SOLUTIONS OF SCIENCE AND TECHNOLOGY RESOURCES IN ECONOMIC DEVELOPMENT IN VIETNAM TODAY

Dr. Le Thi Hanh
Ho Chi Minh National Academy of Politics
Gmail: Hanhtaichinh78@gmail.com

Abstract: *For Vietnam, economic development is the foundation, the basis for us to quickly realize the goals of socialism that are rich people, strong country, democracy and justice, civilized. In order to promote rapid and sustainable economic development, maintain a high economic growth rate, etc., it is necessary to exploit, use, and combine resources well. Recognizing the great role of science and technology resources in economic development, in recent years our Party and State have always focused on the exploitation and use of these resources. Therefore, studying the current state of science and technology in economic development in Vietnam in order to propose solutions to promote the development of science and technology to meet new requirements is necessary and necessary. has practical meaning.*

Keywords: Solutions, Resources, science and technology, economic development, Vietnam

1. Introduction

Among the resources serving the economic development of each country, science and technology resources are one of the resources that play an extremely important role. One of the strategic breakthroughs of our Party is in science and technology, the document of the 13th National Party Congress clearly defines: "Strongly develop science and technology, innovate to create and transform digital transformation to create breakthroughs in productivity, quality, efficiency and competitiveness"[1], "Continuing to consistently implement the policy that science and technology are the leading national policy and the key driving force for the development of a modern production force, innovating the growth model, and improving productivity, quality and efficiency efficiency and competitiveness of the economy"[2]. However, in reality, scientific and technological resources have not really contributed much to the development and economic growth in our country today. Therefore, studying the current state of science and technology in economic development in Vietnam in order to propose solutions to promote the development of

[1] Communist Party of Vietnam (2021), Documents of the 13th National Congress of Deputies, Volume 1, National Political Publishing House Truth, pp. 221
[2] Communist Party of Vietnam (2021), Documents of the 13th National Congress of Deputies, Volume 1, National Political Publishing House Truth, pp. 140

science and technology to meet new requirements is necessary and necessary has practical meaning.

2. Method

The paper uses methods of information collection, document research, analysis and synthesis of theory, summarizing practical experience to evaluate, generalize and make its own comments.

3. Results

3.1. Concept of science and technology

Science has its origins in man's struggle with the natural world, first of all in the practice of producing material wealth, giving man control over his life. Science is closely related to the development history of human society. Science is a collection of perceptions, understandings, thinking and discovering knowledge systems about phenomena, things, laws of nature and society.

Science is divided into two groups:

- Natural science, studying natural things, phenomena and processes, discovering natural laws, determining methods of conquering and renovating nature;
- Social science studies the phenomena, processes and laws of social movement and development, as a basis for promoting social progress and human development.

Concepts and components of technology

In the most general sense, technology is a set of methods, processes, skills, know-how, tools and means to transform resources into desired products or services for social life. festival.

There are four elements that make up technology: technology, people, organization, and information. In which, the technical element is the "core" or hardware part of the technology. In essence, technology is understood as the totality of physical conditions including machines, equipment, tools, factories, created by humans. The human factor has the level of knowledge and ability to operate technology. The organizational element that arranges, arranges, dispatches, manages and operates the technological process and information element is the coded know-how, process, method, data, blueprint... forming technology. The elements of technology all have their own position and role, indispensable for technology.

3. 2. The role of science and technology in economic development

Science and Technology have a great impact in the innovation of products and production processes. As a result, the production scale and productivity of equipment and machinery increased. Science and Technology on the one hand helps to stimulate demand, increase supply and then increase average income, effectively improving

people's living standards. The document of the 13th National Party Congress clearly states: "Strong development of science and technology, innovation and digital transformation is the main driving force of economic growth"[3].

Science and technology promote economic restructuring towards progress. Among the factors affecting economic restructuring, science and technology play a particularly important role, always changing the economic structure production structure, division of labor deepened and divided into small branches. Create many new professions, many new fields. The structure within the industry has also changed. When changing production in the direction of increasing productivity and efficiency, it will create the possibility of changing consumption structure due to increased income. The share and position of GDP of industry and services gradually increase, agriculture gradually decreases. Science - technology contributes to increasing the productivity of synthetic factors, thanks to the impact of factors such as technological innovation, rationalization of production processes, service provision, improvement of management methods, improvement of qualifications and working skills of employees, increasing total factor productivity (TFP) will improve and enhance growth quality, thereby contributing to the transformation of economic growth model in depth. In developed countries, the contribution of TFP to GDP growth is usually very high, over 50%; with developing countries about 20-30%.

