APPLICATION OF PEST – SWOT METHOD IN STRATEGIC PLANNING OF AGRICULTURE

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ABSTRACT. *The development of agricultural sector is influenced by a number of internal and external factors. The internal factors in this case mean the factors, which are developed inside the country as the result of a purposeful activity or, on the contrary, inactivity of the government. After accession to the European Union, economy of Latvia is influenced by economic and social policy of the European Union as well as external factors influencing the economic development of EU to a great extent. The totality of these factors is forming the group of external factors. This paper only outlines the most significant factors influencing the sector of agriculture and their possible impact on the development of the explored object. It is very important to discover these factors and evaluate them. Commonly in these cases SWOT method or PEST method is used. The paper demonstrates a possibility to use a new approach for identification and evaluation of external and internal factors – PEST – SWOT and SWOT – PEST methods.*

Keywords *agricultural strategy, SWOT analyses, PEST analyses*

Introduction

Rapidly changing conditions of the internal and external environment increase a significance of a strategic planning in agricultural production. After accession of the Republic of Latvia to the European Union, farmers had to face new challenges. They are linked to the EU Common Agricultural Policy (CAP – on the one side and liberalization of EU policy in respect of imports of agricultural goods, on the other side. Already in the nearest future our agricultural producers and food establishments will have to cope with an increasing presence of foreign competitors on the local market. EU sugar reform and a threatening stoppage of Latvia's sugar factories is a current proof of the measures taken within the EU Common Agricultural Policy. Producers of other traditional agricultural products can also face a similar situation if no proper measures are taken within the national agricultural policy with a view to improvement of the competitiveness (EU CAP…2005).

A target of a strategic development of any economic process or an undeclared, implied target refers to maintenance or improvement of the competitiveness. This fully refers to agricultural production therefore the strategic development of the sector is tightly linked to the competitiveness issues. Usually economy scientists pay the most of their attention to classical external factors – the monetary, fiscal and competition policies as well as the social and environmental protection policies (Andriuscenko, 2004). As a result of such an approach some very essential political, economic, social or scientific factors might be missed out. Upon working out a comprehensive strategy of economic systems, first of all a precise assessment of the situation is needed – strong and weak points, options and threats in the context of political, economic, social, technological and scientific development factors that are influencing the functioning of the explored system.

The strategic development of complicated economic systems is usually linked to a strengthening of natural, comparative and acquired options, their further development and lessening of the influence of weak points. In order to get a picture of options and weak points of the competitiveness of a respective system, usually certain methods are applied. The most popular are as follows:

- SWOT method – by which weak and strong points as well as the development options and threats of the explored object are identified (Praude, 2001);
- PEST or STEP method – is applied to identify and assess political, economic, social, technological and scientific factors, which influence the explored object (Dagmar, 2006);
- PESTLE method. Basically it is PEST method supplemented by legal and environmental factors (What is PEST…,2006);
- PESTKED method basically is PEST method supplemented by cultural, ethnographical and demographical factors (What is PEST…,2006);
- PEST – SWOT method. Application of this method consists of 2 steps. First of all the political, economic, social, technological and scientific factors, influencing the development of the explored macroeconomic process, are identified. In the second step, weak and strong points of the indentifiable factors are assessed as well as the development options and threats. It has not been used in Latvia until present and it was applied for the first time for drawing up of the strategic development of agricultural sector and science.
- SWOT – PEST method in point of fact is similar to PEST – SWOT method. Application peculiarity of this method lies in the fact that strong and weak points of the explored macroeconomic process are assessed in relation to major political, economic, social, technological and scientific factors influencing the development of the object. A similar approach is

maintained upon assessing the development options and threats of the explored object.

The paper first of all addresses application of SWOT method to elaboration of the strategic development of agricultural sector. To ensure a successful result, upon assessing strong and weak points as well as options and threats of the agricultural sector, it is primarily necessary to identify the internal and external factors influencing the development of the sector.

Results and discussion

Internal and external factors influencing the development of agricultural sector

By the internal factors of agricultural development in this case are understood the factors, which directly influence the development of agriculture and the population engaged in agriculture. Their formation involves the governmental institutions on the one side and public organizations of agricultural establishments and agricultural holdings involved in agricultural production, on the other side. Land, its suitability for plant production, agri-climatic conditions and vegetation period are merged into one factor and this case it is considered as the internal factor of the sectoral development.

