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**INNOVATION OF FINANCIAL AUTONOMY AND SELF-
RESPONSIBILITY MECHANISM FOR SCIENCE AND TECHNOLOGY
PUBLIC INSTITUTIONS IN VIETNAM**

**Concentration: Public Administration
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THESIS ABSTRACT FOR PHD IN PUBLIC ADMINISTRATION

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INTRODUCTION

1. Reasons for choosing this topic

Vietnam is in the process of developing the socialist-oriented market economy with the role and contribution of science and technology is becoming increasingly important. The Decision of the 11th Central Conference clearly indicated that Science and Technology (S&T) serve as an important driving force for economic and social development of the country. In the development of science and technology, science and technology public institutions play a decisive role. Nevertheless, upon review, evaluation of the operation of S&T public institutions, we still see the inefficiency, poorly motivated and not yet satisfactory to the societal expectation of the role of S&T public institutions in the country's socio-economic development. The reason for this issue has been pointed out by many policy makers as the insufficiency between the operational mechanisms in S&T institutions and the economic transformation. One of the shortcomings that has been hotly debated in the scientific world and the society is the financial mechanism of S&T public institutions operation.

Deriving from the above reasons, the choice of the topic: *“Innovation of financial autonomy and self-responsibility mechanism for Science and Technology public institutions in Vietnam”* as the Doctoral Thesis for Public Administration is critical in terms of theory and practice.

2. Research objective and missions

2.1. Research objective: developing a scientific foundation to propose measures to innovate financial autonomy and self-responsibility mechanism for S&T public institutions in Vietnam.

2.2. Research missions: Clarification of the theoretical basis for the financial autonomy and self-responsibility for S&T public institutions; Assessment of current practice of financial autonomy and self-responsibility mechanism for S&T public institutions on 2 aspects: legal provisions and implementation; Recommendation of measures to innovate financial autonomy and self-responsibility mechanism for S&T public institution, which contribute to the improvement of State management efficiency in the S&T sector.

3. Research object and scope

3.1. Research object: financial autonomy and self-responsibility mechanism for science and technology public institutions in Vietnam.

3.2. Research scope

Spacial scope: Vietnam. Temporal scope: from 2005 to present.

4. Research methodology and methods

The thesis employed the methods of dialectical materialism and historical materialism as well as other specific methods such as systematic approach, analysis, synthesis, comparison, statistics, inductive, deductive, etc. In addition to the conventional methods, the thesis also applied multidisciplinary and interdisciplinary approach to further elucidate the issues to be studied. In particular: Analytical and

Synthetic Method; Systematic Method; Statistical and Survey Method; Document Analysis Method; Comparative Method, etc.

5. Research questions and hypotheses

5.1. Research hypotheses

Firstly, the financial autonomy and self-responsibility of S&T public institutions play important parts in promoting the development of S&T public institutions in particular as well as S&T sector in Vietnam in general. Secondly, in the course of realizing the financial autonomy and self-responsibility, S&T public institutions have made certain achievements, yet there still remain some drawbacks affecting the development of S&T public institutions in Vietnam. Thirdly, innovation of financial autonomy and self-responsibility mechanism for S&T public institutions should take a result-oriented approach.

5.2. Research questions

What is financial autonomy and self-responsibility in S&T public institutions? What is the current status of the financial autonomy and self-responsibility in S&T public institutions? What is the solution for the innovation of financial autonomy and self-responsibility mechanism for S&T public institutions?

6. New scientific contribution of the research topic

Firstly, relying on prior research and inheritance of available documents in Vietnam and in the world, the thesis offers a systematic range of concepts which involve the financial autonomy and self-responsibility mechanism in S&T public institutions as well as analyzes the role of state management in this sector. Secondly, in generalization of financial autonomy and self-responsibility mechanism in S&T public institutions, the thesis also points out the strengths and weaknesses in the current financial autonomy and self-responsibility mechanism in S&T public institutions in Vietnam. Thirdly, on the basis of evaluating the current status of implementing financial autonomy and self-responsibility mechanism for S&T public institutions, the thesis makes proposal for policies and implementation of financial autonomy and self-responsibility mechanism for S&T public institutions.

7. The theoretical and practical significance of the thesis

Theoretically, the research results will make important contribution to the State management theories which regard to S&T public insitutions, which help raise awareness of the role and importance of government policies to S&T public institutions while contributing to the implementation of the national socio-economic and S&T development strategies. *Practically*, the thesis shall be used as helpful reference material for research, teaching and learning in scientific and administrative training centers. At the same time, the thesis also provides scientific evidence to be referred by state management agencies in implementation and innovation of financial autonomy and self-responsibility mechanism for S&T public institutions in Vietnam.

