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THE BLUE ECONOMY: A NEW WAY TO SOLVE ENVIRONMENTAL AND ECONOMIC PROBLEMS

Purpose. *This work was supported by Shota Rustaveli National Foundation of Georgia (SRNSFG) [grant number MR-21-1059]. This paper discusses the Blue Economy, which responds to the UN Sustainable Development Goals (Goal 1; 8; 14:15; 17). The purpose of the study is to analyze the possibilities of formation of the Blue Economy and its implementation in the world and in Georgia. In order to achieve this goal, among other tasks, it is planned to solve such a task as describing the usefulness of the Blue Economy in economic, social and ecological directions; Review and analysis of theoretical foundations and practical experience of the Blue Economy.*

Methodology / approach. *The research uses methods of analysis, synthesis, deduction, comparison, as well as expert assessments, theoretical studies of international organizations and scientific-economists. Also, a case study method.*

Results. *The paper discusses the strategic direction and challenge of the Blue Economy as a modern, innovative policy that contributed to the economic strengthening, development and inclusive growth of the country. The experience of the leading countries clearly shows that without the policy of stimulating at the national level, in the conditions of the active role of the countries, individual regions would not be able to consider and improve the existing economic, ecological and social aspects.*

Originality / scientific novelty. *The scientific novelty lies in the fact that the information and scientific conclusions about the modern Blue Economy are provided in a systematized format to the Georgian scientific community and interested parties. It should be noted that researches are rarely conducted in this direction and scientific literature in Georgian is scarce, which adds even more importance to it.*

Practical value / implications. *For Georgia, as a country rich in water resources in the Black Sea region, studying the successful experience of the Blue Economy and implementing the recommendations based on the research will contribute to the process of introducing and integrating the principles of the Blue Economy in Georgia, not only in the country, but also in the region.*

Keywords: *Blue Economy, Principles of the Blue Economy, Sustainability, Black Sea, Georgia.*

ნესტან ვარშანიძე
გათუმის შოთა რუსთაველის სახელმწიფო უნივერსიტეტი
საქართველო

ლურჯი ეკონომიკა: ახალი გზა გარემოსდაცვითი და ეკონომიკური პრობლემების გადასაჭრელად

მიზანი. *მოცემული კვლევა განხორციელდა „შოთა რუსთაველის საქართველოს ეროვნული სამეცნიერო ფონდის მხარდაჭერით [გრანტის ნომერი MR-21-1059]. წინამდებარე ნაშრომში განხილულია ლურჯი ეკონომიკა, რომელიც ეხმიანება გაეროს მდგრადი განვითარების მიზნებს (მიზანი 1; 8; 14: 15; 17). ნაშრომის მიზანია სხვადასხვა კვლევის მეთოდის გამოყენებით ნათლად ასახოს ლურჯი ეკონომიკის თავისებურებები და პრობლემური საკითხები მსოფლიოსა და საქართველოში. გაკეთებულია ლურჯი ეკონომიკის თეორიული საფუძვლებისა და პრაქტიკული გამოცდილების მიმოხილვა და ანალიზი; აღწერილია ლურჯი ეკონომიკის სარგებლიანობა ეკონომიკური, სოციალური და ეკოლოგიური მიმართულებით.*

მეთოდოლოგია/მიდგომა. *ნაშრომში გამოყენებულია ანალიზის, სინთეზის, დედუქციის, შედარების მეთოდები, აგრეთვე ექსპერტული შეფასებები, საერთაშორისო ორგანიზაციების თეორიული კვლევები. გაკეთებულია კონკრეტული შემთხვევების ანალიზი.*

შედეგები. *ნაშრომში განხილულია ლურჯი ეკონომიკის, როგორც თანამედროვე, ინოვაციური პოლიტიკის სტრატეგიული მიმართულება და გამოწვევა, რომელმაც ხელი უნდა შეუწყოს ქვეყნის ეკონომიკურ გაძლიერებას, განვითარებასა და ინკლუზიურ ზრდას. წამყვანი ქვეყნების გამოცდილება ნათლად აჩვენებს, რომ ეროვნულ დონეზე არსებული აქტიური სტიმულირების პოლიტიკის გარეშე რთულია რეგიონებში არსებული ეკონომიკური, ეკოლოგიური და სოციალური ფაქტორების გაუმჯობესება.*

