

## WAYS TO PREVENT NEGATIVE ECOLOGICAL CONSEQUENCES OF ECONOMIC GROWTH

Du Houqing<sup>1)</sup>, E. M. Karpenka<sup>2)</sup>

<sup>1)</sup> *Master Student, 1st course, Belarusian State University, Minsk, Belarus,  
511526019@qq.com*

<sup>2)</sup> *Scientific Adviser, Doctor of Economics, Professor, Head of the International  
Management Department, Belarusian State University, Minsk, Belarus,  
emkarpenko@mail.ru*

In the modern world, environmental protection measures are coming to the fore. The consequences of insufficient attention to the problem related to the environmental situation can be catastrophic for the entire planet. It is not only about the well-being of humanity, but also its survival. It is especially alarming that the deterioration of the natural environment may be irreversible. Water pollution damages human health and fish stocks. The decline of agriculture and the destruction of agricultural land leads to drought and soil erosion in many countries, including China.

**Keywords:** economic growth; ecosystem; negative ecological consequences.

## СПОСОБЫ ПРЕДОТВРАЩЕНИЯ ВЛИЯНИЯ НЕГАТИВНЫХ ЭКОЛОГИЧЕСКИХ ПОСЛЕДСТВИЙ НА ЭКОНОМИЧЕСКИЙ РОСТ

Ду Хоуцин<sup>1)</sup>, Е. М. Карпенко<sup>2)</sup>

<sup>1)</sup> *магистрант, Белорусский государственный университет, г. Минск, Беларусь,  
511526019@qq.com*

<sup>2)</sup> *научный руководитель, доктор экономических наук, профессор, заведующий  
кафедрой международного менеджмента, Белорусский государственный  
университет, г. Минск, Беларусь, emkarpenko@mail.ru*

В современном мире на первый план выходят меры по охране окружающей среды. Последствия недостаточного внимания к проблеме, связанной с экологической обстановкой, могут быть катастрофическими для всей планеты. Речь идет не только о благополучии человечества, но и о его выживании. Особую тревогу вызывает то, что ухудшение природной среды может быть необратимым. Загрязнение воды наносит ущерб здоровью людей и рыбным запасам. Упадок сельского хозяйства и уничтожение сельскохозяйственных угодий приводит к засухе и эрозии почвы во многих странах, в том числе в Китае.

**Ключевые слова:** экономический рост; экосистема; негативные экологические последствия.

*Introduction.* Economic growth is the most important part of economic development, with its help, the prospects for the development of both society and the state are determined. In turn, economic development undoubtedly leads to an increase in public goods, to the fight against existing problems, to greater satisfaction of people's needs, as well as to the stimulation of entrepreneurial and creative labor activity as a whole raises the state. By investing in the process of economic development, it is possible to put the state on the path of progressive growth and ensure security and stability within it.

Environmental pollution will cause direct damage to the ecosystem, such as desertification, deforestation and eutrophication of water bodies. It will also cause indirect harm to the ecosystem and human society. Sometimes the harm from this indirect impact on the environment is greater than the direct harm caused at that time, and it is more difficult to eliminate. For example, the greenhouse effect, acid rain and ozone depletion are environmental effects resulting from air pollution. This kind of environmental effect resulting from environmental pollution is delayed, and it is often not easy to detect or predict at the time of pollution occurrence. However, as soon as this happens, it means that environmental pollution has reached a very serious level. Of course, the most direct and easily felt consequence of environmental pollution is a decrease in the quality of the human environment and the impact on the quality of human life, physical health and industrial activity.

*Singapore.* Singapore is a tropical island nation with a population of 3.2 million. Like many developed countries, Singapore has paid an environmental price for economic development on the path of industrialization and has gone through a painful process. Singapore rapidly industrialized after independence in 1965, its economy developed rapidly and its population grew rapidly. However, along with economic growth, the environmental situation worsened due to the reduction of cultivated land, the growing shortage of water resources and increased air pollution. In response to the deterioration of the environmental situation, the Singapore Government has taken a number of measures to control the deterioration of the environment.