8. The thesis structure

Chapter 1: Research Overview. Chapter 2: Scientific basis of financial autonomy and self-responsibility mechanism for S&T public institutions. Chapter 3: Current status of financial autonomy and self-responsibility mechanism in S&T public institutions in Vietnam. Chapter 4: Direction and Solution to innovate financial

autonomy and self-responsibility mechanism for S&T public institutions in Vietnam.

Chapter 1

RESEARCH OVERVIEW

1.1. Literature review of relevant research projects

1.1.1. Research on innovation of the organizational structure of science and technology public institutions

The book named “*Quản trị nghiên cứu công (Governance of Public Research)*” published by OECD in 2003 describes the challenges facing S&T public institutions in the 1990s. The set of 03 research projects in institutional level conducted by the National Institute for Science and Technology Policy and Strategy Studies regarding *The organizational and operational process of some science and technology research Institutes* in three areas: institutes under ministries (05 cases), institute under the National Center for Natural Science and Technology (05 cases) and S&T organizations under universities (02 cases) were implemented in 2000. The research “*The overall picture of science and technology in Vietnam - VISION*” was implemented under the framework of the cooperation between MOST Vietnam and the Ministry of Research and Training in Germany (2004 – 2005). The book “*Khoa học, Công nghệ và Đổi mới ở Việt Nam (Science, Technology and Innovation in Vietnam)*”, a joint study between the World Bank (WB) and OECD published in 2014, has pointed out the analysis showing that S&T public institutions have a significant part in the innovation system in Vietnam.

1.1.2. Research on the autonomy and self-responsibility mechanism for S&T public institutions

The Book “*Public Research Institutions - Mapping Sector Trends*” (*Các tổ chức nghiên cứu công – Bản đồ xu hướng*) was published by OECD in 2011. Social Science Research Center and National Institute for Science and Technology Policy and Strategy Studies conducted a research project namely “*Research and Development System in Vietnam in 1990s – Structural and Functional Changes*” under the Volkswagen Fund by the Federal Republic of Germany in the period of 1996-2000.

1.1.3. Research on financial autonomy and self-responsibility mechanism for public institutions

The Doctoral thesis “Renovation of the financial policy for the public sector in Vietnam”, majored in Political Economics by Pham Chi Thanh in 2011 clarified the financial nature of public institutions in the market economy. The Doctoral thesis “Completion of financial self-responsibility mechanism in Vietnamese public universities”, majored in Banking and financial economics by Tran Duc Can did profound research and proposed for policies to complete the financial self-responsibility mechanism in Vietnamese public universities.

1.1.4. Research on the financial autonomy and self-responsibility mechanism for S&T public institutions

Currently, there has been no in-depth and systematic research in the field of financial autonomy and self-responsibility mechanism for S&T public institutions,

some relating content is scattered in some relevant master theses, and in some scientific reports, articles published in magazines and websites. The relevant content in these mentioned articles mainly focuses on specific recommendations on policies to promote financial autonomy and self-responsibility mechanism in certain S&T public institutions, or on specific financial issues in the S&T sector. Besides, there are some Master theses for S&T Management studying on this problem, which mostly analyzed the process of financial autonomy and self-responsibility in some S&T public institutions and identified conditions for S&T public institutions to shift to autonomy, self-responsibility mechanism, including financial autonomy, self-reliance.

1.2. Overall assessment of the situation of the research topic

1.2.1. The research content that is inheritable

Firstly, research on national and foreign S&T public institutions offering views on the establishment of S&T public institutions are considered in the in the context of national economic transformation to help policy makers as a ground for making important decisions in the process of organizing Vietnamese S&T public institutions. S&T public institutions play a significant role in the innovation system of Vietnam; although previously the S&T institutions have made notable achievements scientific research, but nowadays, the S&T and innovation capacity is still low, the national innovation system is still fledgling and fragmented, so the research systems in both public and non-public sectors need to be further improved.

Secondly, research on financial autonomy and self-responsibility mechanism for foreign S&T public institutions bring about information on changes and development trends of S&T institutions in the future while providing understanding on the rearrangement orientation, institutional structures, funding, human resources, and international cooperation of S&T public institutions. The financial autonomy and self-responsibility mechanism for S&T public institutions on the following aspects: (1) Financial autonomy is the competence of a public institution, the nature of the financial autonomy mechanism is a legal document stipulating the transfer of financial decision-making from the state to public institutions; (2) Factors affecting financial autonomy mechanism is the financial policy mechanism of the State, of every public self-construction public institutions that are consistent with the national development objectives; (3) the financial autonomy mechanism of public institutions should comply with the financial autonomy mechanism of businesses in the current economic market, socialist mechanism.

