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ОГРАНИЧЕННОСТЬ РЕСУРСОВ КАК ОСНОВНАЯ ПРОБЛЕМА ЭКОНОМИКИ

Аннотация: ресурсы являются фундаментальными активами, которые необходимы для функционирования любой современной экономики. Поскольку население, экономика и технологии продолжают расти, спрос на ресурсы продолжает расти. К сожалению, реальность такова, что ресурсы конечны и ограничены, а потребности кажутся бесконечными. Это создало ситуацию, когда нехватка ресурсов стала серьезной социальной проблемой в современном мире. Существует потребность в разработке и внедрении новых технологий и методов для преодоления дефицита ресурсов и удовлетворения неограниченных потребностей.

Ключевые слова: ограниченные ресурсы, экономика.

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LIMITED RESOURCES AS THE MAIN PROBLEM OF THE ECONOMY

Abstract: resources are the fundamental assets that are essential for the functioning of any modern economy. As populations, economies, and technology continue to grow, the demand for resources continues to increase. Unfortunately, the reality is that resources are finite and limited, while the demands are seemingly endless. This has created a situation where resource scarcity has become a major challenge and social issue in today's world. There is requirement for the development and introduction of new technologies and methods to overcome the scarcity and fulfil the unlimited needs.

Key words: limited resources, economy.

Resource scarcity is a situation where the demand for resources is greater than the available supply. This can be caused by a variety of factors, including environmental, economic, political, and technological. In essence, resource scarcity can be thought of as a supply and demand issue, where the demand for resources is greater than the available supply. When resources become scarce, the cost of those resources can increase significantly. This can create a situation where only those with the means to pay for the resources can access them, leading to economic inequality. It can also create a situation where resources are used inefficiently, leading to a waste of

resources that could have been better utilised.

Resource scarcity can manifest in a variety of ways. Common types of resource scarcity include water scarcity, energy scarcity, land scarcity, food scarcity, and mineral scarcity. Each of these types of resource scarcity has its own unique set of challenges and solutions [5,6].

Land scarcity is a situation where the demand for land exceeds the available supply. This can be caused by population growth, urbanisation, and inefficient land use. People concerned about availability of land might attempt to buy at any price, driving up prices and creating speculative inflation.

Mineral scarcity is a situation where the demand for minerals exceeds the available supply. This can be caused by a lack of access to minerals, high demand for certain minerals, and inefficient mineral extraction practices.

Water scarcity is a situation where the demand for water exceeds the available supply. This can be caused by drought, over-exploitation of water resources, and inefficient water use [1,7]. Energy scarcity is a situation where the demand for energy exceeds the available supply. This can be caused by a lack of access to renewable energy sources, inefficient energy use, and a lack of investment in energy infrastructure. Food scarcity is a situation where the demand for food exceeds the available supply. This can be caused by drought, over-fertilisation of land, and inefficient food production practices [8].

Table 1 shows the different regions of world with the most water scarcity and food insecurity [8]

Table 1 - Countries which are Hotspots of Water Scarcity & Food Insecurity in 2020

Water Scarcity	Food Insecurity
Bahrain	Central African Republic
Israel	Haiti
Kuwait	Rwanda
Palestine	Zambia
Qatar	Namibia
Singapore	Uganda
United Arab Emirates	Angola

