

Application of Anti-Crisis Measures for the Sustainable Development of the Regional Economy in the Context of Doing Local Business in a Post-COVID Environment



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ABSTRACT

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The main purpose of the article is to form a theoretical and methodological mechanism for the application of anti-crisis measures for the sustainable development of the regional economy in the post-COVID environment. For this purpose, it was chosen to separately take the region as an example of the application of the proposed mechanism. The research methodology involves the use of methods for graphical modeling of the mechanisms for making and implementing managerial decisions. The popularity and convenience of the methods make it possible to effectively form the desired mechanisms. The relevance of the topic is due to the fact that the world has finally moved into the post-COVID period of development. COVID-19 has not gone away, but the regional economy must move forward. As a result of the study, a theoretical and methodological version of the possibilities of applying anti-crisis measures for the sustainable development of the regional economy in the post-COVID environment was presented. The study has a number of limitations, and they relate to the lack of opportunities to apply the proposed mechanism to a larger number of regions. Further research should cover more regions and take into account not only the post-COVID conditions of sustainable development but also the Ukrainian-Russian military crisis.

1. INTRODUCTION

The sustainable development of the regional economy is a process of ensuring the functioning of the territorial system with specific parameters under given conditions, for the required period of time, which leads to the harmonization of existing factors of production and an increase in the quality of life while maintaining and gradually reproducing the integrity of the environment. The concept of sustainable development of the region's economy reflects the understanding of the close relationship of environmental, economic, and social problems of mankind and the fact that they can only be solved in an integrated manner with the cooperation and coordination of efforts of all countries of the world.

Today, the problem of ensuring sustainable development in a post-COVID environment is very acute for countries and regions. Comprehensive globalization and internationalization lead not only to expanding borders and attracting new participants to the international economic community but also the emergence of new challenges, in particular, the rapid spread of the COVID-19 virus. In order to overcome them, the community faces the imperative of applying anti-crisis measures to ensure sustainable development, which is joined not only by countries but also by regions. At present, the most acute issue is the effective development and distribution of productive forces from the standpoint of the concept of sustainable development of the regional economy, which

combines three components that are inherent in it: economic, social, and environmental.

The sustainable development of the regions is one of the important components of the modern market economy, and the state of the regions is one of the macroeconomic indicators of the level of development of the whole country at the international level. In the context of the global pandemic caused by the spread of the SARS-CoV-2 virus, ensuring the sustainable development of territories is an urgent issue, especially in the context of building the strategic potential of the state, which requires the improvement of management tools at all hierarchical national levels. The realities of the modern world economy, unstable and unpredictable in many countries due to the difficulty of predicting the development of the situation with the possibility of the so-called "return of COVID-19", give reason to assert that the pandemic has become a kind of crisis-forming factor in its time, hindering the healthy sustainable development of regions. In fact, the economic situation of the regions is inseparable from the coronavirus pandemic, because the cases themselves and their growth in individual countries and regions, as well as the quarantine restrictions caused by governments, have affected many important macroeconomic indicators. Thus, in many countries, anti-crisis measures aimed at slowing down the spread of coronavirus have affected consumption volumes, increased the number of unemployed, and led to a decrease in retail sales.

The impact of the COVID-19 crisis is extremely heterogeneous at the regional and local levels; it has a strong territorial dimension and significant implications for the authorities/institutions that must respond directly to pandemic outbreaks in the context of crisis management. Local executive authorities and local governments are responsible for critical aspects of the implementation of quarantine measures, health care, and social services - and this puts them at the forefront of the fight against the crisis. Here, no matter how much you want, you need to apply anti-crisis measures. So, just the post-COVID environment today is the result of the application of many anti-crisis regional measures. However, this is not enough. Even in a post-COVID environment, anti-crisis measures should be applied.

An essential tool for achieving sustainable development of the regional economy should be the formation of an effective mechanism for the application of anti-crisis measures. Now it is quite easy to implement because, with the opportunities and freedom that most countries give to their regions and provinces, one can talk about variability and accessibility.