Thirdly, research on the financial autonomy and self-responsibility mechanism for foreign S&T public institutions in general, and for certain types of organizations, such as Vietnamese public universities. These research all proves that subsidy removal, aiming for financial and operational autonomy, self-responsibility in public institutions is inevitable and is a continuous process.

1.2.2. Issues that require further study

Firstly, the thesis must systematize and interpret, clarify concepts relating to the financial autonomy, self-responsibility mechanism in S&T public institutions while analyzing the role of state management in this sector. Secondly, the thesis must be

able to generalize the autonomy, self-responsibility mechanism in S&T public institutions, analyze for strengths and weaknesses in the financial autonomy, self-responsibility mechanism in current Vietnamese S&T public institutions. Thirdly, the thesis must determine the direction, propose for solutions to innovate the financial autonomy, self-responsibility mechanism in S&T public institutions.

Chapter 2

SCIENTIFIC BASIS OF FINANCIAL AUTONOMY AND SELF-RESPONSIBILITY MECHANISM FOR SCIENCE AND TECHNOLOGY PUBLIC INSTITUTIONS

2.1. Basic concepts

2.1.1 Science and Technology public institutions

An institution, as an entity, is the gathering of people who are organized, working for common interests, common goals. Thus, an S&T institution is an entity conducting S&T activities for common interests, common goals. An S&T institution is established, run and dismissed as prescribed by law. The main function of an S&T institution is to do research on scientific topics, implementation and development technology, S&T services. An S&T institution can be established by the State, individual, group. The S&T institutions established by the State operate under specified functions and missions are called S&T public institutions.

2.1.2. Financial autonomy, self-responsibility mechanism

The financial autonomy, self-responsibility right of public institutions carries its own characteristics, namely:

- The Rights that go hand in hand with responsibilities: public institutions are entrusted by the State to decide on the financial problems within the institutions, yet they must take responsibility for their decisions under the law, the State and before the requirements set by the beneficiaries of the services they provide.

- The financial autonomy always parallel with the self-responsibility with regards to other activities: the financial autonomy can only be implemented when the public institutions retain the autonomy rights in other activities effectively, the financial autonomy and the autonomy of other activities in public institutions share a strong bound, support each other.

- The financial autonomy in public institutions is a limited autonomy. Public institutions are established and managed by the State so that all internal activities, including financial activities are placed under the control and supervision of the State and of the authorities of superior management, despite the fact that these activities are given autonomy and self-responsibility. The limitation of financial autonomy in public institutions is a cardinal part, which originates from the legitimate interests in the enjoyment of social services, where the State is the defender. The State issues regulations on financial autonomy of public institutions, which specifies the scope, degree of autonomy for certain financial operations within the institutions.

2.2. Identification of financial autonomy and self-responsibility mechanism for science and technology public institutions

2.2.1. The financial mechanism of science and technology public institutions

The content of the financial mechanism for S&T public institutions implementing S&T activities

The financial mechanism for S&T public institutions implementing S&T activities bases on stages in the process of financial management as follow: Estimation; Evaluation and Approval of the estimates; Allocation; Settlement; Check.

Factors affecting the financial mechanism of S&T public institutions:

The awareness of stakeholders in the financial connection; Objectives of the State; The level of socio-economic development and the characteristics of S&T activities.

2.2.2. The financial autonomy and self-responsibility mechanism for science and technology public institutions

The Subject: The State is the subject of the autonomy and self-responsibility mechanism to impact, manage the finance of S&T public institutions. The Objective: the financial autonomy and self-responsibility mechanism for S&T public institutions aims to promote the development of S&T public institutions in line with the market economy. The Content: the modalities and methods that the State employs to achieve the objective of financial autonomy and self-responsibility mechanism for S&T public institutions. The Object: the financial autonomy and self-responsibility mechanism for S&T public institutions is the system of legal and guiding documents apply to S&T public institutions, other stakeholders that utilizes S&T services, and encourage other actors to participate in the funding and investment of S&T institutions' activities.

Thus, the financial autonomy and self-responsibility mechanism for S&T public institutions shall be understood as a conciliation of management methods set by the State to supervise financial activities, resolve financial connections within and outside of S&T public institutions in order to develop, make use of the financial resources of the S&T public institutions system, better meet the increasing social requirements of S&T and in accordance to the development of the national economy.

2.2.3. The role of financial autonomy and self-responsibility mechanism for science and technology public institutions

For the management entity (State): the financial autonomy and self-responsibility mechanism for science and technology public institutions helps reduce the burden on public spending and help the State fulfilling its expected objectives.