The internal factors influencing the development of agricultural sector are shown a graphical model in figure1.

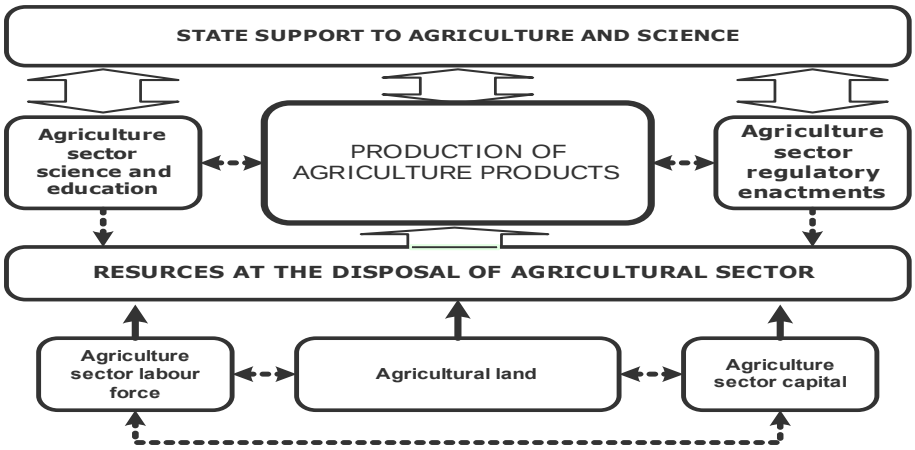

Figure 1. The model of interrelation between the factors influencing agricultural and scientific development

As shown in the model in figure 1, the factors influencing agricultural development are grouped as follows:

1) Resources at the disposal of agricultural sector – the most significant internal factors influencing the sectoral development with the following structure:
   - labour employed in agriculture, its quantitative and qualitative composition;
   - agricultural land area for cultivation of various crops;
   - the capital used in agricultural production – tractors, lorries, agricultural machinery, technologies and other capital assets.

The strategic development of agricultural sector takes account of the fact that utilization of resources in agriculture must always compete with other sectors of the national economy. This means that more qualitative and thus more expensive resources will be channeled to the sectors producing goods with a higher added value.

2) Science and education in the sector of agriculture.

Scientific organizations in the area of plant production, animal production and agricultural economy constitute the basic elements of agricultural scientific system. In order to establish a competitive system of agricultural science, it must cover not only such sectors of science, which explore different aspects of agricultural production but also such sciences which explore various technical and biotechnological aspects of agricultural production as well as to develop novel foods and non-food products in production of which agricultural products could be used.

3) Regulatory enactments governing agricultural production and utilization of agricultural resources have a direct and indirect impact on the competitiveness of agricultural products and the development of agriculture on the whole.

On the stage of strategic development the population employed in the sector of agriculture must take account of the legislation dictated by the Common Agricultural Policy the bulk of which has been prepared taking into consideration production of such agricultural goods, which are traditional to interests of farmers in Germany, France and other rich EU Member States. Following requirements laid down by EU legislation, Latvian agricultural producers are compelled to address new challenges, which are connected with reforms in production of traditional agricultural products.

4) The State support to agricultural sector and science is considered as the most significant factor in the strategic development of the sector.

Thanks to EU co-financing, Latvia's farmers are receiving a considerable financial support, which should be more efficiently utilized for improvement of competitiveness of the sector and development of rural environment

When identifying the basic factors influencing the development agricultural sector, the interrelation and interconnectedness of these factors must be taken into consideration. As shown in figure1, a qualitative and quantitative composition of resources being at the disposal of the agricultural sector and their utilization is influenced by the national legislation, the development of science and technologies as well as by interest and ability of agricultural establishments in implementation of scientific research results and state-of-art technologies, taking into account the legislation influencing the development of the sector. Taking into account a considerable amount of the State support and the legislation regulating agricultural production, the State institutions are able within certain limits to influence the amount and structure of agricultural output.

Upon assessing the resources involved in agricultural production, conformity of the amount and structure of the resources to technologies used in agricultural production must be taken into consideration. The figure 1 shows the interrelation of resources. This ensures the replaceability within certain limits to achieve an optimum level needed to reach a maximum profit, ensuring an efficient utilization of the resources at the disposal of an agricultural holding.