The main purpose of the article is to form a theoretical and methodological mechanism for the application of anti-crisis measures for the sustainable development of the regional economy in the post-COVID environment.

2. LITERATURE REVIEW

When we talk about the sustainable development of the region, most of the ideas come through the prism of strategic policy [1, 2]. Ensuring the stability and sustainability of the socio-economic development of the state is impossible without taking into account the specifics of the regions that form it, their socio-economic stability, and development mechanisms. Sustainable development of the region implies cost-effective, socially oriented, and environmentally safe development of the socio-economic system of the region.

Scientific and practice literature draws attention to the problems of sustainable development and regional planning. This may be the economic, social, or environmental nature of the study. However, most studies [3-5] focus on threat assessment. An assessment of the sustainable development of the country's regions is necessary to identify internal and external threats, which will allow developing measures to prevent their negative impact in order to identify development scenarios and develop an optimal strategy for the functioning of the country's regional systems. As the authors note, today an analysis of the methodological approaches used in assessing the sustainable development of regions has shown that, despite their significant number, there is currently no single systematic approach to assessing such a complex phenomenon as the sustainable development of regions, so the issue of developing a comprehensive structural method, which should objectively determine the problems of sustainable development of the regions of the country, the choice and validity of goals and directions for achieving it. But we consider this question too complex for one study and do not take the responsibility to form something similar today. We are interested in anti-crisis regional measures and what COVID-19 left behind.

Sylkin et al. [6] actively developed a solution to the problem of effective anti-crisis management. They noted that even at the micro level, sustainable development and planning on the part of the region where this crisis was formed is still of great

importance in overcoming the crisis.

We can safely agree with the generalized opinion [7-9] that sustainable development is recognized at the global level as the main direction in the development of the civilization of the XXI century, which is declared a new imperative for the next generation, requiring a rethinking of existing values, a radical change in worldview, priorities, and others. Norms and forms of rationality violation of the balance - of nature-humanity is manifested primarily in the deterioration of the health of nations, a decrease in life expectancy at birth, and significant social stratification in societies due to unequal opportunities for access to resources. In this regard, there is an objective need to study the relationship between security and sustainable development, identify the causes and consequences, and determine the nature of the mutual influence. And today, the consequences of COVID-19 are superimposed on all this.

If we talk about the possibilities of the modeling process, then Kryshchanovych et al. [10], a model of a regional socio-economic system should be understood as a complex probabilistic dynamic system, which covers the processes of production, exchange, distribution, and consumption of material and other goods. The authors also noted that COVID-19 brought not only a crisis in the context of a pandemic but the so-called post-COVID crisis too.

In general, COVID-19 and the problems of sustainable development of the region are not new to scientists [11, 12]. It was noted that the socio-economic situation in the regions has become more complicated and even less predictable, given that the period of quarantine restrictions has been extended more than once. The protracted nature of the COVID-19 pandemic required an emphasis on the accelerated endogenous growth of the regional economy, the involvement of previously unused resources in the economic turnover, and their transformation into development assets. The reorientation of business at the local level in the new reality was imperative.

In our study, we are not trying to present a complex multifaceted model, but are trying, through the modeling technique, to present our mechanism for implementing anti-crisis measures.

Given the scientific and practical achievements described in the literature, we believe that today, analysis and attempts to resolve the issue of applying anti-crisis measures for the sustainable development of regions in a post-COVID environment are not enough. Thus, COVID-19 brought a lot of problems and almost immediately became a crisis phenomenon that took place in all regions of the world, however, its consequences and how the regions should develop further is still a crisis issue.

3. METHODOLOGY

The methodology of the study assumes the achievement of the set goals of the study, namely the formation of the necessary mechanism for the implementation of anti-crisis measures for the sustainable development of the region's economy. This mechanism will determine the strategic paths for further regional development of the economy. To do this, we used several basic methods, which will be described later in the text.

