot dR\left(S_k\right)_n+ \\ +C_{R(S_k)}\int_{R(S_k)}^{\infty}\left(R\left(S_k\right)_n-R\left(S_k\right)\right)\cdot f\left(R\left(S_k\right)_n\right)\cdot dR\left(S_k\right)_n \qquad (11)$$

where $M\left(B_R\right)$ – is the expected value of the total costs for creation of the reserve area for growing of crops, used as raw material, UAH; $B_{R(S_k)}, C_{R(S_k)}$ – are the costs for creation of the reserve of field area and losses because of their lack respectively, UAH; $R(S_k), R(S_k)_n$ – are the set figures of the reserve of the area under the crops, used as raw material, and the needed reserve of the area respectively, %; $f\left(R(S_k)_n\right)$ – is the density of distribution of the probable need for the reserve of area, intended for growing of crops, used as raw material.

The first additive component of the formula (11) confirms that under no need for the reserve of the area, used for growing of raw material crops (the probability accounts for 0.5), biofuel producers will not experience losses, which account for $B_{R(S_k)}$ multiplied by the value of that reserve. In case the current value of the reserve $R(S_k)_n$ does not exceed the figure $R(S_k)$, the expenditures are calculated by the second additive component of the formula (11). If the need for the field reserve $R(S_k)_n$ for growing of crops, used as raw material, exceeds the figure $R(S_k)$, the expenditures of biofuel producers will be determined by the third component of the formula (11).

4 Results of Development and use of the Software for Planning of the Substantial Risks in the Projects of Production of Raw Material for Biofuel

There is the appropriately developed software, used to accelerate and improve planning of the substantial risks in the projects of production of raw material for biofuel. It is based on the above-presented method, which expects consideration of natural-climatic and organizational-scale risks of the projects of production of raw material for biofuel. The software for planning of the substantial risks in the projects of raw material production for biofuel is made in the Python 3.6 language. A work window of the program is presented by the Fig. 4.

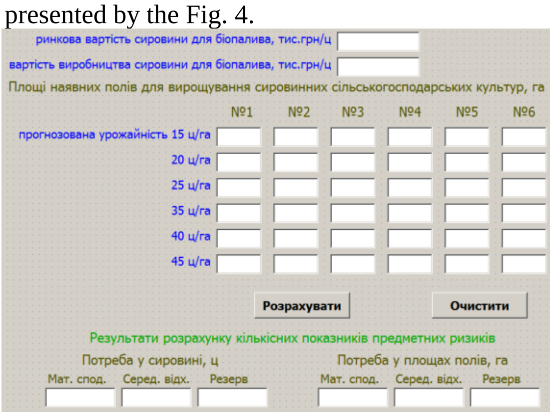

Fig. 4. A work window of the software for planning of the substantial risks in the projects of production of raw material for biofuel.

Planning of the substantial risks in the projects of production of raw material for biofuel was performed concerning the conditions of Brody district of Lviv region. Basing on the analysis of the reporting documents of Brody district state administration, there is an argued need for biofuel in Zabolottsi community.

Using the developed software, which is based on the argued method of planning of the substantial risks in the projects of production of raw material for biofuel, the authors of the work have done quantitative assessment of the substantial risks and responses to them.

The response to the substantial risks of the projects of raw material production for biofuel is manifested by creation of the reserve of raw materials, made of rape. It is accepted that the reserve can be formed by purchasing of rape for biofuel at the market and its production under conditions of Zabolottsi community. Referring to the analysis of statistical data concerning market prices (as of November 10, 2019) of rape on the territory of Lviv region, the research determines their average figures. It is stated that the market price of rape was 1005 UAH/hwt, and the expected costs of production on the territory of Zabolottsi community accounted for 750 UAH/hwt.

Basing on the used formula (10) and obtained data concerning expected value of the annual need for rape, used as raw material for biofuel, there is a measured maximum relative value of its annual reserve $R\left(\bar{Q}_k^i\right)$. It supplied the opportunity to get the limits of a possible change of the relative value of the reserve $R\left(\bar{Q}_k^i\right)$ of raw material for biofuel under the change of its need (Fig. 5).

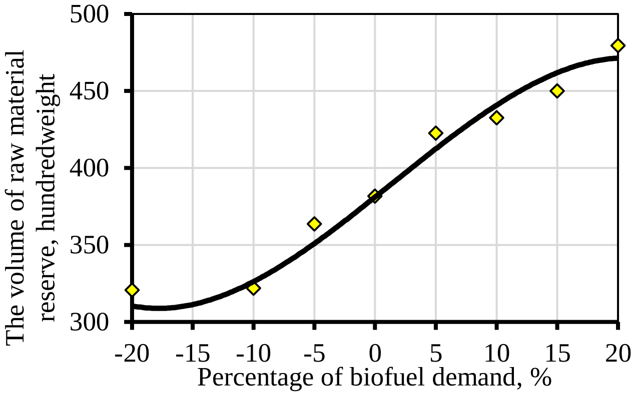

Fig. 5. Dependence of the volume of rape reserve for production of biofuel on the change of need for it