1) The Singapore Government has learned from the experience and lessons of urban construction in the process of industrialization of developed countries in Europe and the United States, introduced the concept of a “garden city” and put forward environmental goals such as “clean drinking water, fresh air, clean land, safe food, beautiful habitat”. and a low level of infectious diseases”, and to put forward new goals at a higher level at each subsequent stage of development.

2) Processing of resources and improving their use. The Singapore Government has established a full-time department to help producers and residents improve resource efficiency and reduce waste generation. Currently,

40 % of Singapore's industrial waste is recycled. Classification and recycling of household waste, introduced by the government, were implemented in one seventh of the residents. Garbage collectors regularly give out special plastic bags to residents and regularly recycle renewable garbage such as paper, old clothes and electrical components. Industrial wastewater must be treated in accordance with the standard before discharge, and the treated recycled water must be reused as industrial water.

3) The Environmental Pollution Control Act, which came into force in April 1994, is Singapore's main anti-pollution legislation covering the regulation of air, water and noise pollution, as well as the treatment of various hazardous substances. In order to reduce the content of sulfur dioxide, nitrogen dioxide and suspended particles inhaled by the human body in the air, Singapore is constantly strengthening the control of car exhaust gases. In 1996, it was stipulated that the sulfur content in diesel fuel should not exceed 0.3 %; In 1999, the standard was raised to 0.05 %; in 2000, strict chassis power smoke meter checks were introduced for all diesel-powered vehicles; in 2001, Singapore installed a vehicle exhaust control system on main roads and vehicles that did not meet the standards were banned.

4) The Environmental Pollution Control Act adopted by Singapore sets clear standards for the treatment and disposal of various types of waste, so that all engineering structures, industrial and commercial activities and daily life can be regulated by law. Singapore has also established appropriate specialized agencies to ensure that various construction and social activities do not cause uncontrolled health problems, safety issues and environmental pollution. Ads with the inscription «a fine of 1,000 Singapore crowns for garbage» can often be seen on buses in Singapore. Violators will receive a fine, and if they do not pay the fine on time, they will be called to court.

After tireless efforts, Singapore has restored the original ecological environment lost in the process of industrialization. Singapore's experience shows that reasonable laws, careful planning, strict enforcement and local management are a guarantee of a win-win situation between Singapore's economic development and the ecological environment, but economic development is a source of living water for creating and maintaining a beautiful environment. Improving people's lives. The cultural level and standard of living have also increased people's awareness of the need to maintain a beautiful environment [1].

*Australia.* Australia is a country that attaches great importance to environmental protection. The government and citizens have a strong sense of the ecological environment, and the government has played a very important role in protecting the environment.

1) Australia has established a robust environmental protection agency system. Australia was one of the first countries in the world to create a state department for environmental protection. Back in 1970, Victoria established the Environmental Protection Agency. Currently, there are special environmental protection agencies in Australia at three levels of the federal government, state government and local government. The federal government has a Ministry of Environment and Heritage, and state-level environmental protection agencies are more complex. Taking Victoria as an example, the Government has established the Department of Natural Resources and Environmental Protection, which includes the Bureau of Environmental Protection, the Bureau of Natural Resources and the Bureau of Environmental Waste Management.

2) Australia has sufficient manpower and resources. Australia's Federal Department of Environment and Heritage has 500 employees, and state environmental departments have more than 1,000 employees. In recent years, Australia's annual investment in environmental protection has exceeded \$88.5 billion, which is about 1.6 % of GDP. The Victorian Environmental Protection Agency has an annual budget of \$332 million, most of which comes from state government subsidies and some from sewer fees. Adequate human and financial investments create conditions for the Australian government to protect the environment.

3) Australian Governments at all levels coordinate and cooperate in the implementation of planning. Australia has a federal system. The federal and state governments mainly implement the national environmental development plan through consultation and cooperation, while the state and local governments mainly take direct intervention to ensure the implementation of the state environmental plan. Governments at all levels directly direct the actual environmental protection activities at the appropriate level, and most of the environmental protection work is carried out with the direct participation of the Government.