First of all, we should apply the IDEF methodology, which can help achieve the desired graphical effect when describing our mechanism. Through the use of the necessary programs

and conditions, it allows the reader and the leadership of the regional development departments to understand the proposed mechanism for the implementation of anti-crisis measures for the sustainable development of the region's economy. First of all, it is necessary to determine the initial conditions of our mechanism for the implementation of anti-crisis measures for the sustainable development of the region's economy (Figure 1).

The matrix method was used to form a strategy selection matrix according to the mechanism we have built for the implementation of anti-crisis measures for the sustainable development of the region's economy.

To apply all the above methods, we have chosen a separate region of Canada - the province of Alberta. The choice fell on her as a result of the residence of most of the authors of the article in this province (the move took place as a result of

military actions in our country). Note that all the methods used in the article are currently valid, only theoretical analysis and the selected province of Alberta serve as an auxiliary object for demonstrating the results.

It should be noted that each mechanism is designed to fulfill its goals. In our case, this goal is to ensure the sustainable development of the Alberta economy. Let's denote it as P_0 , thus, to achieve it, it is necessary to carry out a number of processes that will form a certain subset in our mechanism and achieve condition (1):

$$P_0 = [P_1, P_2, P_3, P_4, P_5, P_6] \tag{1}$$

Of course, a number of such methods as analysis and synthesis and the abstract method were used for theoretical research and systematization of information.