Science and technology improve the competitiveness of products businesses and the economy a country with scientific and technological potential will be a country with high international competitiveness. Technology innovation capacity is one of the basic criteria to rank the competitiveness of that country. The application of scientific and technological advances has made the input factors, especially the synthetic ones, enhanced and more effective, the production and consumption scale expanded, creating a market new, export-oriented, increasing competitiveness in international and regional markets.

In a market economy, the goal and driving force of business is profit. Therefore, businesses always aim to reduce costs, lower product costs are forced to apply scientific and technological advances, which will improve product quality, improve employee productivity, and reduce costs costs, creating competitive advantages not only in the domestic market but also in the foreign market, thereby improving or otherwise maximizing profits. Science - technology improves the material and spiritual life of people, science - technology develops creates many new professions, creates many new jobs, especially increases labor productivity, thereby increasing labor productivity income and improve people's living standards. The development of biotechnology and chemistry has produced many new drugs many

[3] Communist Party of Vietnam (2021), Documents of the 13th National Congress of Deputies, Volume 1, National Political Publishing House Truth, pp. 227

modern medical facilities have opened up many new ways of treating diseases, creating better health care conditions. The development of science and technology also contributes to increasing social exchanges, making people's spiritual lives richer and better. The development of electronic technology, informatics and telecommunications has shortened the geographical distance between countries and regions.

The development of science and technology contributes to and facilitates the improvement of the ecological environment production and human consumption continuously develop, so waste is constantly increasing, causing harm to people and the environment. Ecological. Developing and applying biotechnology and chemistry of treated wastes, improving and contributing to environmental protection. Science and technology development also contributes to saving raw materials and fuel consumption, reducing waste, finding new energy sources and materials to replace traditional resources without polluting the environment; science and technology to detect and forecast natural disasters for prevention. However, the impact of science and technology also causes negative effects on economic development such as increasing and disparity between rich and poor between countries, many countries monopolize advances in science and technology.

3.3. The current state of science and technology in Vietnam's economic development today

3.3.1. Achievement

In order to promote sustainable economic growth, the Party and State pay great attention to the investment and development of scientific and technological resources.

After nearly 35 years of innovation, our country's science and technology has made positive changes with many achievements in research and investigation, contributing to creating a scientific basis for the formulation of development strategies and planning socio-economic, environmental protection. Science and technology are closely related to production and life, contributing to improving productivity, quality and efficiency of all industries and fields.

Science and technology have clearly shown their role as an important resource in the economic development of the country. In the period of 2015 - 2020, labor productivity is increased, reflected in the TFP composite factor productivity index (increasing from 33.6% in the period 2011 - 2015 to 44.46% in the period 2016 - 2019), the proportion of export value of high-tech products in the total value of exported goods will reach 50% by 2020.

The role of business in the chain of research and innovation activities is becoming increasingly important. The technology market has been promoted, with 15 technology exchanges, 50 technology incubators, 186 industrial property representative organizations and a network of centers for application and transfer of

science and technology advances in the world. nationwide. The contributions of science and technology are also reflected in the continuous increase of Vietnam's innovation index. In 2017, it increased by 12 places, in 2018 it increased by 2 places, in 2019 it increased by 3 places, ranking 42nd out of 129 countries, bringing Vietnam to the top of the group of 26 low-middle-income countries and third in ASEAN. Vietnam's Innovation Index (GII) in 2020 ranks 42nd out of 131 countries and territories - leading the group of countries with the same income level and third in ASEAN after Singapore and Malaysia.[4] In addition, the scientific and technological management mechanism has been gradually innovated in line with reality. The level of awareness and application of science and technology of the whole society is increasingly being improved.

Statistics show that investment in science - technology in recent years has accounted for 2% of total budget expenditure[5]. In addition, the State also promotes scientific cooperation with other countries, territories and international organizations, becomes a member of the Patent Cooperation Treaty, opens up relations with other countries. on cooperation and transfer of science and technology with 138 member countries of this organization. Thanks to great investment and the right guidelines and policies in science and technology development, science and technology resources in our country have been gradually enhanced.

Infrastructure for science and technology development is more and more complete and modern. High-tech centers have been formed, many laboratories with modern machinery and equipment are on par with some countries in the region and internationally;

The scientific and technological management mechanism has been gradually renewed in line with the reality of market economy development. Human resources in science and technology are constantly being improved in both quantity and quality. According to statistics from the Ministry of Science and Technology, there are currently 167,746 people participating in research and development activities nationwide. In which, the number of people participating in research and development activities in the state sector is 141,084 people (accounting for 84.1%), the non-state sector: 23,183 people (13.8%), the capital investment sector foreign investment: 3,479 people (2.1%). In particular, the number of doctoral degrees: 14,376 people, masters: 51,128 people, university: 60,719 people[6].