It is important to note that the internal factors, influencing the development of agricultural sector, are constantly developing, the force of their impact and direction are changing, taking into account the impact of an "invisible hand" of the market and the national economic policy. It must noted, that producers of traditional agricultural products will have to more and more face the global competition forces. Therefore upon developing the agricultural policy, in assessment of factors influencing the sectoral development and in forecasts of the development it is important to take account of the influence exerted on the development of the sector by more significant internal factors. If a quantitative and qualitative character of the internal developmental factors can be influenced by the State policy and public organizations of agricultural producers then abilities of external factors to exert impact on the side of Latvia's government and other subjects of economy are limited.

External factors influencing the development of agricultural sector

The external factors similar to the internal factors are forming a uniform system, which purposefully influences the amount and quality of agricultural production. In individual cases it is difficult to determine a target of this system if targets of only individual elements are known. Therefore while identifying and assessing the external factors influencing the development of agricultural sector the systemic and logical methods must be applied linked to the method of historical approach.

The external factors influencing the development of agricultural sector are divided into two big groups:

- external factors determined by the State and those developed by the local market forces;
- global factors formed by the policies pursued by unions of States and individual States as well as factors created by the global economy.

External factors influencing the development of agricultural sector are shown in the graphical model given in figure 2.

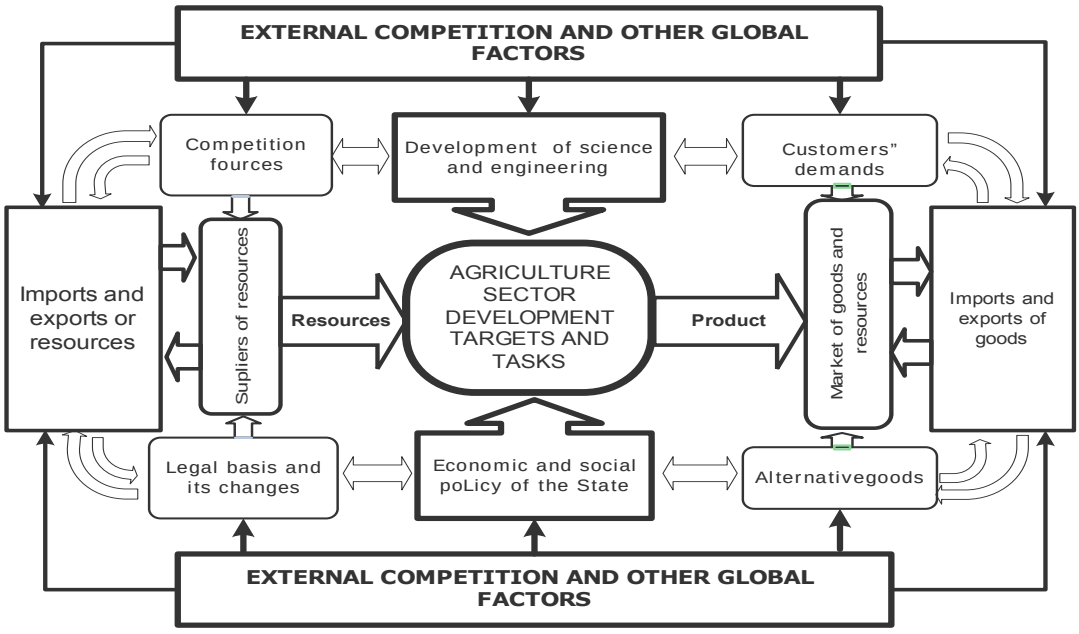

Figure 2. Functional model of the external factors influencing the development of agricultural sector and science

The most significant external factors determined by the State and developed by the local market forces are subdivided as follows:

1) sub-group of economic factors:
   - fiscal and monetary policy of the State;
   - employment policy of the State;
   - factors of local market forces;
   - competition policy of the State;
   - production diversification policy of the State;
   - price boost restricting policy of the States;
   - foreign investments policy of the State;
   - the State policy of the development of small and medium establishments in rural areas;
   - the external economic policy of the State and other factors.
2) sub-group of social factors:
   - development of social infrastructure in rural areas;
   - social employment policy in rural areas;
   - population increasing policy of the State;
   - the State support policy for rural households with children nationwide and in rural areas;
   - he State employment policy nationwide and in rural areas;
   - the State health protection policy in rural environment and other factors.
3) sub-group of scientific and technological factors:
   - the State policy promoting scientific development;
   - external factors facilitating the development of agricultural and food sciences;
   - factors promoting the development of innovative products;
   - development strategy for the Latvian Agricultural University;
   - utilization efficiency of resources at the disposal of scientific organizations and other factors.
4) sub-group of environmental protection factors:
   - the State policy of environmental protection and environmental pollution reduction measures;
   - regulation of utilization of hazardous substances in agricultural production;
   - food safety and wholesomeness requirements laid down by the State and other factors.