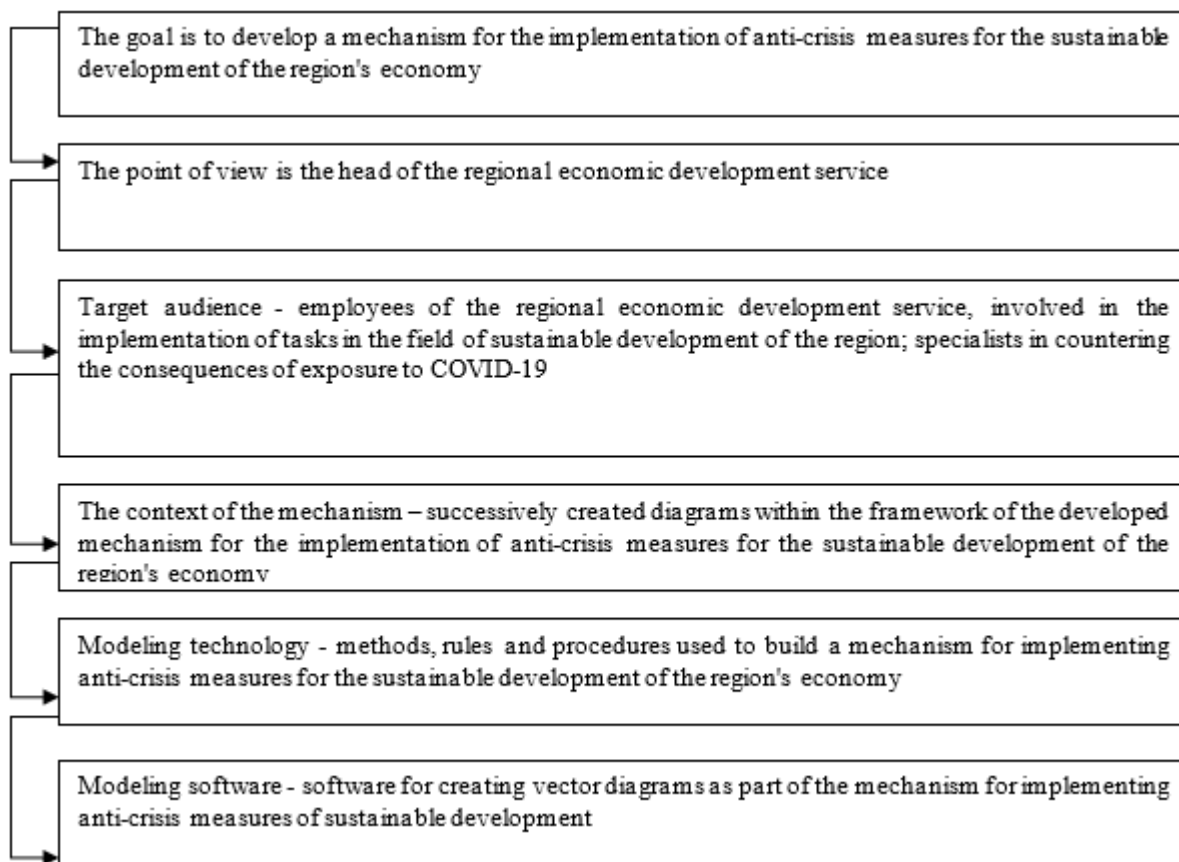


Figure 1. Initial conditions of the mechanism for implementing anti-crisis measures for sustainable development of the regional economy

4. RESULTS OF RESEARCH

The province of Canada we have chosen is one of the largest, and therefore, a large number of people living only increased the spread of COVID-19. Even though the province of Alberta does not have access to the sea or ocean, one of the largest financial cities in the world, Calgary, is located on the territory. It is Edmonton and Calgary that ensure the sustainable economic development of the region. The oil and rural industries are powerful tools for ensuring sustainable economic development. Even in 2022, Alberta saw an increase in COVID-19 cases in January.

During the pandemic, anti-crisis measures were aimed at providing the necessary amount of vaccines and expanding the

medical staff. That is, the system of anti-crisis management in the region was completely strategically aimed at the medical sphere. But now we are in a post-COVID period when the number of diseases in the province is decreasing, and almost the entire population of the province has been vaccinated. Under such conditions, anti-crisis measures should be aimed at the economy and its development.

The first result of our study will be the formation of the stages of our mechanism aimed at achieving goal P_0 (Figure 2).

One of the key steps in building a mechanism is defining its context. This is where the diagramming methodology comes in handy. It will allow us to show what context the mechanism for implementing anti-crisis measures to ensure sustainable

economic development of the region in the post-COVID environment brings. Thus, we will form our contextual diagram of the essence of the mechanism for implementing anti-crisis measures to ensure sustainable economic development of Alberta in a post-COVID environment (Figure 3).

So, let's model and graphically present our theoretical and methodological mechanism of anti-crisis measures for the sustainable development of the Alberta province's economy in the post-COVID environment (Figure 4).

Consider the proposed steps according to the mechanism, in more detail:

P₁ – Ensure the growth of the oil industry. The issue of gas and oil is a complete disaster. The world in the context of COVID-19 was not very worried about oil and gas at that time, there were enough problems with the healthcare system. But as soon as the Russian Federation unleashed a war in Ukraine, all the countries of Europe began to massively look for new suppliers of gas and oil. The sustainable economic development of the province of Alberta depends entirely on the development of its oil and gas industry. She has enough of it, but anti-crisis measures should be aimed at maintaining a certain balance, which will not allow exporting everything abroad.