[4] Bich Lien (2021), "Developing human resources in science and technology to bring the country to a breakthrough", Communist Party e-Journal, April

[5] Vu Tuan Hung, The role of science and technology development investment in economic growth, according to http://tapchitaichinh.vn, updated on July 16, 2016.

[6] Science and technology human resources: Innovation in quantity and quality, http://baocongthuong.com.vn/nhan-luc-khoa-hoc-va-cong-nghe-doi-moi-luong-va-chat.html

Science and technology are increasingly making great contributions to the goal of sustainable economic growth in our country today in the direction of: Scientific and technological research results are increasingly rich, creative, can direct application to production processes in order to increase labor productivity, labor quality and product value; Science and technology have been promoting the process of rational economic restructuring, progress towards industrialization and modernization, and deepening the social division of labor in our country. ; Science and technology has developed and is becoming a direct productive force, which is the basis for raising the level of human resources, contributing to promoting the birth and development of the knowledge economy... Scientific and technological achievements also create a solid basis for us to exploit and use more effectively natural resources, contributing to the shift of economic structure towards an increasingly modern direction chemical.

3.3.2 Limitations

Although many achievements have been achieved, the investment in development and use of scientific and technological resources for economic development in our country currently has many limitations and inadequacies. Specifically:

The issue of investment in science and technology has not been really focused, especially investment in scientific projects with conditions for research and direct application to manufacturing industries. While countries in the region have a high proportion of investment in science and technology in production, Vietnam's investment level is still quite modest.

Firstly, human resources in science and technology have increased in both quantity and quality, but in general have not met the requirements of economic development. There is a shortage of good scientific and technological staff, leading the group, especially the adjacent staff with high qualifications. The training, recruitment, employment, and remuneration for scientific researchers, especially experts, still have many limitations.

Secondly, scientific and technological development has not been linked with the requirements of practice. The appropriate motivation and mechanism has not been created to link science and technology with production and life. Lack of close links between research institutes, universities and businesses. Many current research topics have not come from the requirements of practice, so they do not have high applicability. There is no support policy to ensure risk compensation in research and application of research results, so it has somewhat limited participation in application testing.

Thirdly, the orientation and concentration of research potential and solving major problems in science and technology applied to industries and economic fields

have not yet achieved the expected results; specific policies, strong solutions in science and technology to create breakthroughs in industrial fields in which Vietnam has advantages are not clear; the key fields of science and technology, reaching an advanced level, able to compete equally with the region and the world have not yet been formed… There are no effective measures to apply the achievements of science science and technology to overcome the consequences of the production process leading to serious environmental pollution that directly affects the health and life of the people and the sustainability of the economic growth process...

Fourth, the process of technology transfer in the country is still narrow and not diversified. In general, technology transfer activities between institutes, universities and research institutions for enterprises are limited, local, narrow in scope, spontaneous, lack of intermediary service agencies to broker contracts for development technology disclosure, the link between technology buyers and sellers. The technology transfer between domestic enterprises is still small, the scale is small, the content of technology transfer is often incomplete and the form of transfer is still simple[7]. The process of technology transfer from abroad to Vietnam is the lowest, especially for modern technologies. According to a report of the Ministry of Science and Technology, in the period 2006-2016, the results of the investigation into the status of technology transfer in Vietnam have taken place but are still at a "slow" level, not as expected to contribute to promote socio-economic development in the country. Technology transfer activities in Vietnam have not achieved the desired results, which is reflected in the "limited" rate of research results put into practice, the number and value of contracts technology transfer is still small, not many businesses pay attention and invest in research and technology transfer activities[8].

Fifth, the management mechanism of science and technology, although innovative, is still slow and not fundamental, so it is not really suitable with the market mechanism. The policy to promote the application of science and technology has not been effective to become a driving force for economic development...

In general, the exploitation, use and promotion of scientific and technological resources in the process of economic development and growth in our country currently do not meet the requirements set forth. At present, domestic production is still largely based on the exploitation of natural resources rather than the application of scientific and technological achievements to production and business. This has seriously affected the sustainability of economic growth.

[7] See Pham Trung Hai, Situation and solutions for technology transfer in Vietnam, according to http://tapchitaichinh.vn/nghien-cuu-trao-doi/thuc-trang-va-giai-phap-chuyen-Giao-cong -listen-o-viet-nam-114233.html, updated on 31/05/2017.

[8] See Thu Ha, State of technology transfer in Vietnam, according to https://baomoi.com/thuc-trang-chuyen-Giao-cong-nguyen-tai-viet-nam/c/23084069.epi, updated date 22/08/2017.