In the implementation of public policy with regard to S&T public institutions: the financial autonomy and self-responsibility mechanism for science and technology public institutions helps enhance the transparency and efficiency of activities, scientific and technological tasks.

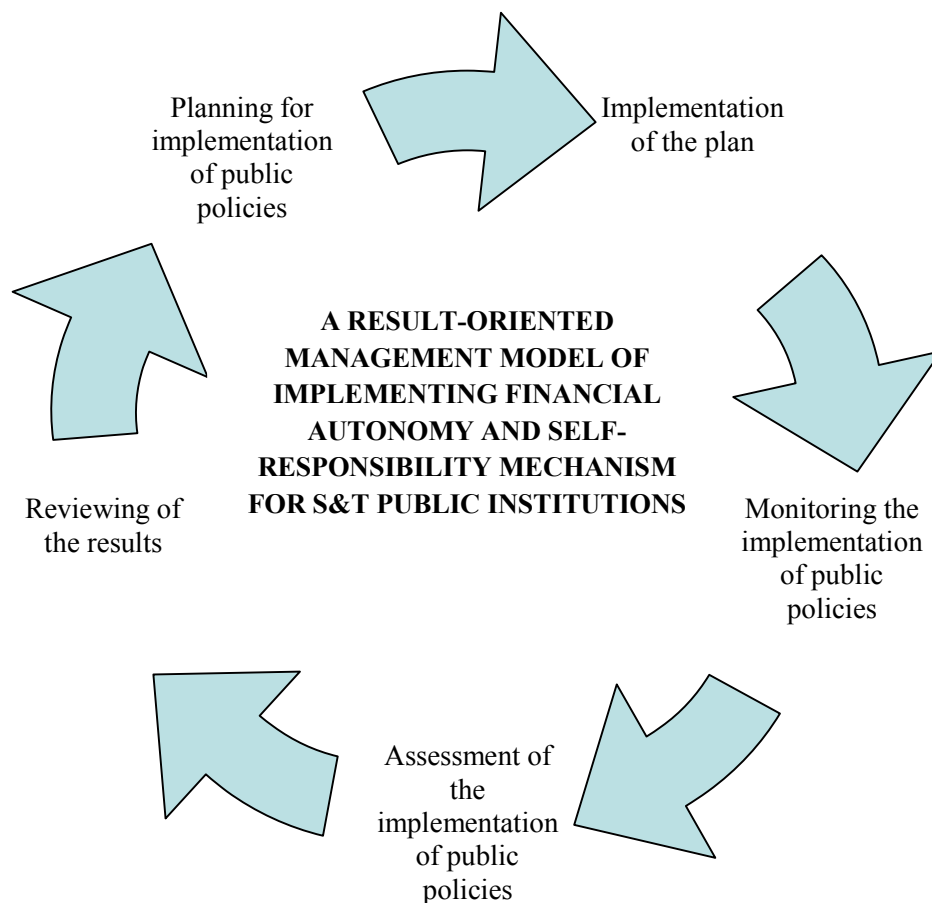
For the object of management (S&T public institutions, researchers): the financial autonomy and self-responsibility mechanism for science and technology public institutions helps improve the performance while enhancing quality of S&T services provided by S&T public institutions as well as create a sense of flexibility, autonomy, self-responsibility, creativity for S&T public institutions and its personnels; Thanks to this effective operation, the income of the insitutions and insitutional officials increase, which attracts talented manpower to work in the

organization. In addition, in the course of implementing the financial self-responsibility mechanism, S&T public institutions are solely responsible for the establishment and implementation of a transparent financial mechanism and accountability with the concerned management authorities as well as organizations and individuals within the S&T public institutions.

2.3. Identification of the innovation framework of financial autonomy and self-responsibility mechanism for science and technology public institutions

