

PAPER • OPEN ACCESS

The use of crisis management in ensuring sustainable food production by organizations of border areas

To cite this article: Yu Gorbunov *et al* 2019 *IOP Conf. Ser.: Earth Environ. Sci.* **395** 012095

View the [article online](#) for updates and enhancements.

You may also like

- [ERP Implementation in Crisis Management: A Case Study of Government-Owned Electricity Company](#)
Muhamman Lubis, Exa Parmita and Lyvia Winiyanti Lumingkewas
- [Remote sensing and GIS applications for planning of sustainable food agriculture land and agricultural commodity development in Denpasar City](#)
I Lanya, N Subadiyasa, K Sardiana et al.
- [Research of adaptive features of industrial enterprise crisis management system](#)
Yu A Anikina, A A Fefelov and Yu N Malanina



ECS
The
Electrochemical
Society
Advancing solid state &
electrochemical science & technology

DISCOVER
how sustainability
intersects with
electrochemistry & solid
state science research

The use of crisis management in ensuring sustainable food production by organizations of border areas

Yu Gorbunov^{1*}, A Gorbunova¹ and I Solskaia²

¹ Altai State University, 61 Lenin prospect, Barnaul 656049 Russia

² Irkutsk State Transport University, 15 Chernyshevskogo str., Irkutsk 664074 Russia

E-mail: barnaul-gorbunov@mail.ru

Abstract. The article substantiates the relevance of the practical application of the concept of sustainable development and production. The peculiarity of doing business in the border areas is considered in details. Factors affecting sustainable food production by organizations in border areas are also analyzed. The role of crisis management in ensuring sustainable production is reviewed.

1. Introduction

The concept of sustainable production emerged within the framework of a broader theory. The theory of sustainable development determines the need for a transition to a qualitatively new level of economy. This is the level of economy that “satisfies the need of the present but does not jeopardize the ability of future generations to meet their own needs” [1]. The theory is developed in response to the challenges posed by the increasing pressure on the environment from the growth of the world’s population, the rapid pace of development of environmentally dirty, high-cost industries, leading to a catastrophic depletion of natural resources. Within the framework of the “sustainable development” concept, the models of production and consumption of goods should be qualitatively changed. In particular, the concept of sustainable production arose. On the one hand, it is aimed at saving and restoring nature; on the other hand, it focuses on increasing the volume of material benefits being created and more fully meeting the needs of the population, improving the quality of every person’s life. Finding a balance between these contradictory trends is achieved through the intensive use of all types of resources, the widespread use of their renewable types, powerful protection and restoration of the environment. [2] Concepts of sustainable development and production are widely used in research of both domestic and foreign scholars [3, 4, 5, 6].

Ensuring sustainable production is particularly important in the border areas, which are the parts of the territories of the administrative-territorial units of the state, with administrative border coinciding with the state border line [7]. This particular importance is determined by the fact that, on the one hand, sustainable production should provide an economic basis for unconditional compliance with the border regime, the procedure for protecting the state border, compliance with customs, sanitary and other types of control, the procedure for entry and exit of citizens, which is strategically important for the country. On the other hand, the socio-economic development of most border regions is at a lower level than the socio-economic development of Russia’s internal regions [8].

Solving the issue of ensuring sustainable production in the border areas, the researchers identify the following development factors: (1) cross-border cooperation, which provides additional access to commodity, financial, and transport flows in the local market; (2) price differences for industrial and



consumer goods, which determine the expansion of the sales market for some and the production of cheaper goods and services for others; (3) the ability to import cheap labor and reduce production costs; (4) interstate development programs for cross-border territories [9, 10, 11]. In our opinion, modern scientists do not pay enough attention to crisis management, which is able to largely ensure sustainable production in the border areas. A. T. Zub notes, “Crisis management is a set of organizational measures to prevent the development of the crisis, minimize the damage caused by the crisis and post-crisis restoration of the normal functioning of various socio-economic systems” [12]. In our opinion, it is precisely crisis management that is especially important for ensuring sustainable production in border areas, which economic situation is most often characterized as a pre-crisis or crisis situation.

The purpose of this research work is to study the role of crisis management in ensuring sustainable food production by organizations of border areas. The research object is the economic processes occurring in the Agricultural Production Cooperative “Kolkhoz Rakitovsky” located in the Mikhailovsky district of the Altai region.