The obtained dependence (Fig. 5) confirms that the volume of reserve $R\left(\bar{Q}_k^i\right)$ of rape, used as raw material, is proportionally changed under a change of the need for biofuel Z_n, that is a polynomial dependence of the third order. They are described by the following equation:

$$\left(\bar{Q}_k^i\right) = -0,0057\ Z_n^3 + 0,0247\ Z_n^2 + 6,296\ Z_n + 381,\ r = 0.97,\ r = 0.97, \qquad (12)$$

The obtained dependence (Fig. 5) is featured by the correlation factor 0.9 that substantiates a strong correlation relation between the volume of reserve $R\left(\bar{Q}_k^i\right)$ of rape, used as raw material for biofuel, and a change of the need for biofuel Z_n.

Having got results of the forecast of the need for rape, used as raw material for biofuel, as well as its specific market price and specific price of production under the set conditions, one can calculate costs of creation of the reserve $B_{R\left(\bar{Q}_k^i\right)}$ and costs $C_{R\left(\bar{Q}_k^i\right)}$ of buying of the needed amount at the market. It enabled development of a dependence of the noted expenditures on the percentage of the created reserve (Fig. 6).

The obtained dependence (Fig. 6) demonstrates that costs of creation of the reserve of raw materials for biofuel, produced of rape, depend both on the source of their reserve (buying at the market or producing), and on the share of the reserve substitution. It is determined that the maximum volume of the reserve of raw materials for biofuel, made of rape, should constitute 8.5%

The least expenditures for creation of the reserve of raw materials for biofuel production are observed in the variant, when the total volume of the reserve is produced on the territory of a separate community. It provides the opportunity to eliminate the impact of the substantial risks, caused by lack of raw materials for biofuel production, on the risks of the projects of biofuel production. Thus, reasonable responses to the substantial risks of the projects of production of raw material for biofuel include production of the argued volume of its reserve on the territory of the community, securing the minimum total costs for its creation.

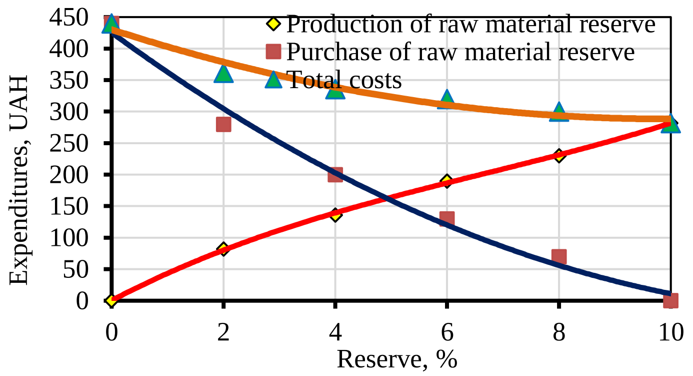

Fig. 6. Dependence of the costs of creation of the reserve of raw materials for biofuel, produced of rape, on the share of its substitution

The forecasted yield Y_{ki} of rape, which is planned to be grown on the community territory, is variable both on separate fields and in the i calendar years. According to the statistical data, the set characteristics of distribution of the yield Y_{ki} of rape is set for the conditions of Lviv region (Table 1).

The obtained statistical data on the characteristics of distribution of rape yield Y_{ki} considering the conditions of Lviv region create a basis for measuring of the reserve area for its growing.

Table 1. Characteristics of the distribution of rape yield Y_{ki} considering the conditions of Lviv region

Kind of a crop, used as raw material	Statistical characteristics of distributions, hwt/ha			
	$M(y_{ki})$	$\sigma(y_{ki})$	$y_{ki\,min}$	$y_{ki\,max}$
Rape	45	6	39	51

Basing on the developed software for planning of the substantial risks in the projects of production of raw material for biofuel (Fig. 5) and obtained data concerning characteristics of the distributions of rape yield Y_{ki} (Table 1), the research supplies the set limits of a possible change of the forecasted volume of the field area reserve $R\left(\bar{S}_k^i\right)$ for growing of rape, caused by a change of the demand for biofuel concerning the conditions of Zabolottsi community of Brody district in Lviv region (Fig. 7).