3.4. Solutions to promote science and technology development to meet the requirements of economic development in Vietnam today

In order to overcome the limitations in investment, development and use of scientific and technological resources as mentioned above, and at the same time continue to strengthen these resources to serve the process of rapid and sustainable economic development in Vietnam. In our country today, we need to synchronously implement some basic solutions as follows:

Firstly, continue to improve and promote the development of the science and technology market. Specifically: developing scientific and technological market institutional elements; perfecting and building a legal system related to the operation of the science - technology market; development of science and technology services…

Second, step up the mobilization of investment capital for science and technology development. Capital is an important resource for science and technology development. In order to have capital for science and technology development, it is necessary to mobilize capital from the state budget, from enterprises of all economic sectors and from foreign funding. Deploy the establishment of science and technology development funds of the country, ministries, branches, localities, enterprises, organizations and individuals; increase the proportion of expenditure from the state budget for science and technology development.

Third, develop human resources in science and technology. It is necessary to build a contingent of highly qualified scientific and technological staff, on par with other countries with fairly developed levels in the region, dedicated, honest and dedicated; have strong political will, good qualities and capacities, have a structure in line with the Socio-economic Development Strategy, ensure a stable and continuous transition between generations, and meet the requirements of the socio-economic development. , the task of the new era.

To develop human resources for science and technology, drastic solutions are required such as: Developing strategies for developing scientific and technological staff, training and fostering talents, especially officials leading the way in key economic fields and industries and high-tech industries; Having policies on recruitment, employment and appropriate remuneration for science and technology staff, encouraging freedom of scientific creativity, etc.

Fourth, continue to innovate the management mechanism of science and technology in the direction of: Clearly defining functions and tasks, decentralizing management in the field of science and technology; To arrange and renovate the organization of science and technology research institutes, to develop a series of scientific and technological consultancy; Building a mechanism to link businesses with universities and research institutes; Renovate the planning and financial

mechanism for scientific and technological research activities in line with the market mechanism.

Fifth, expand international cooperation in science and technology. To expand international cooperation in science - technology, it is necessary to multilateralize cooperation methods, attach importance to cooperation in basic research and high-tech development; encourage and create conditions for foreign scientific and technological organizations to set up research bases and open high-quality vocational schools and universities in Vietnam; create conditions for Vietnamese scientists to participate in international scientific conferences, research exchange and teaching abroad; attracting overseas Vietnamese and foreign experts to study and teach in our country.

4. Conclusion

It can be said that today science and technology are important factors determining the speed and quality of economic growth of every country. A country that has a strategy to promote science and technology development as well as application and transfer of modern advanced scientific and technological achievements into production will quickly achieve economic growth. spectacular economic growth as well as sustaining high economic growth in the long run. Therefore, promoting science and technology development is an urgent requirement for all countries, especially for Vietnam if it wants to achieve the goal of fast and sustainable economic growth.

In addition to the achievements, limitations in investment, development and use of scientific and technological resources in our country in recent years have created a great obstacle in the process of economic development, improve and enhance the material life of the people. That fact requires us to continue to propose and implement synchronous solutions to enhance the national scientific and technological potential, to make the most of and effectively use scientific and technological resources. economic development in our country today.

5. References

1. Institute of Economics, Ho Chi Minh National Academy of Politics, advanced textbook of political theory "Development economy", Internal circulation, Hanoi 2017.
2. Prime Minister Nguyen Tan Dung answers questions before the National Assembly deputies at the eighth session of the 13th National Assembly, according to http://nguyentandung.org, updated on February 12, 2015.
3. Mai Ha, Anh Tuyet, Science and technology have contributed to socio-economic development, according to http://truyenthongkhoahoc.vn/vn/Khoa-hoc-va-cong-nghe-da-gop- phan-trong-phat-trien-king-texa-hoi-c1026/Khoa-hoc-vacong-listening-da-gop-phan-trong-phat-trien-king-texa-hoi-n9065, Updated on October 5, 2016.
4. Thu Ha, State of technology transfer in Vietnam, according to https://baomoi.com/thuc-trang-chuyen-Giao-cong-nghe-tai-viet-nam/c/23084069.epi, updated August 22, 2017.
5. Pham Trung Hai, Situation and solutions for technology transfer in Vietnam, according to http://tapchitaichinh.vn/nghien-cuu-trao-doi/thuc-trang-va-giai-phap-chuyen-Giao- cong-nguyen-o-viet-nam-114233.html, updated on 31/05/2017.
6. Vu Tuan Hung, The role of science and technology development investment in economic growth, according to http://tapchitaichinh.vn, updated on July 16, 2016.