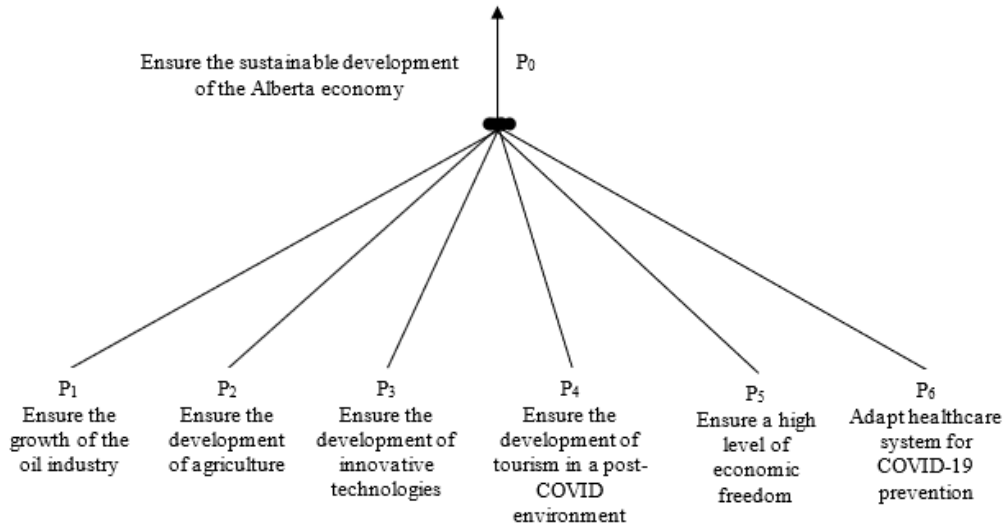


Figure 2. The stages of our mechanism aimed at achieving the goal P₀

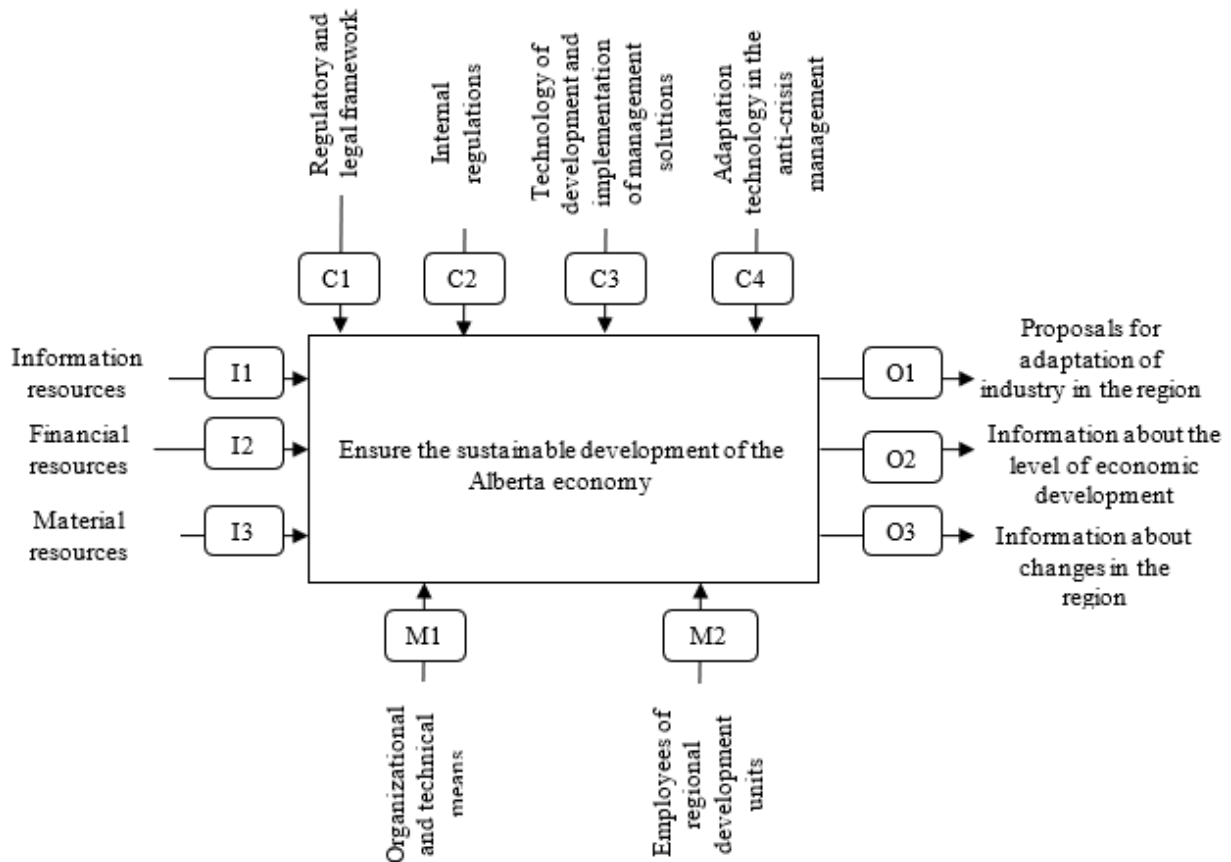


Figure 3. The contextual diagram of the essence of the mechanism for implementing anti-crisis measures to ensure sustainable economic development of Alberta in a post-COVID environment