ორიგინალობა/სამეცნიერო სიახლე. *ნაშრომის სამეცნიერო სიახლე არის ის, რომ თანამედროვე ლურჯი ეკონომიკის შესახებ სამეცნიერო საზოგადოებასა და დაინტერესებულ პირებს მიეწოდებათ ობიექტური და გაანალიზებული ინფორმაცია. აღსანიშნავია, რომ ამ მიმართულებით იშვიათად, შეიძლება ითქვას არც კი, ჩატარებულა კვლევები, მცირეა ქართულენოვანი სამეცნიერო ლიტერატურა, რაც კიდევ უფრო მეტ მნიშვნელობას სძენს ნაშრომს.*

პრაქტიკული ღირებულება/შედეგები. *საქართველოსთვის, როგორც შავი ზღვის რეგიონის წყლის რესურსებით მდიდარი ქვეყნისთვის, ლურჯი ეკონომიკის პოლიტიკის წარმატებული გამოცდილების შესწავლა და პრაქტიკულ კვლევებზე დაფუძნებული რეკომენდაციების განხორციელება ხელს შეუწყობს საქართველოში ლურჯი ეკონომიკის პრინციპების დანერგვისა და ინტეგრაციის პროცესს. არა მარტო ქვეყანაში, არამედ რეგიონშიც.*

საკვანძო სიტყვები: *ლურჯი ეკონომიკა, ლურჯი ეკონომიკის პრინციპები, მდგრადობა, შავი ზღვა, საქართველო.*

Introduction and review of literature. The modern world faces many challenges related to sustainable economic solutions and management systems. The world's oceans, seas and water resources are of vital importance. It is a source of livelihood for billions of people. It is all involved in various economic activities. In the long run, resources are under anthropogenic pressure. It is critical for Georgia, as a country distinguished by its maritime and freshwater, be able to comprehend these processes.

What is the Blue Economy, and how does it work? You'll get ten different answers if you ask this question to ten different people. According to the World Bank, the Blue Economy is the "sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem". (Bank, 2017)

The main goal of the paper is to study the current situation and potential within the Blue Economy and to analyze problematic issues in the world and in Georgia. The Blue Economy combines sectors such as coastal tourism, aquaculture, blue energy, blue biotechnology and seabed mining. For Georgia, as a Black Sea country rich in hydro resources, the implementation and introduction of the principles of the Blue Economy provides an opportunity for development. The first part of the paper raises a number of problems related to the conduct of the Blue Economy policy. The second part describes the experiences of various countries and the challenges facing in Georgia. Conclusions are made based on the analysis of the previous material. The Author's views / position and recommendations are given.

The ocean is vast, covering 140 million square miles (363 million square km), equivalent to approximately 72 percent of the earth's surface. More than 600 million people (around 10 percent of the world's population) live in coastal areas that are less than 10 meters above sea level. Nearly 2.4 billion people (about 40 per cent of the world's population) live within 100 km (60 miles) of the coast. Oceans, coastal and marine resources are very important for people living in coastal communities. (Nations, 2017)

The Blue Economy as a concept and Blue Economy as a strategy with defined and stated goals are still relatively new. The World Wide Fund for Nature (WWF) has created the document "Principles of Sustainable Blue Economy". The principles describe how all levels of government, both public and private, should govern a sustainable Blue Economy. The principles are in accordance with the United Nations Sustainable Development Goals; they are based on widely established business and organizational sustainable governance principles, and they are related to both green and circular economies. (Nature, 2020)

The Blue Economy strategy protects and conserves maritime resources, biodiversity, and ecosystems. Requires the use of renewable energy and clean technologies. Includes areas such as fisheries, maritime transport, waste management, marine renewable energy, tourism and climate change. One of the most important elements of current world economic and industrial processes is the increased concentration of people and output in coastal areas. Coastal regions of the sea are quickly increasing as a result of the strengthening of international economic relations and the usage of the economic advantages of maritime transportation. The reality is that, as a result of community growth, the utilization of water resources in commercial activities is increasing.