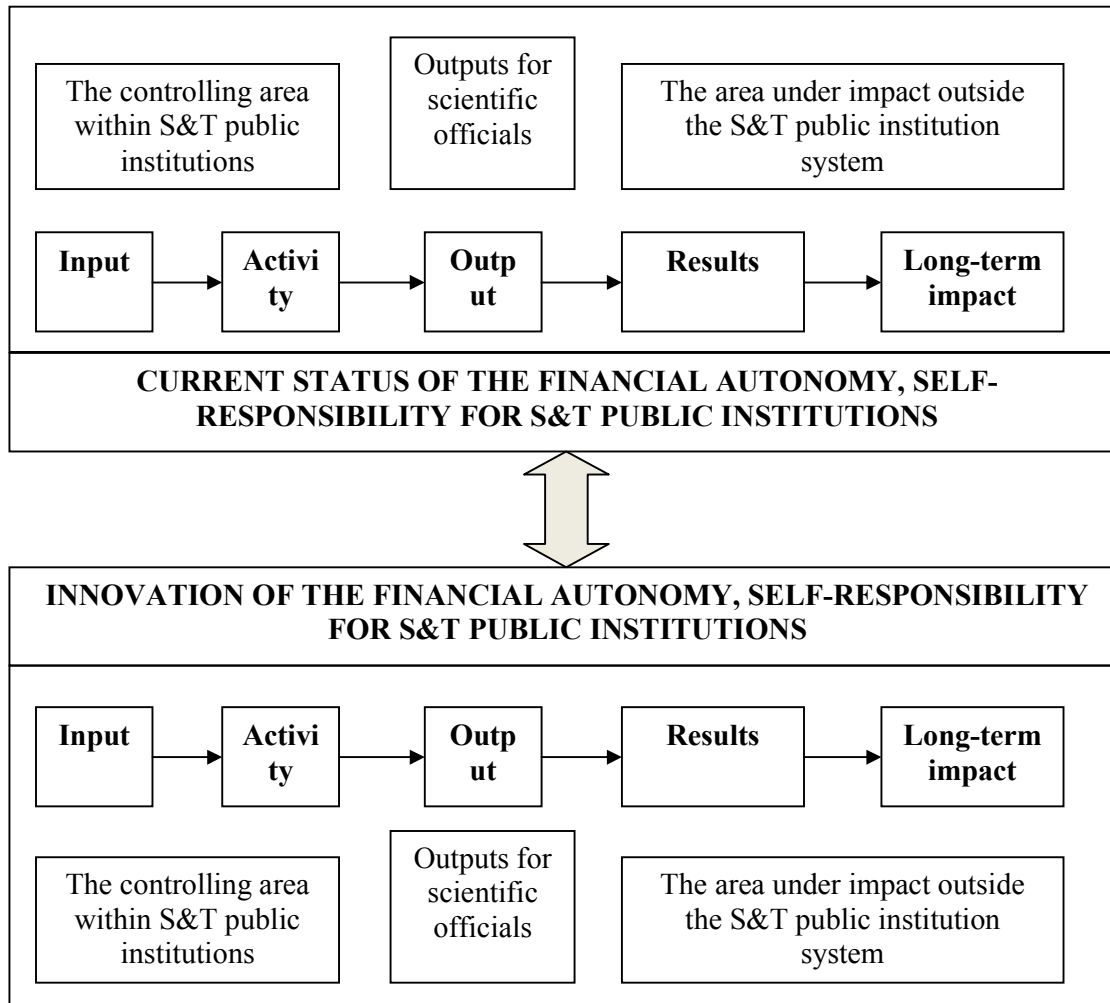
2.3.1 The result-oriented management model of implementing financial autonomy and self-responsibility mechanism for science and technology public institutions

Figure 2.1: The result-oriented management model of implementing financial autonomy and self-responsibility mechanism for science and technology public institutions



2.3.2 The innovation framework of financial autonomy and self-responsibility mechanism for science and technology public institutions

Figure 2.3. The innovation framework of financial autonomy and self-responsibility mechanism for science and technology public institutions



Thus, innovation of the financial autonomy, self-responsibility mechanism for S&T public institutions, in the new result-oriented approach, is understood as the conciliation of all elements regarding to autonomy mechanism, financial sustainability for S&T public institutions (which include: inputs, activities, outputs and long-term impact to solve the following content:

Firstly, how to implement the financial autonomy and self-responsibility mechanism for S&T public institutions based on such aspects as inputs, activities and outputs. Secondly, on the basis of shortcomings in the implementation of the financial autonomy and self-responsibility mechanism for S&T public institutions, what need to be performed in the corresponding content-related aspects of inputs, activities, and output; what are the supportive innovation solutions outside the S&T public institution system.

2.4. Some international experiences with regard to the autonomy and self-responsibility of science and technology public institutions

2.4.1. Conditions for implementing the autonomy and self-responsibility of science and technology public institutions

2.4.1.1. Development of science and technology market relations

China has urgently built the institutional ground for commercialization of scientific and technological activities including technology Contract Law, Regulations on evaluation and management of technology contract, the Patent Law, the Copyright Law, the Law to promote transferring science and technology achievements, ... In 10 years, from 1987 to 1997, China had more than 150 new legal documents on S&T, and most of them are related to commercialization of S&T activities. Technology broker agencies has flourished significantly. Specifically, as of 1992, China has set up 28,000 technology transaction organizations with 686,000 officers. It also launched various types of credit to encourage commercialization of research results such as the special loans for "S&T development", S&T credits set priorities for agriculture.