P₂ – Ensure the development of agriculture. The province's agriculture was largely unaffected, but now in a post-COVID environment, with Ukraine as one of its biggest grain exporters having a military conflict, Canada must help export its grain, which it has enough. The development of agriculture today has reached the international level of anti-crisis measures due to the war in the center of Europe. In terms of sustainable development, each province should develop agriculture in order to achieve the sustainable development of the state as a whole.

P₃ – Ensure the development of innovative technologies. Neighborhood with the United States brings a lot of positive things to the development of Canada and its provinces. Already today, we can talk about the onset of Industry 4.0 in the United States and its “contagious effect” on neighboring countries. Canada is a powerful innovative country in the post-

COVID period and should establish a high level of investment attractiveness for its regions. The sustainable development of the province is, first of all, to keep up with the times and international market conditions. Be a competitive region. This is achieved by the innovative orientation of the province.

P₄ – Ensure the development of tourism in a post-COVID environment. Tourism has suffered the most. Canada is one of the countries that is located across the ocean, and even if it is difficult to access due to its geographical nature, its provinces are still very desirable for tourists all the time. Mass vaccination and the cancellation of many anti-crisis measures of the pandemic provoked a “yearning” for travel and a tourism boom began. Under such conditions, anti-crisis measures in the province should be aimed at the development of such areas of tourism, where a low crowd of people is possible and mainly outside big cities.