4) Australia continues to improve its legislation and strengthen enforcement practices in the field of environmental protection. Australia is one of the first countries in the world to introduce environmental protection laws. Back in 1970, Victoria formulated and promulgated the «Law on Environmental Protection». Currently, Australia has a very complete legal and regulatory system for environmental protection of the environment. At the federal level, there are more than 50 environmental protection laws, including comprehensive legislation such as the «Environmental Protection and Biodiversity Conservation Act»; there are also special legislation such as the «Great Barrier Reef Marine Park Act»; and more than 20 administrative regulations such as the «Clean Air Regulations», «Radiation Control Rules» and so on. At the state

level, each state has more than 100 laws and regulations related to environmental protection.

The provisions of Australian environmental laws and regulations are very detailed and very effective. Victoria's «Environmental Protection Fee Rules» contain more than 100 provisions, ranging from types, standards, units of measurement and formulas for calculating fees to the maximum allowable amount of wastewater discharge, the payment process and the reduction and reduction of fees. All of them are set out in great detail. Such rules are very effective, allowing to avoid arbitrariness of law enforcement agencies and reducing friction in the process of law enforcement.

Australian environmental legislation is very strict, reflecting the seriousness of laws and regulations. In Australia, whether it is an individual, a company or a government agency, as long as it violates environmental laws and regulations, it will be subject to serious investigation and punishment. In the famous Green Island Park of the Great Barrier Reef, tourists are not allowed to take any natural objects (including shells), and violators are subject to heavy fines. In north Queensland, two people have been sentenced to more than ten years in prison for cutting down more than 20 trees. In Victoria, the Environmental Protection Agency annually files lawsuits in the courts for 40-50 cases of environmental damage.

5) Australia mobilizes all people to participate in environmental protection

Australia encourages citizens to participate in environmental protection. The Australian Government attaches great importance to attracting citizens to participate in environmental protection through advertising, education and demonstrations. The promotion of Canberra's «Garbage-Free City» plan is based on the active participation of the majority of residents. Its goal is to stop dumping waste in 2010 and to recycle and dispose of all waste. At each stage of the plan's implementation, the relevant government agencies produced promotional materials and lectures to tell residents what to do. The Department of Environmental Protection has also opened an educational center for the "City without Garbage" program to provide residents with free knowledge and technologies for recycling and reuse of garbage, as well as to direct the majority of residents to consciously participate in this program.

Australia encourages companies to participate in the development of industries related to environmental protection. The Australian government has granted preferences to companies involved in environmental protection, in terms of taxes, equipment and to attract more companies to invest in the environmental protection industry. There are 70 to 80 companies in Canberra engaged in garbage collection, sorting and landfill disposal, which brings in more than \$10 million annually. The Government also collaborated with commercial enterprises in the implementation of the Environmental Business

plan, designed to encourage commercial enterprises to reduce the consumption of water, electricity, steam and other resources [2].

Ways of developed domestic cities to prevent negative environmental consequences of economic growth

*Dalian.* Dalian City, Liaoning Province, 10 years ago was a city of heavy chemical industry. In just 10 years, it has achieved rapid economic development through environmental management and improvement, and has contributed to further environmental improvement through rapid economic development, making Dalian the only city in China included in the list of the 500 best cities in the world for environmental protection.

1) Dalian insists on proceeding from the real situation in the city and correctly regulating the relationship between urban construction and environmental protection, so that environmental management always complies with the principle of harmony between man and nature and strictly complies with environmental laws.

2) The Dalian Municipal Government believes that the environment is very important. The value of a city with a good environment should be increased, while the value of a city with a bad environment should be reduced. In the process of economic development, we cannot blindly strive for GDP growth. It is necessary to take into account environmental factors, and we must proceed from the real situation and clarify the ideas of urban construction and development. Since 1993, the Dalian Municipal Government has carefully summarized the experience and lessons of many urban development projects at home and abroad and adopted the idea that environmental problems are also economic problems.