When we examine the history of the development of individual civilizations, we may see elements such as the presence of water resources and closeness to the sea. For example, we can cite

the ancient Egyptians, the Scandinavians, the initiators of great geographical discoveries and more. Civilizations have relied on the blue economy for centuries. The term "Blue Economy" was first used in 1994 by Gunther Pauli in his book "Blue Economy 3.0". In the paper, he urges people and states to embark on new economic initiatives to change approaches to solving water problems.

The purpose of the article. Thesis raises some problems which are related to the implementation of the Blue Economy policy. It describes resources of Georgia and mentions already implemented events. Paper is based on the references, reports, articles, journals and action plans published by the European Union, the World Bank, and the Food and Agriculture Organization of the United Nations. The main result of the thesis is to analyze the peculiarities and problematic issues of the Blue Economy.

Results and discussions. In the future, the growth of the Blue Economy will be due to the increase in demand for marine goods and services, the scale of use of renewable resources and trade, as well as an indirect contribution to the development of other sectors of the economy. According to various estimates, many ocean-based industries will have the potential to exceed the global economic growth rate by early 2030 and the value added created in the sector will reach $ 3 trillion. (Union, 2019)

The Blue Economy is a novel idea that will be implemented on the European continent after the 2012 United Nations Conference on Sustainable Development in Rio de Janeiro. The term's definition is also dependent on diverse points of view, albeit it mostly depends on the World Bank's definition.

EU policy in this area covers a wide variety of developing sectors. Sectors that produce jobs and have a high pace of innovation are given special attention. Specifically, coastal tourism, aquaculture, blue energy, blue biotechnologies and seabed mining. Coastal tourism is characterized by a high rate of employment, which is also characterized by a positive increase in value added. The blue economy of the European region employs more than 4 million people, accounting for 1.8% of the EU's total employment and 1.3% of GDP. (Bank, 2017)

One of the most comprehensive sources of data on the European continent in the field of Blue Economics is the EU Copernicus program (www.copernicus.eu). A special center was set up with the help of satellite systems. It provides maritime data free of charge to citizens, local and international organizations in real time. Operates since 2008. It is possible to view not only current data, but also forecast and data archives. Posts such information as salinity, temperature, currents, sea level changes, various substances and oxygen content, and more.

For instance, at the international level we can use AQUASTAT. It is the FAO global information system on water resources and agricultural water management. It collects, analyses and provides free access to over 180 variables and indicators by country from 1960. AQUASTAT plays a key role in the monitoring of the Sustainable Development Goal 6. One of the innovations in this field is the application FishStatJ - Software for Fishery and Aquaculture Statistical. FishStatJ is a Windows and Mac application that anyone can use to access FAO's Fisheries and Aquaculture statistics. (FAO, 2021)

The available data in the direction of the Blue Economy can be obtained in different ways, among them we can single out the indexes of international organizations, the databases and research reports of various scientific research organizations, and the data of the national statistics services of

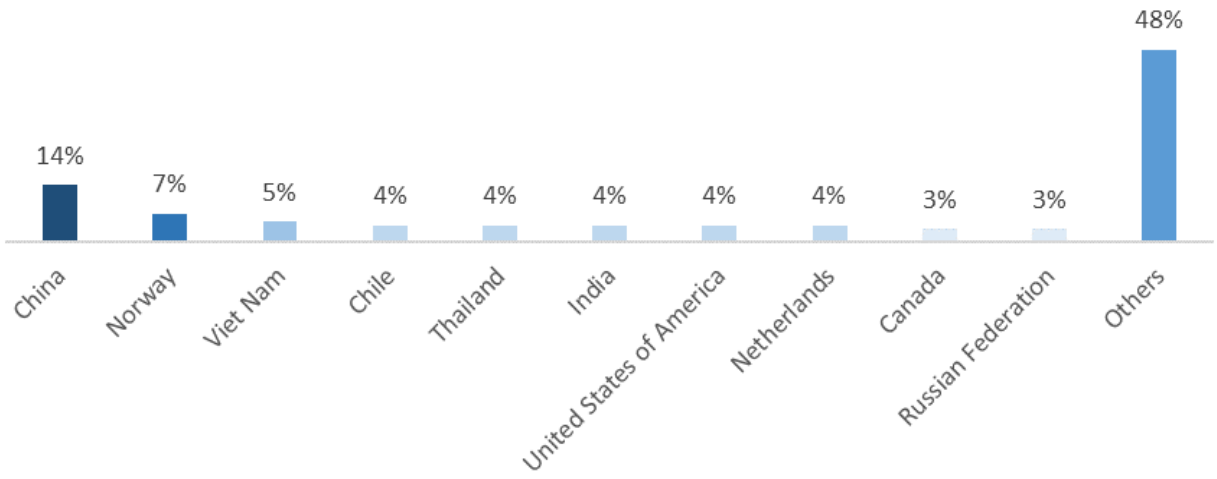
individual countries. National Statistical Offices are investing more and more in infrastructure projects, especially in improving digital data. New technologies make data more accessible, which is more useful for analysis.