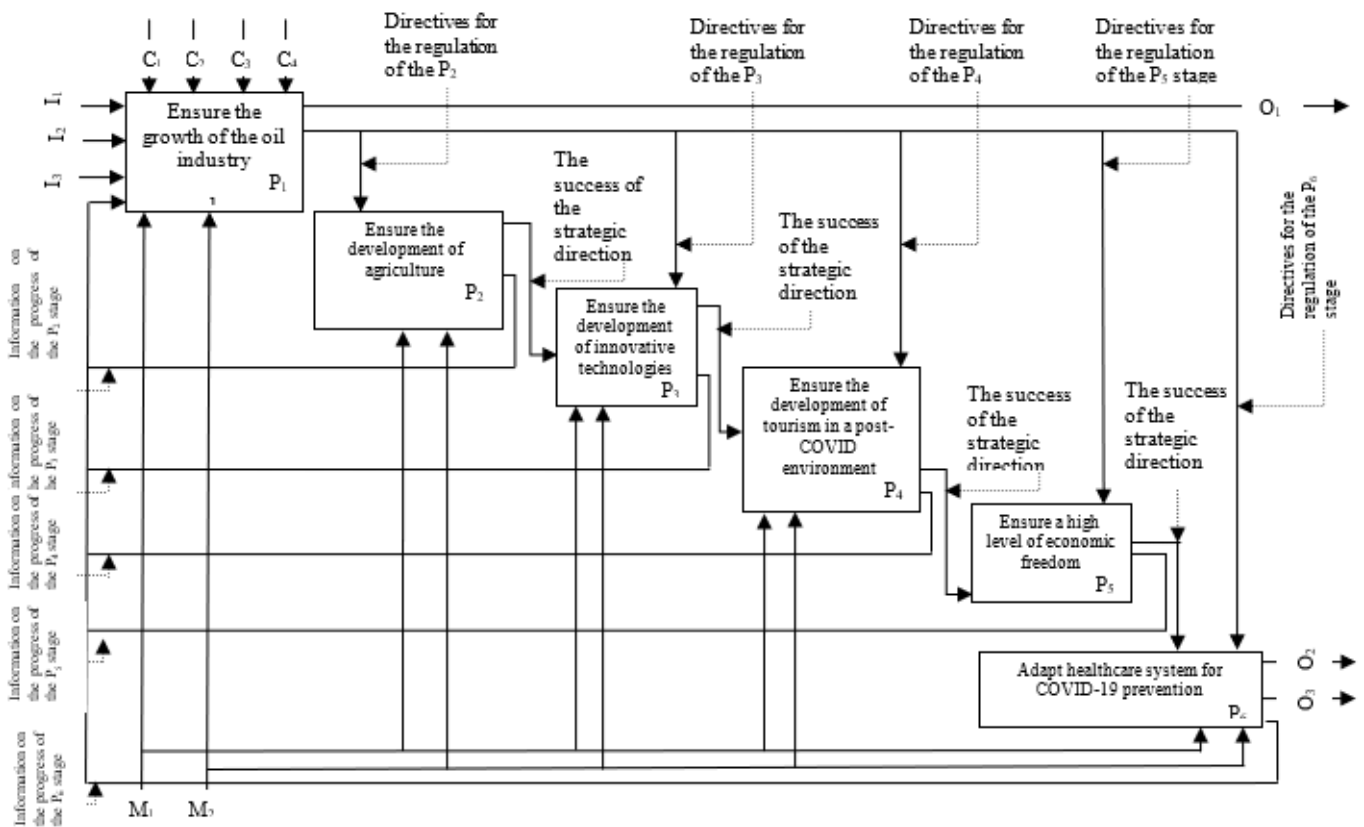


Figure 4. The theoretical and methodological mechanism of anti-crisis measures for the sustainable development of the Alberta province's economy in the post-COVID environment

Table 1. The matrix of the choice of strategic direction depends on the achieved stages during the implementation of the corresponding mechanism

The stage of application of the mechanism	Completion of 80-100% of the specified stages	Strategic direction
P ₁ -P ₂	Ensure the growth of the oil industry and agriculture	Increasing the export of natural gas and oil. Development of investment attractiveness of agriculture
P ₁ -P ₃	Ensure the development of innovative technologies	Empowerment for innovation-driven systems that contribute to pandemic response
P ₁ -P ₄	Ensure the development of tourism in a post-COVID environment	Emphasizing the development of those tourism sectors that are least affected by COVID-19: ski resorts, recreational systems, and outdoor recreation
P ₁ -P ₅	Ensure a high level of economic freedom	Reducing the pressure on business development in the province and promoting its growth
P ₁ -P ₆	Adapt the healthcare system for COVID-19 prevention	Expansion of the program for financing the system of post-COVID-19 consequences

P₅ – Ensure a high level of economic freedom. COVID-19 has required a series of stringent mandatory measures for all socio-economic systems. The business had to do everything that they say at the state level and comply with the global conditions for the introduction of business when there is a pandemic. The post-COVID period suggests that there should be economic freedom and freedom for business in the province, but we should not forget that COVID-19 has not gone away. Economic freedom must exist in any province, but anti-crisis measures should focus on monitoring the development of diseases and how business contributes to coping with the consequences of COVID-19.

P₆ – Adapt the healthcare system for COVID-19 prevention. The health system in the province can never forget COVID-19. Today, sustainable development is threatened by the active work of anti-vaccinators who can allow a crisis in the region. Mass preventive vaccination and proper informing of the population should be actively carried out in the province in a post-COVID environment.

So, of course, not all stages of the proposed mechanism can be implemented immediately or even implemented for a number of reasons or problems. In this case, we propose several strategic directions for the sustainable economic development of the region, depending on the tasks achieved during the implementation of the mechanism (Table 1).

For example, P₁ and P₂ have been successfully completed, so for the sustainable development of a region or province, a strategy to increase the export of natural gas and oil should be applied. Development of investment attractiveness of agriculture. Of course, such a strategy is not final, because, in the process of its implementation, we eventually reach the next stages and can move on to another strategic direction. The matrix we propose is not near-final, so its demonstration today is a beta view. We will continue the research in this direction further since the issue of applying the strategy selection matrix based on the implementation of a particular mechanism is an extensive issue and cannot be described in just a few pages of one scientific article.