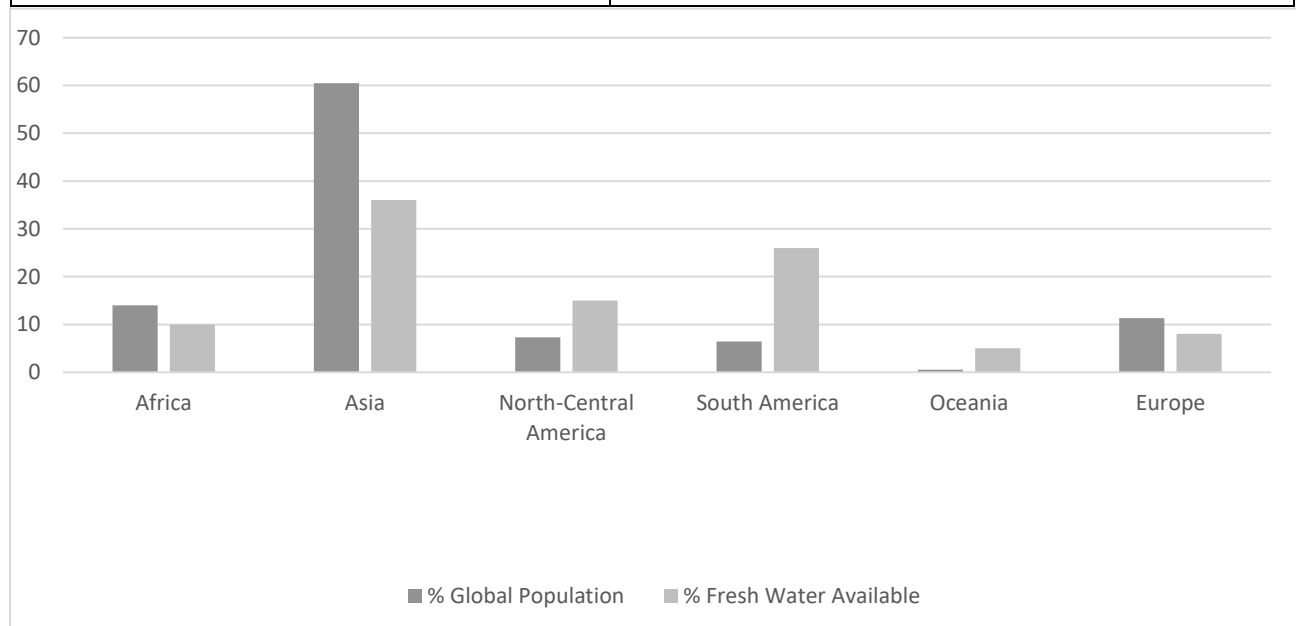


Figure 1 - Global Population and Fresh Water Availability by regions in 2021 [7]

The challenge of resource scarcity is that there is a finite amount of resources available, while the needs of individuals and society are seemingly endless. Resource scarcity will continue to cause critical and, to a certain extent, irreversible environmental damage [6].

The scarcity of resources raises a central moral problem concerning the distribution and allocation of natural resources. It can even lead to natural hazards, oil depletion, ozone depletion, greenhouse gas increase. This creates a situation where it is difficult to balance the needs of individuals and society with the limited resources

available. This can lead to unsustainable growth and a rise in inequality as prices rise making the resource less affordable for those who are least well-off [9,10]. Excessive demand often leads to conflicts due to intense competition.

Table 2 represents the number of countries which are facing resource scarcity on the basis of region and peacefulness [8].

Table 2 - Number of countries facing resource scarcity by region in 2020

Region	No. of countries
Sub-Saharan Africa	17
Middle East and North Africa	4
Russia and Eurasia	2
South Asia	2
Central America & Caribbean	1
Asia-Pacific	1
Europe	0

In order to balance resources and needs, it is important to understand the underlying causes of resource scarcity. This can include environmental, economic, political, and technological factors. By understanding the underlying causes of resource scarcity, it is possible to create solutions that can help to reduce or eliminate resource scarcity. It is also important to consider the economic impacts of resource scarcity.

The causes of resource scarcity can vary depending on the type of resource and the region in which it is located. Common causes of resource scarcity include environmental degradation, unsustainable resource extraction practices, population growth, and climate change [4].

Environmental degradation is a major cause of resource scarcity. This occurs when resources are over-exploited or used inefficiently, leading to a decrease in the available supply of resources. Unsustainable resource extraction practices, such as over-fishing and over-logging, can also lead to resource scarcity.

Population growth is another major cause of resource scarcity. As populations increase, so does the demand for resources. This can lead to a situation where the demand for resources exceeds the available supply. Climate change is another major cause of resource scarcity. This occurs when changes in the climate lead to a decrease in the available supply of resources, such as water or food [4].

The economic impacts of resource scarcity can be significant. When resources become scarce, the cost of those resources can increase significantly. This can create a situation where only those with the means to pay for the resources can access them, leading to economic inequality [4]. It also create a situation where resources are used inefficiently, leading to a waste of resources that could have been better utilised [10].

Resource scarcity can also lead to increased competition for resources, as those with the means to pay for the resources will outbid those without the means. This can lead to a situation where resources are allocated to those with the most economic power, rather than those who need them the most [3].

Resource scarcity can also lead to a decrease in economic growth, as the cost of resources increases and businesses are unable to access the resources they need to grow or expand. This can create a situation where businesses are unable to remain competitive in a global market, leading to a decrease in economic activity.

Fortunately, there are a variety of solutions that can be used to address resource scarcity. These solutions range from technological solutions, such as the development of renewable energy sources, to policy solutions, such as the implementation of resource conservation policies. Technological solutions can be used to increase the efficiency of resource extraction and use. This can lead to a decrease in the demand for resources and an increase in the available supply [2].

Policy solutions can also be used to reduce resource scarcity. This can include implementing resource conservation policies, such as bans on unsustainable resource extraction practices, or incentives for businesses to use resources more efficiently.

Education is another important solution for resource scarcity. Educating individuals and businesses on the importance of resource conservation and efficient resource use can lead to a decrease in the demand for resources, as well as an increase in the available supply [10].

