The creation of the Matrix Model for the Region Strategy in the Agriculture with using Number-Rating method

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Abstract

At present time, the competitiveness of region strategy in agriculture is unknown. There are not methodology of the evaluation it as a complex of the definitions and criteria, as the ways of the research the types of management decisions for the increasement present level of the region product security.

Key words: the competitiveness, the districts of Russia south, the agriculture, the matrix model.

Introduction

In general, the evaluation of the competitiveness of region strategy in agriculture is founded on the development between the districts of Russia. This is the new territory-branch type of clasters (Maslov, 2006).

Such clasters are structure that include the enterprises from only the one branch on the all stages of the production chain.

That clasters are used the branch (technical) criteria of the investment attractiveness with cost and market evaluation (Agaphonenko et al., 1999).

Method

At present time, the competitiveness of region strategy in agriculture is unknown. There are not methodology of the evaluation it as a complex of the definitions and criteria, as the ways of the research the types of management decisions for the increasement present level of the region product security (Balatsky et al., 2007).

We can to evaluate the region strategy in the agriculture of the Russia districts on such indicators as the competitive advantages in the matrix model. The matrix model is a system structure with logic relations for the indicators and objects of modeling on the elements of the matrix. It's future image of the situation.

Quantity of the criteria in matrix can changed in depending of present data (Chainikova, 2008). When more data, then better the calculation results of competitiveness.

Our steps for the evaluation of competitiveness the region strategy in agriculture:

- to determine the criteria of the region competitiveness;
- to classify the regions on the criteria of competitiveness;
- to evaluate the place of regions on the each criterion in the districts of Russia south;
- to create the number-rating scale of the criteria evaluation with connection of their place in the group of Russia south districts;
- to chart the matrix of the competitive strategy in agriculture with rating of each criterion in the group;
- to sum up the rating numbers of the region criteria and to calculate the number-rating evaluation of the competitive strategy in the agriculture for each region;

The calculation have been done on the RusStat data in dividing results on the agriculture strategy (Regions of Russia, 2009).

Such method helps to evaluate the competitiveness not only in present strategy but in the predictive data of the competitive advantages (Table 1).

Table 1. The matrix model of competitiveness of the APS strategy in the Russia south, points.

Regions of the South District of Russia	CS_a								CS_a
	1.1	1.2	1.3	2.1	2.2	2.3	2.4	3.1	
R_1	CS_{a111}	CS_{a112}	CS_{a131}	CS_{a121}	CS_{a122}	CS_{a123}	CS_{a124}	CS_{a131}	CS_{a1}
R_2	CS_{a211}	CS_{a212}	CS_{a231}	CS_{a221}	CS_{a222}	CS_{a223}	CS_{a224}	CS_{a231}	CS_{a2}
R_3	CS_{a311}	CS_{a312}	CS_{a331}	CS_{a321}	CS_{a322}	CS_{a323}	CS_{a324}	CS_{a331}	CS_{a3}
R_4	CS_{a411}	CS_{a412}	CS_{a431}	CS_{a421}	CS_{a422}	CS_{a423}	CS_{a424}	CS_{a431}	CS_{a4}
R_5	CS_{a511}	CS_{a512}	CS_{a531}	CS_{a521}	CS_{a522}	CS_{a523}	CS_{a524}	CS_{a531}	CS_{a5}
R_6	CS_{a611}	CS_{a612}	CS_{a631}	CS_{a621}	CS_{a622}	CS_{a623}	CS_{a624}	CS_{a631}	CS_{a6}
R_7	CS_{a711}	CS_{a712}	CS_{a731}	CS_{a721}	CS_{a722}	CS_{a723}	CS_{a724}	CS_{a731}	CS_{a7}
R_8	CS_{a811}	CS_{a812}	CS_{a831}	CS_{a821}	CS_{a822}	CS_{a823}	CS_{a824}	CS_{a831}	CS_{a8}
R_9	CS_{a911}	CS_{a912}	CS_{a931}	CS_{a921}	CS_{a922}	CS_{a923}	CS_{a924}	CS_{a931}	CS_{a9}
R_{10}	CS_{a1011}	CS_{a1012}	CS_{a1031}	CS_{a1021}	CS_{a1022}	CS_{a1023}	CS_{a1024}	CS_{a1031}	CS_{a10}
R_{11}	CS_{a1111}	CS_{a1112}	CS_{a1131}	CS_{a1121}	CS_{a1122}	CS_{a1123}	CS_{a1124}	CS_{a1131}	CS_{a11}
R_{12}	CS_{a1211}	CS_{a1212}	CS_{a1231}	CS_{a1221}	CS_{a1222}	CS_{a1223}	CS_{a1224}	CS_{a1231}	CS_{a12}
R_{13}	CS_{a1311}	CS_{a1312}	CS_{a1331}	CS_{a1321}	CS_{a1322}	CS_{a1323}	CS_{a1324}	CS_{a1331}	CS_{a13}
CS_a	CS_{a11}	CS_{a12}	CS_{a21}	CS_{a121}	CS_{a122}	CS_{a123}	CS_{a124}	CS_{a131}	CS_a