2.4.1.2. Innovation of S&T management in macro level

The previous funding system for science in Brazil, has led to passivity for research and development agencies because of bureaucratic funding division regulations caused by subsidized officials with limited suitable professional understanding. The S&T action program (acronym in Portuguese is PADCT) has been made to overcome the drawbacks of the old system. The World Bank has helped to initiate two loans focusing mainly on the reform of state funding for research, instead of focusing on restoring a few selected scientific fields.

2.4.1.3. Establishment of a system to evaluate the autonomy and self-responsibility mechanism for science and technology public institutions

In Russia, the shift to an autonomy and self-responsibility mechanism of operation for S&T institutions must be evaluated based on new criteria: the results of scientific research and technological development that were and will be achieved in the fields of priorities set by the State, which are in line with the orientations and tasks of the State's research and development policy; The level of scientific and technological research as well as the results achieved, the level of compatibility and international and regional competency; S&T potentials of qualified institutions to solve the assigned tasks in the S&T field to catch up with and rise to an advanced regional and international level.

2.4.2. The content of financial autonomy and self-responsibility of science and technology public institutions

2.4.2.1. Quick transition with no support

Since 1991, the industrial enterprises of the Czech Republic has been self-financing for their R&D activities. Therefore, S&T public institutions operating in the industrial sector suffered immediate loss of income from enterprises and had to find other sources to survive. This "Shock therapy" led to a major shift in operation of

S&T public institutions into services and production-trading. For survival, many S&T public institutions has become testing centers ensuring quality standards and engage in commercial activities, production-business.

2.4.2.2. Quick transition with some support

A typical case is East Germany applying quick transition with certain support to adapt to the S&T organizational system of West Germany. However, several studies indicated that the government has offered much support upon assessing each institution and on that basis, institutions have been restructured. Over a short period of time, R&D institutions in East Germany have been entirely restructured.

2.4.2.3. Gradual transition with some support

The Polish government pursued a policy of restructuring S&T public institutes gradually. The government changed the principles of funding for R&D through rating S&T institutions on the basis of direct assessment of each institution. However, a large number of institutions still receive grant for parts of their budgets.

2.4.2.4. Gradual transition with no support

The Russian Federation is the typical case of gradual transformation of S&T public institutions with the slogan "avoid doing harm to national sciences". Many industrial S&T public institutions were closed, simultaneously, many large institutions were divided into small units, besides some new S&T organizations were formed under the Academy of Science. The majority of S&T public institutions survive because of partially restructuring and are still owned by the state.

2.4.2.5. Quick transition and gradual transition with no support

Typical is Hungary with no clear transition policy, it applies both quick and gradual transition. Since 1988, many S&T public institutions in Hungary have turned into enterprises in order to maintain operations (for example, the Academy of Industrial research transformed into Microelectronics Company). However, there have not been many prospective domestic investors interested in S&T public institutions to make large investment to own and develop S&T public institutions. The first transitional wave started in the years of 1992-1993, 05 among 17 S&T public institutions were closed, the remaining 12 S&T public institutions converted into limited liability companies or joint ventures.

2.4.3. The content of financial autonomy and self-responsibility of science and technology public institutions

2.4.3.1. Ownership and Use Rights

In China, it was first thought that the ownership of research results using the State budget must belong to research institutions, but then it was agreed that the results of State funding research must belong to the State.

2.4.3.2. Science and technology missions

S&T public institutions can carry out S&T missions which are classified into 3 different categories.

The first type is the specified and direct State assigning missions. The second type is research topics within the operational functions of S&T public institutions

(which are stipulated by the State). The third type is contracts signed between the S&T public institutions and external parties.

2.4.3.3. Human resource management

In France, the Board of Management has a very important role, being the representative of the ownership and participation in managing the affairs of S&T public institutions, as stipulated in the Law of orientation and programming for research and development of technology of the French Republic: "The institutions with S&T nature must be monitored by the executive board. This executive board should include representatives elected by officials and representatives of the workers and representatives of the economy"(Article 16) and "Board of Directors of S&T institutions belong to the State even the branches of relevant agencies as well as all branches must be annually accounted"(Article 19).