2. Materials and Methods

The research methodology is based on a systematic approach to the objects and processes under study. In addition to general economic research methods such as vertical and horizontal financial analysis, synthesis, specific research methods were used. These specific methods are used in crisis management, as provided for by the Government Decree on Approval of the Rules for Conducting Financial Analysis by an Arbitration Manager, Order of the Ministry of Finance of the Russian Federation on Approval of the Procedure for Determining the Value of Net Assets, Order of the Ministry of Industry and Energy of Russia and the Ministry of Economic Development of Russia on Approval of Guidelines for Drawing up a Plan (Program) for Financial Recovery [13, 14, 15].

3. Results

In the course of the study, the economic activity of the agricultural production cooperative “Kolkhoz Rakitovsky” is studied, which is located in the Mikhailovsky district of the Altai region and has a border with the Republic of Kazakhstan. This organization produces food of both plant and animal origin. The production cooperative is one of the leading farms of the region. Consequently, the supply of food for the border area depends largely on the level of its sustainable production.

The average annual production capacity of a production cooperative is:

- Milk production – 1,070 tons;
- Meat production – 90 tons;
- Horse rearing – 35 heads;
- Wheat production – 2,500 tons;
- Sunflower production – 870 tons;
- Oat production – 180 tons;
- Barley production – 190 tons;
- Buckwheat production – 200 tons.

Since 2015, due to unqualified management, unfair performance of their duties as a manager, the activities of the cooperative have been unprofitable (Table 1).

Table 1. Analysis of the financial results of the organization, thousand rubles.

An indicator	2015	2016	2017	2018
Total assets (liabilities)	166,439	157,283	153,700	146,867
Adjusted non-current assets	66,240	63,949	41,835	42,563
Current assets	100,199	93,334	111,865	104,304
Liquid assets	114	863	106	406
The most liquid current assets	82	624	56	56
Receivables	6,308	5,820	3,151	8,774

Own funds	91,912	97,599	83,363	72,380
Debtor's obligations	74,527	59,684	70,337	74,487
Debtor's long-term liabilities	43,793	38,503	29,330	28,630
Debtor's current liabilities	30,734	21,181	41,007	45,857
Net revenue	47,000	12,644	32,997	73,644
Gross revenues	47,000	12,644	32,997	73,644
Average monthly revenue	5,222	4,215	3,666	6,137
Net income (loss)	-1,996	-595	-6,947	-25,731

In 2018, the proceedings commenced on the case of declaring the debtor bankrupt, the monitoring procedure was introduced. The debt on the register of creditors' claims amounted to more than 47 million rubles. When the company was on the verge of closure, food production in the border area was jeopardized. The bankruptcy of the cooperative would lead to the loss of work for its employees, the deterioration of the socio-economic situation in the region.

As part of crisis management, we have developed a financial recovery plan for this organization. A feature of developing such a plan was that the enterprise was located in the border area and was subject to the influence of a mass of specific impacts that are not found in territories remote from the state borders. The implementation of the financial recovery plan should lead to the achievement of the financial indicators presented in Table 2.

Table 2. Projected financial performance of the organization, thousand rubles.

Indicators		March 2019 – February 2020	March 2020 – February 2021
Meat production	Income	8,331	13,523
	Costs	7,896	13,561
Milk production	Income	22,598	22,598
	Costs	12,173	12,173
Rearing horses	Income	1,100	500
	Costs	189	155
Crop production	Income	44,260	145,089
	Costs	20,938	20,938
Rental property (revenue)		152	152
Land lease (expenses)		5,559	6,670
Other expenses		2,209	2,209
Total revenue		76,441	181,862
Total expenses		48,964	55,706
Revenues less expenses		27,477	126,155
Single agricultural tax		1,079	4,041
Net profit		26,398	122,115

The implementation of the financial recovery plan allows to restore food production in the border area, to preserve 132 jobs, to prepare the base for the creation of an additional 12 jobs, to create conditions for payments to the budget and extrabudgetary funds in 2019 and 2020 more than 33.4 million rubles.

4. Discussion

The creditors of the production cooperative, employees of the tax inspectorate, the court, where the bankruptcy case of the organization under investigation is considered, acknowledge the data obtained as a result of the study as reliable. Therefore, we can talk about the objectivity and completeness of the study.