In this way, we can evaluate a competitiveness the «i» region branch and total competitiveness region strategy in APS (CS_a).

We can change the quantity of criteria in depending from availability of data - the more reliable data, the more reliable a calculation of the competitiveness.

In general, the evaluation of competitiveness of the total APS strategy could be also shared on the types of sectoral strategies in the matrix model (Shorohov et al., 2007).

A similar method could be used in the evaluation of the competitiveness not only of the current strategy, but also in modeling the future strategy on the forecasting data basis of competitive advantage.

In the calculation of the data we used the score-rated evaluation of the competitiveness of strategy. Such as:

a) in the dairy cattle production on competitive advantages data - quantity of cattle population and milk production per 1 cow;

b) in the beef cattle production - quantity of cattle population and production of livestock for slaughter (slaughter weight);

c) in the pig production - quantity of pig population and production for slaughter (slaughter weight);

d) in the sheep and goat breeding production – quantity of sheep and goats, the annual wool clip per 1 sheep (in bulk) and the production for slaughter (slaughter weight).

Results

Let's doing the matrix on the criteria: 1.1 – Production of the grain-crops and leguminous. 1.2 – Production of the sugar-beet. 1.3 – Production of the sun flower. 2.1 – Milk cattle-breeding. 2.2 – Meat cattle-breeding. 2.3 – Pig-breeding. 2.4 – Sheep-breeding and goat-breeding. 3.1 – APS of Russia district. These criteria are in the table 2.

Table 2. The matrix of competitiveness of the APS strategy in the Russia south from 1990 to 2009, points.

Regions of the South District of Russia	CS_a								CS_a
	1.1	1.2	1.3	2.1	2.2	2.3	2.4	3.1	
The Republic of Adygea	1.98	1.59	2.47	0.55	0.19	0.58	0.46	0.18	8.00
The Republic of Dagestan	0.93	0.02	0.80	1.62	2.47	0.90	3.29	0.89	10.92
The Republic of Ingushetia	0.14	1.08	0.37	0.14	0.05	0.11	0.51	0.01	2.41
The Republic of Kabardino-Balkariya	2.03	0.67	1.43	1.64	1.24	1.40	1.14	0.70	10.25
The Republic of Kalmykiya	1.07	0.08	0.88	0.88	1.10	0.94	3.06	0,10	8.11
The Republic of Karachay-Cherkessiya	0.64	2.43	0.94	0.54	0.37	0.28	0.82	0.27	6.29
The Republic of North Ossetiya - Alaniya	1.37	0.20	0.45	1.43	0.64	1.43	0.59	0.4	6.51
The Chechen Republic	0.18	0.88	0.08	0.19	0.22	0.08	0.32	0.04	1.99
Krasnodar region	3.44	3.44	3.19	3.72	3.72	3.72	2.83	1.86	25.92
Stavropol region	1.99	3.44	2.43	2.47	2.22	2.43	4.77	1.33	21.08
Astrakhan region	0.05	0.58	0.02	0.8	0.67	0.54	2.05	0.54	5.25
Volgograd region	1.60	1.16	1.98	1.8	2.20	2.43	2.90	1.10	15.17
Rostov region	2.56	2.43	2.96	2.22	2.91	3.16	4.26	1.58	22.08
CS_a	17.99	18	18	18	18	18	27	9	143.99
	53.99			81,00				9	

Note:
CS_a – the competitiveness of the strategy in agriculture;
APS – agricultural product sector.

Most competitive strategy in the agriculture between the districts of Russia south is the strategy of the Krasnodar region (25.92 points), further is the Rostov region (22.08 points), then the Stavropol region (21,08 points).

Other time, Rostov region and Stavropol region are competitors of the Krasnodar region in the agriculture.