As shown in figure 2, agricultural and scientific development targets are closely linked to a competitive production of food and non-food goods, utilizing raw materials produced by agricultural sector. This provides an opportunity for goods produced in Latvia to freely compete with alternative goods on the local market and with imported goods.

After accession to EU, the external factors influence the development of Latvia's agriculture to a greater extent than the internal factors. Currently, EU is determining conformity issues of the major part of agricultural products and regulating the intensity of the State support for the development of agriculture as well as many other developmental issues of the sector within the Common Agricultural Policy, which basically corresponds to the development interests of Germany, France and other bigger and richer EU Member States.

The development of agriculture and science as well as of rural environment is and will be influenced until 2010 by the following external global factors:

- EU external economic policy;
- EU agricultural and rural development policy;
- EU financial support for the development of agricultural sector and rural environment;
- pressure of the global competition on Latvia's agricultural producers;
- results of negotiations between EU and other OECD States on reduction of trade barriers with less developed States;
- global pollution of the environment and additional measures for reduction of pollution on all the stages of production, processing and consumption of agricultural products;
- EU monetary policy and ratio of EU currencies against other economically strongest States economic systems;
- spreading of animal diseases in different States of the world;
- military conflicts and natural calamities in different regions of the world and other factors.

The identified internal and external factors influencing the development of agricultural sector provide a possibility to evaluate strong and weak points of these factors as well as the development options and threats in a certain period of time by applying a well-known SWOT method.

Application of SWOT method to evaluation of the development options of agricultural sector.

A number of foreign and Latvian economic scientists consider that the method of SWOT analysis is applicable on a microeconomic level in order to investigate strong and weak points of the competitiveness of an establishment or economic process as well as the development options and threats (Praude…, 2001). However this method is applicable with good results also to functional evaluation of different macroeconomic systems and to the development planning. It provides possibilities for evaluation of the most advantageous and effective development directions of the explored object, taking into account strong and weak points as compared with competitive macroeconomic systems. The development options of a respective object – targets and tasks are prepared on the basis of the results obtained regarding advantages and shortcomings of the competitiveness. The developmental threats are identified, taking into consideration the internal and external factors influencing the development options as well as their development trends.

The abovementioned considerations are recognized as sufficiently convincing to use SWOT method in the strategic development planning of agricultural sector. The graphical model of application of SWOT method is shown in figure 3.

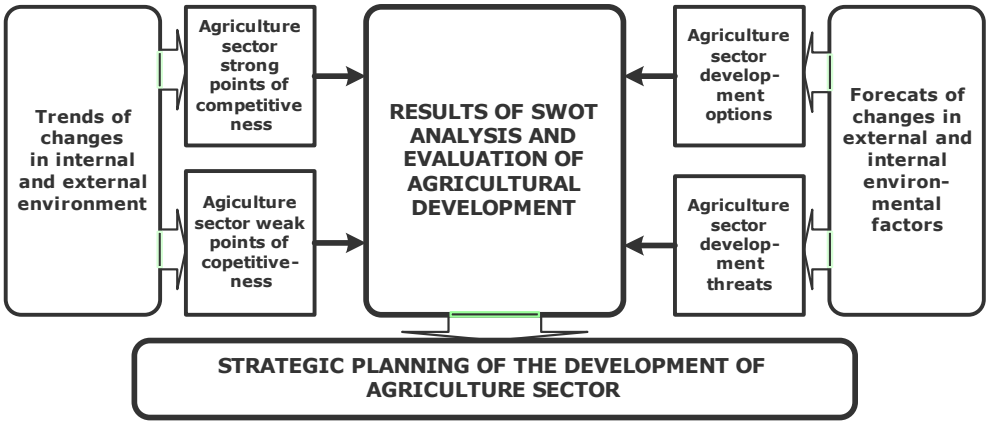

Figure 3. Application of SWOT method to preparation of the development strategy for agricultural sector