Most of the world's fishing volume, almost 90%, is produced in Asia. Aquaculture has one of the lowest employment rates in the Blue Economy, but is the largest economic sector in terms of cost of sales (51%). In this regard, the coastal regions of China make a significant contribution to the national economy. The Chinese coast covers 20% of China's area, where 40% of the population lives and produces 60% of GDP.

The maritime economy is regulated by a national five-year plan. China pays special attention to marine ecology and environment. For the Blue Economy, China has a well-organized and standardized accounting system. In 2006, the Ocean Economy Accounting System (OEAS) was founded. China uses special industry classifiers for ocean industry and related activities, they are assigned unique codes. China is the world's largest exporter of seafood. The share of aquaculture in China's fish industry is growing steadily. (FAO, 2020)

Figure 1.

Top Exporters of Fish & Fish Products in Terms of Value, 2018



The figure was constructed by the author based on FAOSTAT data.

The Black Sea is the most inland European sea isolated from the world's ocean. Its area is about 422 thousand sq. Km. Six countries have access to the Black Sea - Bulgaria, Romania, Russia, Ukraine, Georgia and Turkey. It can be said that these countries have common interests (except Russia) in the issues of integration into Euro-Atlantic structures, security and the development of a common economic space. The Black Sea is classified as one of the world's most polluted seas. The condition of its ecosystems has recently deteriorated. The need for care for its health has increased. In this process, the importance of international collaboration should be highlighted. The Black Sea Protection Convention (also known as the Bucharest Convention) was founded in 1994 to safeguard the ecosystems of the Black Sea basin. Since 1992, Georgia has belonged to the Black Sea Economic Cooperation (BSEC) (entered into force in 1999). The

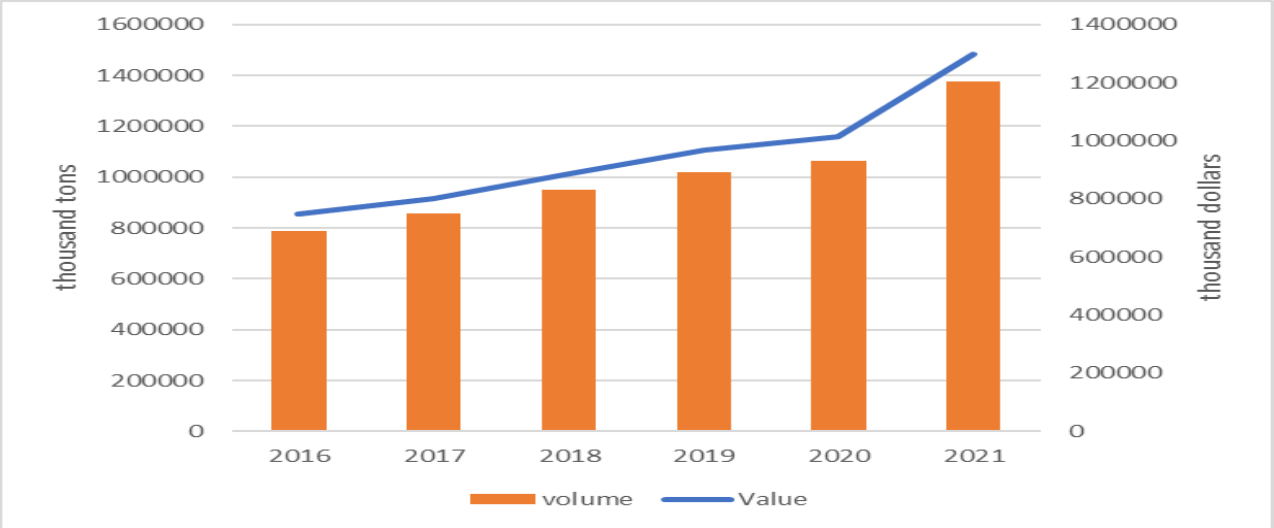
organization's mission is to assist political and economic efforts while also encouraging member integration.