2.4.4. Financial autonomy, self-responsibility

2.4.4.1. Operational costs of science and technology public institutions

According to the experience of many countries in the world, the State only invests S&T areas that the private sector does not or cannot provide. For example, the Republic of Ireland set the criteria of utilizing budget for S&T is a cardinal activity to create a foundation for the development of a given industry or to improve the effectiveness and efficiency of a social management function (ICSTI – International Center of Science and Technology Information, 1997)

2.4.4.2. Allocation and management of the State budget for science and technology institutions

Procedures to be implemented in order to receive funding from the State are rather tight. For example, in Korea, the Law of Training Korean special research agencies (Law No. 2671) provides: pursuant to the provisions of the President, the research institutions must develop annual operational and budget planning to report to the CEO of science and technology management; Director of science – technology should discuss with the Chief of the Central Administrative Unit and Head of Local Union prior to approval of the budget; if there are any changes in the expected budget and planning documents, procedures must be carried out from the start.

Chapter 3

CURRENT STATUS OF THE FINANCIAL AUTONOMY, SELF-RESPONSIBILITY FOR SCIENCE AND TECHNOLOGY PUBLIC INSTITUTIONS IN VIETNAM

3.1. The formation of financial autonomy, self-responsibility for science and technology public institutions

3.1.1. General information on the formation of financial autonomy, self-responsibility for science and technology public institutions

Documents issued prior to the innovation policy in 1986

Documents issued in the period from 1986 to 1999

3.1.2 Evaluation of the formation of financial autonomy, self-responsibility for science and technology public institutions

Firstly, some relations of autonomy and self-responsibility have appeared quite early and up to now have reached stability. Secondly, there has been binding linkage between among some autonomy and self-responsibility relations. Thirdly, the implementation of autonomy, self-responsibility in S&T public institutions through contracts, S&T organizations has met the needs of production, providing necessary services to the production process, improving product quality, serving social development, so many S&T organizations have revenues many times higher than the revenues provided from the State budget. Fourthly, in the current operation of S&T public institutions, there are restriction problems that have a major impact on the quality and efficiency of research activities, such as the financial relationship of S&T activities in S&T public institutions is still heavily administered, subsidized; the management of S&T officials still reflects the paradigm of government officials, ...

3.2. Status and evaluation of financial autonomy, self-responsibility for science and technology public institutions

3.2.1. Current status of sources of finance in science and technology public institutions

The funding for S&T is mainly derived from the State budget and business investment. Besides, foreign investment for S&T is implemented through 3 following channels: the counterpart funding of foreign donors for implementation of international S&T cooperation missions according to the bilateral or multilateral Protocol; official development assistance(ODA); foreign direct investment (FDI). Foreign investment for S&T is often through: supporting projects, bilateral or multilateral research cooperation topics, international scientific seminars, conferences, financial support for training, attending scientific conferences. Currently, there have been no details on the statistics of funding for S&T from foreign donors; on the other hand most of foreign investment for S&T institutions is regarded as the State budget. Thus, with the aim to find out the current situation to develop financial policies for the efficient autonomy of S&T institutions, we focus on the status of the investment from 2 main sources, which are the State budget and business investment. In this article, we use the statistics from the study on S&T potential in 2012 by Ministry of Science and Technology.

Investment in science and technology using the State budget

In overall, the total expenditures for S&T from the State budget always reach nearly 2% of the total state budget expenditures (equivalent to -0.6% or 0.5% of GDP). However, the mobilization in the National Reserve taken from the budget allocated to S&T pertains an increasing trend in reality, the budget actually spent on S&T has fallen sharply in recent years (just to ensure the level from 1.36% to 1.51% of total expenditures from the State budget).

In comparison to investment in S&T of the world, we can see the spending on S&T in Vietnam (about 0.5-0.6% of GDP) is much lower than the average level of expenditures for R&D activities of the world is 2% .

Business investment in science and technology

Investment here can be understood as revenues from business ordering, doing contracts with S&T institutions to address research missions for businesses, but not developmental investment. Along side with the State, businesses have spent significant amount of money on the investment for S&T. Business investment for S&T can be divided into two types: expenditures for research and development activities and expenditures for technological innovation.

In short, the sources of financing for S&T activities over the past period can be generally reviewed with an outstanding feature that **the funding for science and technology is increasing every year, mostly out of the State budget**. Nevertheless, in comparison to the average spending for S&T all over the world (2% GDP), Vietnam with 0,5% GDP spending for S&T is still left with a quite large gap.

3.2.2. Current status of the funding modality for regular activities in science and technology public institutions

In the current operation of S&T public institutions, the funding from the State budget including the spending for implementation of research missions and regular activities is provided by the State. Even though the proportion of funding for regular activities that S&T institutions receive from the State is not much, yet it is a stable source of funding, which helps “maintain” the institutional operation because this funding is given based on institutional payroll (according to the Decision No. 59/2010/QĐ-TTg promulgating the cost norms for the State recurrent expenditure for the budget year of 2011, the State provide 1 payroll of no more than 38.760.000 VND/ head/year). The recurrent expenditure is used to pay for officials’ wages and the institutional operation. If an official has the average wage of 3 million VND/month, his yearly wage is 36 million. And thus, the spending for institutional operation is left with no more than 2.760.000 VND/head/year.