Judging by the model shown in figure 3, SWOT method is focusing more on the internal development factors of the explored object. In this case these the factors, which determine competitiveness of agricultural sector such as vegetation period, soil fertility, humidity regime, labor and the capital, its quantity and quality. The weakest point of SWOT method is in its static nature and a considerable dependence of analysis results on a subjective attitude of the user towards factors forming the internal and external environment of the explored object. As a result political, ecologic and social factors as well as their impact on agricultural production are not evaluated in a sufficiently detailed and objective way. As a consequence, the development of agricultural sector in old EU Member States did not take a sufficient account of an unfavorable impact of agricultural production on the environment and a possibility to reduce household expenditures on food in EU Member States by reducing import barriers.

Characteristics of PEST method

PEST method is usually applied to investigation of macroeconomic environment and objects. It makes the identification of the internal and external factors, influencing functions and development of the explored object easier. Macroeconomic objects are usually influenced by different elements of the State administration system, which are grouped as interrelated factors:

- Group of political factors;
- Group of economic factors;
- Group of social factors;
- Group of technological and scientific factors (Dagmar, What is PEST…, 2006; PEST analysis, 2006; PEST market…, 2006).

According to its subject matter the PEST method makes evaluation of the external environment of the explored object easier. It can be used also in the development planning of an establishment. In this case the external environment consists of 2 parts. Part one – the environment that is outside the sphere of influence of the establishment and directly or indirectly influencing the operation and development of this establishment. The second – factors staying outside the State borders, which may and may not influence the establishment. If the explored object corresponds to the macroeconomic category then PEST analysis should be used for analysis and evaluation of the internal and external environment. Model of application of PEST method is shown in figure 4.

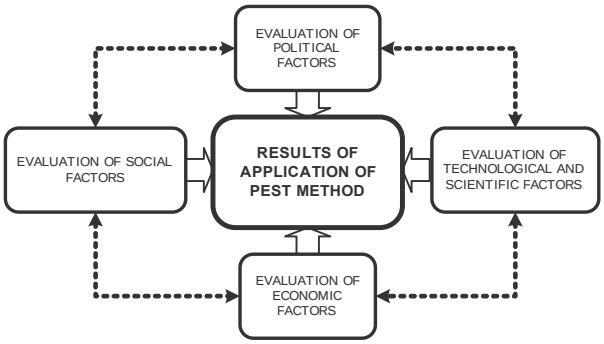

Figure 4. Functional model of application of PEST method

As shown in figure 4 elements of PEST method are interrelated. This must be taken into account when evaluating the influence of macroeconomic environment on the development of the sector. A character and trends of this interrelation must be determined within possible limits.

Application of PEST method to evaluation of the development of agricultural sector is associated with the impact evaluation of the following factors:

1) political factors:
   - impact on the sectoral development of the change of government;
   - impact of Parliament elections on the sectoral development;
   - impact of the national regulatory enactments;
   - attitude of the government coalition partners and opposition to the development of agriculture;
   - the State environmental policy;
   - efficiency of the governmental institutions;
   - EU Common Agricultural Policy;

- EU regulatory enactments influencing the development of agriculture and others;

2) economic factors:
   - the State support policy regarding the development of agricultural sector;
   - the State competition policy;
   - the State monetary and fiscal policy;
   - the State external trade policy;
   - the State rural development policy;
   - impact of agricultural production on the environment;
   - safety of agricultural products.
3) social factors:
   - demographics and the development trends in a country ;
   - totality of quantitative and qualitative indexes of education, trends of changes;
   - impact of agricultural production on living quality in rural areas, trends of changes;
   - totality of quantitative and qualitative indexes of health care, trends of changes;
   - safety indexes of agricultural production, trends of changes and other indexes.
4) technologic and scientific factors:
   - results of the development of agricultural science;
   - the State support policy towards the development of science;
   - development of modern technologies in agricultural production;
   - development of innovative products and State policy towards the industry;
   - developments in the process of production of agricultural products;
   - impact of scientific research on competitiveness improvement of products produced within the sector of agriculture and others.

By applying PEST method, the most significant factors, forming the macroeconomic environment, which are influencing and will influence the development of agricultural sector in the nearest future, are identified. A more precise vision on competitiveness of the sector and its changes in the period of strategic planning can be obtained by applying PEST – SWOT or SWOT – PEST method.