The results of the work confirmed the conclusions made by previous researchers about the special complexity of doing business in the border areas, often leading enterprises to bankruptcy. Considering the issue of preventing the bankruptcy of these organizations, following other researchers, we highlight

such factors as the favorable opportunities for cross-border cooperation, the difference in prices for similar goods, and intensive traffic flows through the territory. But at the same time, we believe that the use of favorable factors, the prevention of negative impacts will be much more effective when applying crisis management. It is the crisis management that allows one to comprehensively study the current situation, make a reliable forecast of its development, comprehensively use all the methods of influence on the managed object, using the whole system of favorable factors and obtaining a synergistic effect, and thus prevent the bankruptcy of organizations and ensure sustainable production.

5. Conclusion

The research results clearly show the following:

- High relevance of practical application of concepts of sustainable development and production;
- The presence of objective factors that impede economic activities, including food production, in the border areas;
- The relevance of using the crisis management in ensuring sustainable food production by organizations of border areas.

References

- [1] World Commission on Environment and Development 1987 *Report of the World Commission on Environment and Development: Our Common Future*. World Commission on Environment and Development Available at: <http://www.un-documents.net/our-common-future> (Accessed 03 04 2019)
- [2] Donella H Meadows, Dennis L Meadows, Jorgen Randers, and William W 1972 *Behrens III* (New York, NY: Univers Books)
- [3] Gorbunov Yu V, and Sokolova O N 2015 *Theory and practice of using university research projects by industrial enterprises in shaping the mechanism for their sustainable development* (Barnaul, Russia: Publishing house of Altai State University)
- [4] United Nations Statistics Division Development Data and Outreach Branch 2018 *The Sustainable Development Goals Report* Available at: <https://unstats.un.org/sdgs/report/2018> (Accessed 03 04 2019)
- [5] Bezgodov A 2016 *Planetary project: from sustainable development to managed harmony* (St. Petersburg, Russia: Peter).
- [6] Akayev A A, Korotaev A V, Malinetsky G G, and Malkov S Yu Eds 2017 *Modeling and forecasting global, regional, and national development* (Moscow, Russia: Librokom Book House)
- [7] Academician (n.d.) *Border dictionary* Available at: http://border.academic.ru/943/Приграничная_территория (Accessed 03 04 2019)
- [8] Government of the Russian Federation 2019 *Spatial Development Strategy of the Russian Federation for the Period up to 2025* Available at: <http://static.government.ru/media/files/UVAIqUtT08o60RktoOXl22JjAe7irNxc.pdf> (Accessed 03 04 2019)
- [9] Kupriyanov S V, Stryabkova E A, and Gerasimova N A 2018 Features of the economic development of border regions *Scientific Vedomosti (Economy. Computer Science Series)* **45**(1) pp 5-14
- [10] Shvakov E E, Lobova S V, and Kozhevnikova A A 2018 Conditions and factors of developing the border areas of the Altai region *Fundamental Research* **12**(2) pp 288-292 Available at: <http://fundamental-research.ru/ru/article/view?id=42392> (Accessed 03 04 2019)
- [11] Damdyn O S 2016 Analysis of the development possibilities of border and cross-border trade and economic relations of the Republic of Tyva *Young Scientist* **1** pp 342-345 Available at: <https://moluch.ru/archive/105/24643/> (Accessed 03 04 2019)
- [12] Zub A T 2017 Situational planning in crisis management: a recipe for success *Public Administration. Electronic Messenger* **64** Available at: <https://cyberleninka.ru/article/n/situatsionnoe-planirovanie-v-antikrizisnom-upravlenii-retsept-uspeha> (Accessed 03 04 2019)
- [13] Government of the Russian Federation 2003 *Resolution on Approving the Rules for Conducting Financial Analysis by an Arbitration Manager* (June 25, 2003 No. 367) Available at: <https://base.garant.ru/12131539/> (Accessed 03 04 2019)
- [14] Ministry of the Russian Federation 2014 *Order on Approval of the Procedure for Determining the Value of Net Assets* (August 28, 2014 No. 84n) Available at: <https://base.garant.ru/70771060/> (Accessed 03 04 2019)

- [15] Ministry of Economic Development of Russia 2007 *Order of the Ministry of Industry and Energy of Russia on Approval of Guidelines for Compiling a Plan (Program) for Financial Recovery*” (April 25, 2007 No. 57/134) Available at: <http://economy.gov.ru/minec/documents/doc1180526791125> (Accessed 03 04 2019)