5. DISCUSSIONS

Discussing the results of the study, it should be noted that the work deals with anti-crisis management and this is not a conventional management system. As noted by Sylkin et al. [13], anti-crisis measures require a completely different approach and resources. Scientists paid attention to the formation of a model that could demonstrate how the anti-crisis management system works, but without taking into account the sustainable development of the region and COVID-19.

Discussing the results of the study, it should be noted that not only the province we have chosen is experiencing a strong post-COVID crisis. As scientists note [14, 15], fundamental structural weaknesses have made the countries of the world particularly vulnerable to the pandemic and the shocks it causes. Its effect on local economic activity was catastrophic: Companies closed as containment measures were introduced in most states, and mobility was limited. However, the impact of the crisis on the economies of the regions was particularly severe due to trade disruptions, low global demand for energy and raw materials, and restrictions on movement, which were the main drivers of growth in the regions. Complicating the situation is the fact that their recovery largely depends on

factors beyond the control of the region's governments.

Most scientists [16-19] complained about the problem of vaccination. Arguing that because of it, the crisis in many regions only intensified. Despite the fact that the governments of the countries of the regions have announced their desire to vaccinate the majority of the population by the end of 2021, serious problems with the supply of the vaccine and administrative issues do not allow the mass vaccination to be rolled out as planned. These difficulties are largely related to the limited capacity of local health systems and logistical difficulties that predate the crisis; governments must create short-term solutions both at the national level and in cooperation with colleagues from the region and international partners. The first response to the crisis showed a growing trend toward strengthening regional cooperation, which could lead to the development of a regional, comprehensive and mutually beneficial recovery agenda.

Filippova et al. [20] argued that in the context of the active use of the circular economy, it is possible to achieve sustainable development of the region even with the negative impact of the crisis aspects of COVID-19. But, in our opinion, this is not the case. To do this, we are already seeing problems with the post-COVID crisis today. Anti-crisis measures are always needed.

Our study is different and has its own note of scientific novelty. It consists in the formation of a theoretical and methodological mechanism for the application of anti-crisis measures for the sustainable economic development of the region. Of course, its application to the example of a single province (region) does not yet mean its practical effectiveness, but this is only the beginning. We propose a strategy selection matrix in case of successful implementation of certain stages of the proposed mechanism, however, it should be improved in accordance with the characteristics of other provinces (regions).

The practical application of the model we have formed is that it will allow us to form a complete set of anti-crisis measures and systematize them in the form of a clear model. At present, the model is purely theoretical and methodological in nature, but has signs of practical effectiveness, which can be proved in further studies in the system of regional government of the provinces of Canada.

6. CONCLUSIONS

Summing up, it should be noted that the sustainable development of individual regions and localities is not just a fashionable topic, but a radically new approach to determining the subjects of the economic process and their functions, especially in a post-COVID environment.

Strengthening the role of regions in the national economic complex, increasing their independence on the basis of active processes of decentralization of forms of management, and the emergence of new methods for making anti-crisis management decisions necessitate the improvement of methodological tools for managing anti-crisis processes of socio-economic sustainable development of regions. Based on a study of experience, it can be argued that the decisive role in the effective solution of the problems of regional socio-economic sustainable development belongs to the rational use of the financial potential of the region and the application of innovative methods of anti-crisis management.

As a result of the study, a theoretical and methodological

version of the possibilities of applying anti-crisis measures for the sustainable development of the regional economy in the post-COVID environment was presented. The study has a number of limitations, and they relate to the lack of opportunities to apply the proposed mechanism to a larger number of regions. There are enough crisis situations in the world today. Further research should cover more regions and take into account not only the post-COVID conditions of sustainable development but also the Ukrainian-Russian military crisis. Even after the end of military actions on the territory of Ukraine, most regions of the world will still feel the post-war consequences of this crisis. That is, the urgency of the issue of the application of anti-crisis measures will be insufficient.

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