In the Black Sea area, Turkey stands out for its dedication to Blue Economy principles. TUDAV (www.tudav.org/en) is a Turkish marine research foundation that was founded in 1996. The main reason for the creation was the study of fish migration processes and biodiversity. A necessary condition for the development of the cruise and coastal tourism or fishing sector is the protection of the sea from pollution. (Kahveci, 2019)

Fish and seafood production has been increasing in Turkey since the 1980s. Since 2000, transformations have started in this sector. During the development stage, the involvement of the private and government sectors was high. The rate of integration of Turkey into international markets has also increased. In 2019, aquaculture accounted for 69% of Turkey's total aquaculture production. The sector is proud of its continued compliance with international standards. In 2020, the value of exported products exceeded one billion US dollars. From 2016 to 2021, Turkey's seafood exports have increased by almost 70%. (FAO, 2020)

Figure 2.

Value and volume of fish and seafood exports (2016-2021)



The figure was constructed by the author based on TURKSTAT data.

We can distinguish some facts that describe the reality of the Blue Economy in Georgia. Within the territory of Georgia, a 320 km long stretch of coast is located in the southeastern and eastern part of the Black Sea. Since 1991, the difficult socio-economic situation, lack of financial resources, inflexible banking and credit policy, as well as the loss of the consumer market of the former Soviet republics have had a negative impact on the Georgian economy, including the fish and seafood market.

In Georgia, the demand for seafood is rising in line with the global trend. Especially the problem of providing products during the tourist season, when the local demand is supplemented by

the demand of tourists for seafood. Experts in the field note that the consumption of fish in Georgia throughout the year is about 30,000 tons and 90-95% of it is imported. Most of the local consumption is met by imported fish. According to the data of the National Statistics Service, local production is able to satisfy only 10-15% of the total consumption. Norway and Turkey are the main importers in the Georgian seafood market.

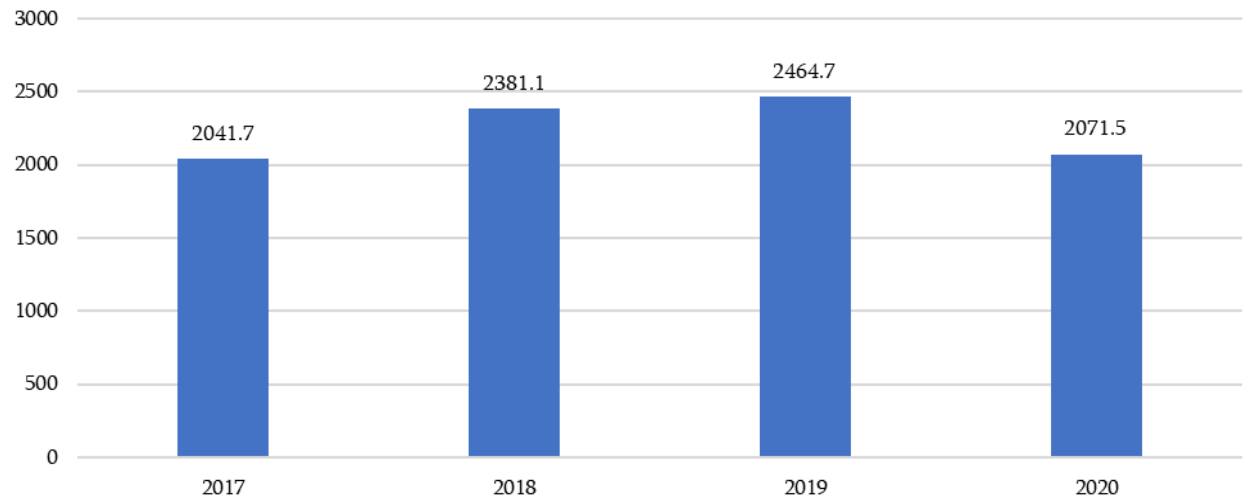
In contrast to this Georgia does not have a single registered fishing vessel (there are only a few licensees), therefore the number of fish caught cannot be accurately monitored.