3) Early investments in environmental protection have the characteristics of large investments and a long payback period of capital, but in terms of the ratio of income to investment funds, income from environmental protection has the characteristics of small investments and high income. Dalian was not exchanged for temporary economic benefits at the expense of the environment, but developed in protection and protected in development. Dalian's GDP has been growing by double digits for many years, but the environment has not deteriorated as a result. Since 1992, Dalian's investment in urban environmental construction has reached more than 10 billion yuan, and more than 300 environmental infrastructure projects and key pollution control projects have been completed. After many years of environmental management and reclamation, by the end of 2020, the area of public green spaces per capita in the city will reach 8.5 square meters, the level of urban greening will reach 40.5 %, the level of solid waste recycling will reach 90.3 %, and the level of compliance with the requirements of car exhaust gases will be 83 %. Dalian's excellent ecological environment has promoted economic development, promoted the progress of social civilization, and increased the

competitiveness of the city. According to the calculations of the relevant departments, the cost-output ratio in Dalian in the field of environmental protection and construction is 1:5. Dalian receives the greatest economic and environmental benefits with the least investment in environmental protection and implements a «win-win» balance between economic development and the environmental environment [3].

Dalian has proven in practice that the improvement of the environment in Dalian is combined with rapid economic development. Environmental benefits can stimulate economic development. At the same time, economic development also strongly contributes to ecological construction. These two factors interact and promote each other.

*Qingdao.* Qingdao City is located on the southwestern tip of the Shandong Peninsula, overlooking the Yellow Sea to the east and the interior of the country to the west. It has a total area of 10,654 square kilometers and a population of more than 6.7 million people. It is a famous coastal open city and the economic center of China.

Qingdao considers ecology as a special point of productivity and economic growth. After almost 20 years of relentless efforts, Qingdao has not only maintained steady economic growth and become an important economic center in the north of China, but also thanks to the structural restructuring of the economy, increased efforts to protect the environment and the construction of the old industrial city, which was originally dominated by textile, rubber and chemical industries, has become a national model city for environmental protection Wednesday. Judging by the practice of Qingdao, improving the quality of the environment can bring many economic and social benefits, making the environment a special productivity and economic growth point for urban development. The experience of environmental protection of Qingdao is summarized in the following paragraphs:

- 1) The Qingdao Municipal Government provides financial and political support to key polluting industrial enterprises to accelerate their management; the Qingdao Municipal Government, in combination with the adjustment of the industrial product structure and industrial layout, resolutely punishes and closes polluting organizations that fail to meet the standards within the prescribed time limit in accordance with the law. The Qingdao Municipal Government intends to abandon products with high energy consumption, high pollution and low added value and make every effort to promote environmentally friendly production; the Qingdao Municipal Government is vigorously developing industries with low energy consumption, light pollution and good development prospects, such as electronics and household appliances.

- 2) The Qingdao Municipal Government has increased its capital investments and has consistently built and commissioned 9 municipal

wastewater treatment plants. In 2020, the city's centralized wastewater treatment capacity reached 90.99 million tons, and the level of centralized domestic wastewater treatment reached 52.5 %. The Qingdao Municipal Government has implemented a special management of the public transport order to reduce automobile exhaust and noise pollution. Starting from their respective functions, all departments at all levels of Qingdao City have vigorously strengthened environmental protection. The Qingdao Municipal Government has consistently greened and landscaped the expressway and 765 roads in the city, as well as increased the construction of public green areas. By the end of 2020, the level of greening of built-up areas has reached 47%, and the public green zone per capita has reached 8 square meters.

3) Various media outlets in Qingdao have done a lot of reporting on best practices and experiences in the field of environmental protection, as well as exposed and criticized acts of environmental destruction, forming a strong atmosphere of public opinion «environmental protection, everyone is responsible», as well as environmental awareness and participation of all segments of society and the general public. We're not higher, laying a good foundation for environmental protection work.

Practice has shown that the adoption by the Qingdao Municipal Government of the decision to integrate environmental protection into economic development not only protected the environment, reduced pollution, contributed to improving the appearance of the city, but also contributed to attracting investment and active tourism development, and also contributed to the coordinated development of economic development and the ecological environment.

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