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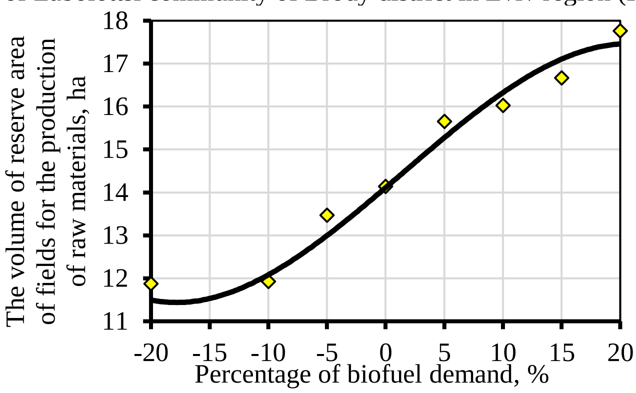

Fig. 7. Dependence of the volume of the field area reserve $R\left(\bar{S}_k^i\right)$ for growing of rape on a change of the demand for biofuel

The obtained dependence (Fig. 7) argues that the forecasted volume of the reserve of field area $R\left(\bar{S}_k^i\right)$ for rape growing with the proportional change of the need for biofuel Z_n is changed according to the polynomial dependences of the third order. They are described by the corresponding equation:

$$R\left(\bar{S}_k^i\right) = -0{,}0002Z_n^3+0{,}0009Z_n^2+0{,}233\,Z_n+14{,}111,\ r = 0.97, \qquad (13)$$

The obtained dependence (13) is characterized by the correlation factor within 0.94 that confirms a strong correlation relation between the volume of the field area $R\left(\bar{S}_k^i\right)$ for growing of rape and the demand for biofuel Z_n.

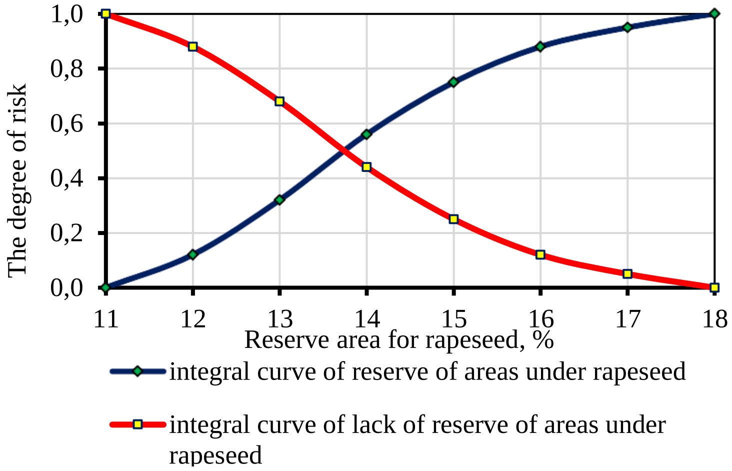

Fig. 8. Dependence of the degree of substantial risks in the projects of production of raw material for biofuel on the reserve of field area for growing of rape, used as raw material

Having got the results of forecasting of the volume of the field area reserve $R\left(\bar{S}_k^i\right)$ for growing of rape, used as raw material (Fig. 8), characteristics of the distribution of its yield Y_{ki} (Table 2), costs of production of raw material for biofuel, as well as using the formula (11), the authors of the article have calculated the average costs (expected value of the total costs) $M\left(B_R\right)$ for creation of the reserve of field area for rape growing.

The completed calculations were used for development of the software for planning of the substantial risks in the projects of production of raw material for biofuel (Fig. 5). It secured the opportunity to assess the degree of a substantial risk in the projects of production of raw material for biofuel (Table 2).

Table 2. Results of assessment of the degree of a substantial risk in the projects of production of raw material for biofuel

Kind of the crop, used as raw material	Limits of a change of the volume of field reserve for growing of crops, used as raw material, ha				
	Critical risk 0.81…1.0	High risk 0.61…0.8	Medium risk 0.41…0.6	Permissible risk 0.21…0.4	Minimum risk 0…0.2
Rape	8.7…10.3	10.31…11.2	11.3…12.1	12.2…13.3	13.4…16,5

According to the data of the Table 2, one can affirm that a minimum substantial risk in the projects of raw material production for biofuel, which expects rape growing under conditions of Zabolottsi community, requires creating of the reserve of field area in the volume – 9.0…9.9 ha.

The obtained figures concerning limits of the change of the volume of the field area reserve for growing of rape, used as raw material, create a basis for consideration of the substantial risks while making the plan of the need for resources to implement the projects of production of raw material for biofuel.

5 Conclusions

The proposed method of planning of the substantial risks in the projects of production of raw material for biofuel suggests a systemized performance of the four stages, which, contrary to the existing methods, expect forecasting of variable durations of the periods of a life cycle of the projects of production of raw material for biofuel, along with consideration of natural-climatic conditions of the region, which secures appropriate planning of the substantial risks, as well as qualitative assessment and argumentation of the reserve of natural resources as a response to those risks.

Application of the developed software for planning of the substantial risks of the projects of production of raw material for biofuel has provided the opportunity to make quantitative evaluation of the conditions of Zabolottsi community in Brody district of Lviv region. To secure the minimum substantial risk in the projects of production of raw material for biofuel, which suggests growing of rape under conditions of Zabolottsi community, it is necessary to create a reserve of field area in the volume – 9.0…9.9 ha. The obtained figures concerning limits of the change of the volume of field area reserve for growing of rape, used as raw material, make a fundamental for consideration of the substantial risks while planning the need for resources to implement the projects of production of raw material for biofuel.

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