PEST – SWOT method

PEST – SWOT method is obtained by merging the aforementioned SWOT and PEST methods. Evaluating results and options of the development of agricultural sector by using PEST – SWOT method, the following interrelated tasks are being fulfilled:

1) Firstly political factors influencing the development of agricultural sector are identified and each of them evaluated by applying SWOT method. Thus strong and weak points of the national and EU policy in relation to the development of agricultural sector have been obtained. This is followed by the evaluation of options and threats in the sector, taking into account predictable changes in the national and EU policy.
2) Major factors of the economic policy are identified, which to a greater extent have influenced and will influence the development of agricultural sector. The factors identified are being evaluated by applying SWOT analysis by maintaining the approach mentioned in the previous paragraph;
3) Major social factors influencing the development of agricultural sector and each of them evaluated by means of SWOT method;
4) Technological and scientific factors are identified, which to a greater extent have influenced and will influence the development of agricultural sector, and evaluated by means of SWOT method;
5) Within possible limits a character of interrelation of factors, influencing the development of agricultural sector and their development trends are determined.

Thus a full picture is obtained about the factors influencing the development of agricultural sector, a character of their impact is evaluated and their development options and threats are predicted. In this case it is important to accurately identify factors influencing production of agricultural products and the development of agricultural sector on the whole, as well as to justifiably predict the intensity of impact of these factors in a certain period of time.

Application of PEST – SWOT method is shown in figure 5.

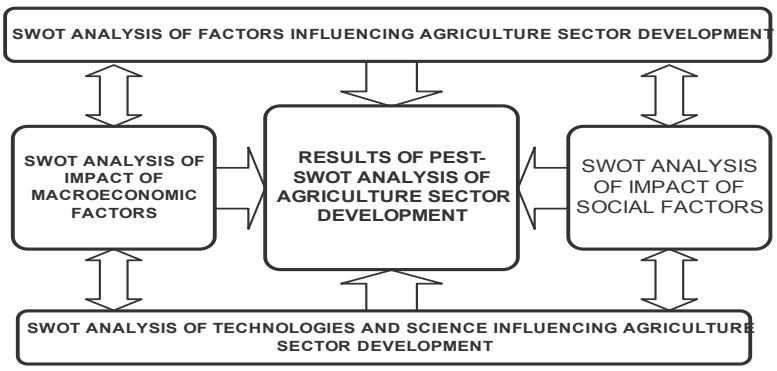

Figure 5. Functional model of PEST – SWOT application

As shown in figure 5 in case PEST – SWOT method is applied factors influencing the competitiveness of agricultural sector are evaluated, which are grouped into: political, economic, social and technological factors. By applying this method to the evaluation of macroeconomic environment or factors influencing the development of an object, it must be taken into account that these factors constitute a uniform macroeconomic system, the elements of which are reciprocally influencing each other. To increase application efficiency of PEST – SWOT method in evaluation of the factors influencing the development of agricultural sector, statistical and economic methods must be applied. They make the development predictability of the sector much easier and will yield a more accurate result.

Conclusions

1. SWOT method should be applied not only on the level of macroeconomics in order to explore strong and weak points of the competitiveness of an establishment or economic process as well as the development options and threats, but it can be used with good results in evaluation of operation of various macroeconomic systems and the development planning.
2. Application of SWOT method in drawing up of the strategic development of agricultural sector is linked to the identification of natural, comparative and acquired advantages of the sectoral development as well as to determination of weak points in the local and global aspect. It provides a possibility to determine possible development trends if there is information on the development options and threats and factors causing them at one's disposal.
3. To get orientated more precisely in the internal and external environment influencing the development of agricultural sector it is necessary to break it down into structural units or groups of factors. Such possibility is provided by application of PEST method to evaluation of macroeconomic objects, which is joined with SWOT method.
4. PEST method is usually applied to examination of the environment and objects of macroeconomics. It makes the identification of the external factors influencing functioning and development of the explored object easier.
5. In case PEST – SWOT method is applied then the factors influencing competitiveness of agricultural sector are evaluated. They are grouped into: political, economic, social and technological factors. By applying this method to the evaluation of factors influencing the development of macroeconomic environment or an object, it must be noted that these factors are forming a uniform macroeconomic system the elements of which influence each other. To increase application efficiency of PEST – SWOT method to evaluation of the factors influencing the development of agricultural sector statistical and econometrical methods must be applied. This will make the development forecasting easier and will yield a more precise result.

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