Tourism is considered to be one of the most promising and rapidly developing sectors of the economy in Georgia. This is clearly evidenced by the increase in the number of tourists, recreational locations and types (especially maritime tourism). In parallel with these facts, we have a picture in which the number of international tourists entering the country of marine tourism via the port is 1.01%. Maritime transportation is one of the most important aspects of the Blue Economy (cruise direction). Today, there is no cruise on the Black Sea coast that includes Georgian resorts.

Statistical information about aquaculture is scarce in terms of content and variety of data. According to the data of 2020, the area of tanks intended for aquaculture reached 2,448.1 hectares, which is 1.0% more than the previous year. The area of ponds increased by 1.4% compared to the previous period and was defined as 28.3 hectares. The largest part of the ponds is located in Shida Kartli. (GEOSTAT, 2021)

Figure 3.

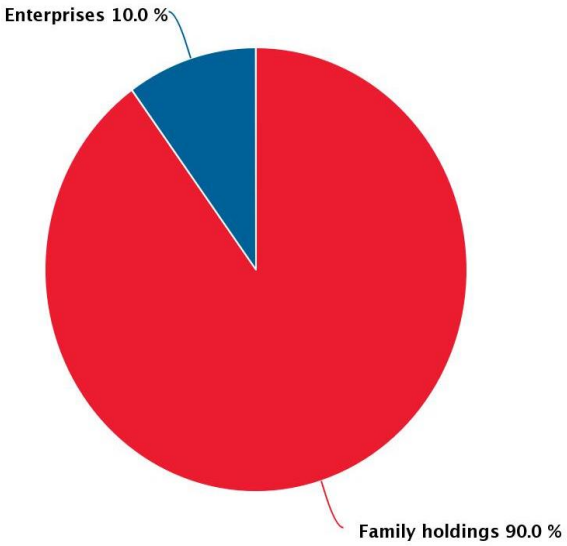
Volume of fish produced in aquaculture farms (tons)



The figure was constructed by the author based on GEOSTAT data.

Figure 4.

Distribution of aquaculture holdings by legal status (%), 2021



Source: GEOSTAT

Should be considered a step forward in the direction of blue investments in Georgia opening of a fish processing plant in 2017 by the company Umali (a beneficiary of the co-financing program for agricultural products processing and storage enterprises). The firm sells up to 70 different products of fish to the Georgian market. 100% of the manufactured products are intended for the domestic market. They plan to completely replace the caviar imported from Russia. A total of $ 1500,000 was invested in the project. It is the first Georgian fish and seafood producer in Georgia and the largest fish processing plant in the Caucasus.

By the end of 2019, the state initiative " Enterprise Georgia" has added a new direction – fishing. Under the program, the state will co-finance and assist in the development of this sector, which is reflected in the loan co-financing (for a period of 2 years and in the amount of GEL 150,000 to GEL 5 million) and ship leasing from GEL 100 thousand to GEL 5 million. Expected results are industry development, fleet upgrades, introduction of modern technologies, as well as an increase in fish species production and an increase in sales geography, which is uniquely related to the creation of new jobs.

Conclusions. Thus, the Blue Economy and its implementation / introduction as an active economic policy is a challenge for the whole world, including Georgia. Discussions, workshops and action plans (economic steps, environmental measures, innovative approaches, legislative support) are currently underway to perfect the concept of an inclusive, circular Blue Economy for both developed and developing countries in the context of sustainable development. The coastline of the Black Sea has the potential to develop marine aquaculture. There are no indicators of the effectiveness of the Blue Economy worldwide that describe the impact of both direct consequences and indirect benefits (social, environmental, etc.). There is a constant conversation about the problems in the field with the farmers and stakeholders involved in this activity. The development

of the sector requires quite a lot of financial and human capital. Considering the current economic situation and social background in the country, it is necessary to seek foreign investments. Cooperation at the regional level occupies a key place in this process. The fact is that aquaculture is developing at a slow pace because the problems are the same for years. Recently, these problems have been exacerbated by the obstacles caused by the Covid-19 pandemic. The ocean, the sea, and water resources in general are the key drivers of the Blue Economy. That is why it is critical to protect water resources and to establish a comprehensive monitoring mechanism. This will be the true foundation for a long-term policy.

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