Societies can deal with scarcity by increasing supply. The more goods and services available to all, the less scarcity there will be. Of course, increased supply is constrained by factors such as manufacturing capacity, available area for usage, time, and so on. Reduced desires is another method to deal with shortage. The fewer wants,

or demands, for non-essential products and services such as food and shelter, the less strain there will be on finite resources [3].

New technologies are being developed to address resource scarcity. These technologies range from renewable energy sources, such as solar and wind energy, to new methods of water purification and desalination. These technologies can help to reduce the demand for resources and increase the available supply [3].

In addition to new technologies, new policies and regulations can also be used to address resource scarcity. These policies and regulations can include bans on unsustainable resource extraction practices, incentives for businesses to use resources more efficiently, and increased investment in renewable energy sources. More than three-quarters (77%) of manufacturers consider minerals and metals scarcity as a serious supply chain risk to their businesses, according to a recent study conducted by PricewaterhouseCoopers. What's more, these manufacturers believe that only 39% of their customers share their concern [2].

According to Malcom Preston, global sustainability leader at PwC, "new business models will be key to the capacity to respond correctly to the dangers and possibilities provided by the shortage of minerals and metals" [2]. Metals on the "critical" list include beryllium, cobalt, tantalum, fluorspar and lithium. Manufacturers can use the checklist provided by PwC to prevent supply chain interruptions brought on by resource shortages:

1. Create a set of forward-looking leading risk indicators based on ongoing monitoring and evaluation of vital resources.

2. Recognise all the different types of risk -- physical, economic and geopolitical -- that can affect your supply chain and product portfolio.
3. Match risks to the proper corrective actions, such as inventory safety stock, dual sourcing, and resource substitution.
4. Utilize efficient processes throughout your supply chain to spot early danger indications and take appropriate action.
5. Consult with your suppliers and customers to investigate new business models to reduce resource scarcity risks.
6. Look for chances to integrate and sustain your supply chain inside your industrial sector.
7. Identify and promote the sustainability value of your products, and feed this back into product development.
8. Install cutting-edge process control systems to manage production in a way that minimizes the use of limited resources and reduces or eliminates waste.
9. To strengthen customer connections, consider efforts such as product life extension, take-back programs, and extended product accountability.
10. Develop effective lifecycle assessment and cradle-to-cradle strategies to minimize harmful impact and maximize benefits for any production process.

Resource scarcity is a major challenge and social issue in today's world. There is a finite amount of resources available, while the needs of individuals and society are seemingly endless. This creates a situation where it is difficult to balance the needs of individuals and society with the limited resources available [9].

Fortunately, there are several options available to overcome resource constraint. These answers span from technological to legislative, for example, the development of renewable energy sources. It is also important to consider the economic impacts of resource scarcity. When resources become scarce, the cost of those resources can increase significantly. This can create a situation where only those with the means to pay for the resources can access them, leading to economic inequality. It can also create a situation where resources are used inefficiently, leading to a waste of resources that could have been better utilised [4].

Resource scarcity is an issue that will continue to challenge us in the years to come. By understanding the underlying causes of resource scarcity, implementing solutions to reduce or eliminate resource scarcity, and understanding the economic impacts of resource scarcity, we can work towards a more sustainable future.

References

1. Felix Richter - Infographics Statista // <https://www.statista.com/chart/27274/water-stress-scarcity-current-situation/>
2. Jingyi Pan - S&P Global // <https://cutt.ly/d2DWlGZ>
3. McKinsey Global Institute, Richard Dobbs, Jeremy Oppenheim // <https://www.e-education.psu.edu/ba850/node/642>
4. Lionel Robbins. "The Nature and Significance of Economic Science," MacMillan // <https://www.investopedia.com/terms/s/scarcity.asp>

5. Siddiqui, A.S. (2021). Comprehensive Economics XII. Laxmi Publications Pvt Limited. ISBN 978-81-318-0368-4
6. Adel (2019). "Robbins and Malthus on Scarcity, Abundance, and Sufficiency". American Journal; doi:10.1111/ j.1536-7150.2010.00741.x. JSTOR 20788963
7. BK Mishra, P Kumar, C Saraswat, A Gautam; Water Security in Changing Environment (February 2021); <https://www.mdpi.com/2073-4441/13/4/490>
8. Vision of Dreams - Resource Scarcity: Which countries are most vulnerable? <https://shorturl.at/kt458>
9. Roux, Goldsmith, & Bonezzi, A. (2019). On the psychology of scarcity: When reminders of resource scarcity promote selfish (and generous) - Journal <https://academic.oup.com/jcr/article-abstract/42/4/615/2572271>
10. Shah, A. K. & Mullainathan(2020). Scarcity frames value Psychological Science <https://pubmed.ncbi.nlm.nih.gov/25676256/>