Discussion

The total evaluation of the competitiveness in the agriculture present strategy of the Russia south districts in 2009 is 143.99 points, including competitiveness of the crop-production strategy – 53.99 points, the animal production strategy – 81 points, the production of the agricultural products – 9 points.

Such method can help to evaluate the competitiveness of the present strategy and the modeling future strategy with forecasting indicators of the competitive advantages.

Competitiveness of the regional development strategy in APS depends from the current state of its competitiveness (Figure 1).

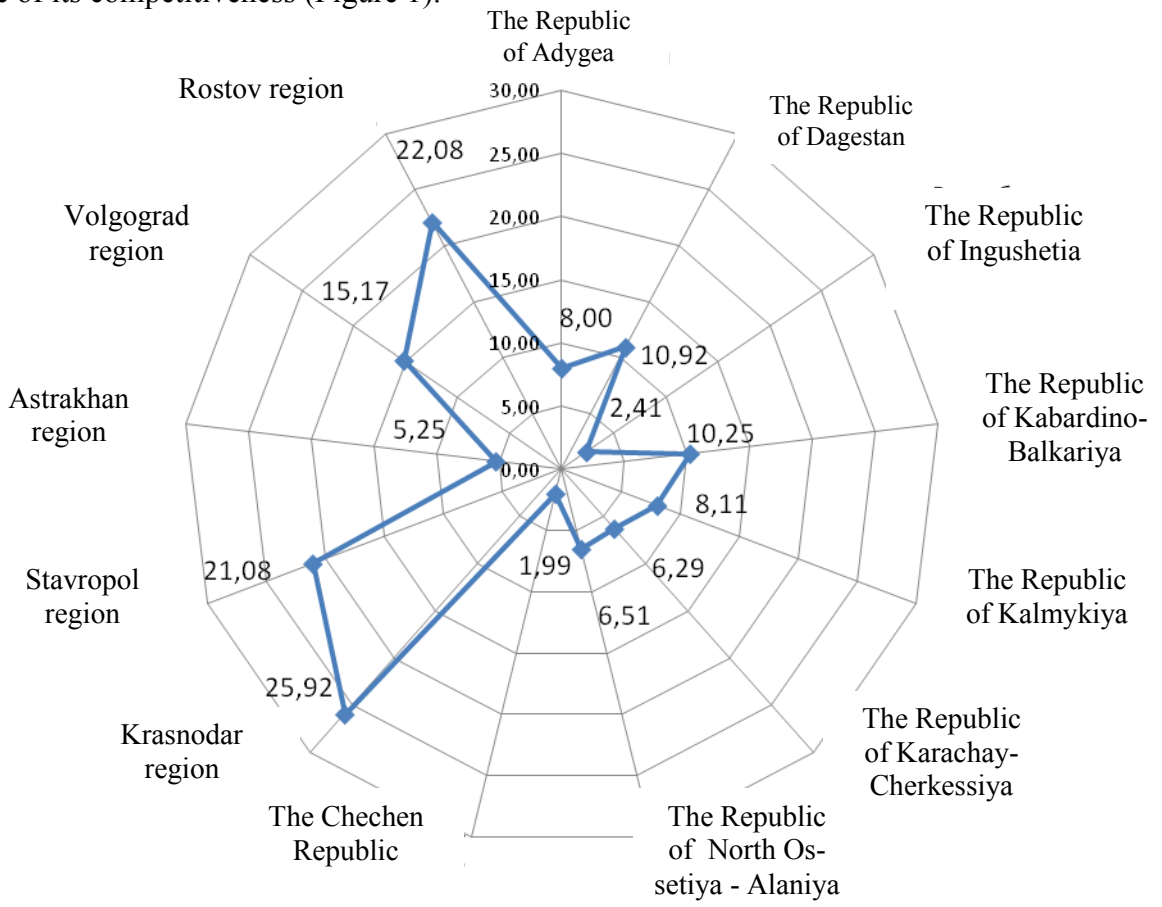

Figure 1. Chart of competitiveness of the APS strategy in the Russia south, points

Geographically, the reproductive asymmetry should be reflected on the regional development programs APS regions (Zhuravleva, 2010). For the accounting of regional differences, we can use the pattern recognition theory, the ranking that reveal the identical set of features in the competitive advantages of regional development strategy in APS. For competitive development, we are using an integrated expert-analytical approach to the analysis of the characteristics of competitiveness. To do this, we receive an analysis of statistical data and APS of Krasnodar region in comparison with the other regions of the Southern Federal District.

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