The above modality for recurrent expenditure is exposed to some restrictions:

- S&T public institutions always tend to request for increasing their regular officials in order to receive the regular operating fund. When they received more regular officials on the payroll, the state would provide them with more money for regular activities. Salary fund of the S&T institutions is very limited, the average salary for officials is low, and so the S&T institutions can not attract skilled researchers and don’t have qualified scientific officials.

Although the average salary of officials in the S&T institutions is low (about 3 million/person/month), but there are a lot of people who want to be on the payroll of the S&T institutions because everyone wants to seek a stable but not rich and not hungry job. And after they are on the payroll, the phenomenon of average of work appears among them because they always think that they don't have to try hard in their work, they still get salary monthly without money reduction. When they have free time, they participate in the research projects which help them to get more money, more income which dispersed researchers in the S&T institutions and also created difficulties for the operator management of the unit heads.

- Funding for the apparatus operation of the S&T institutions is very small (as noted above), to pay for a lot of activities: costs of electricity, water, gasoline, maintenance, stationery, per-diems, communications,... Normally, this funding is never enough for the apparatus operation and management, the head of the unit often has to find more funding in different ways such as cutting per diem of officials, or reduce business trips, fieldwork that would have helped a lot for work. In short, in every organization, there has a head always has to "struggle" himself/herself in the balance of revenues – financial expenditures to sustain the operation and management of the apparatus.

- The salary payment for S&T official in the payroll in the S&T institution is currently applying the salary scale of the regional state administration sector on average. This totally contradicts the particularities of research activities which are creative. People who are working in scientific field always want to be respected and right evaluated by the authorities, paid worthy with their contributions to the organization as well as their efforts. With the current salary payment, the scientists do not feel assured to work and dedicate to the organization, because their salaries are not enough to guarantee their lives. Thus, "brain" drain will surely happen, the scientists must strive to work, or to tell a "lie", complete the invoices, financial documents for the management agency when finalizing the topics/projects...

- The head/leader of institution is the person assigned by the State to manage an organization but he or she has no real rights to run the organization and development because they do not have the necessary tools, such as decision-making for salary payment, income for each official based on their dedication or contributions.

3.2.3. Current situations of funding modality for implementing the S&T missions in the S&T public institutions

3.2.3.1. Funding modality for implementing the S&T missions

Cost-estimate Preparation

Based on the estimation, the volume, scope of work has been identified, the spending level (for the expenditures of norms) and current prices. One of the important and necessary bases to make the cost-estimates is the cost norms, but it is also the most difficult for the agencies to develop financial spending regime.

Labour in science and technology research is a type of "brain" labors (intellectual labors) which is difficult to identify the right cost-norms. Many survey delegations of our country conduct study tours abroad to ask about this issue and the

answer is that it is hard to identify the right cost-norms for this labor group. The scientific sectors are very diverse, the spending in different scientific fields is also different, the social sciences different from technological sciences, technical sciences different from the agriculture sciences. In the agriculture, agriculture, forestry, fisheries and water resources are also different. Therefore, the calculation of intellectual labors is only a relatively conventional.

Some spending contents of the projects/scheme follow the market prices. Procurement of machinery, equipment, raw materials, tools, accessories, stationery, per-diem, accommodation, vehicle rental is calculated based on the market prices and under the regime of the State. This cost-estimate is difficult to identify how large the scope and size of topics and projects is appropriate? For example, for a subject of agriculture, there must be a trial size of about 10 hectares, but due to insufficient funds, the cost-estimates care calculate on the scale testing of 5 ha. In this case, we must consider it carefully. Some expenses must follow the agreement of the two sides as the analysis price of prototype, price for renting vehicles, equipment and material prices, data ...

Wages for researchers are still a “hot” topic. Whether the scientific products are calculated based on the pages or the quality of the documents/articles? If they are calculated according the the quality, who will evaluate the quality if calculating based on the number of pages, it will demonstrate the irrationalities because of the multi pages and low quality, not innovative contents but much more money. After a period of implementing the lumpsum modality, the lumpsum levels are still low and still limit the researchers.

All such expenditure must require adequate documents/invoices which make the reseachers feel too troublesome, cumbersome procedures, take time to gather invoices. The general opinion from the scientists is that the lumpsum contracts should be signed, settlement documents are consider as contracts, products and contract acceptance and liquidation papers.

According to the Decree No. 115/2005/QD-CP dated 05/09/2005 on the autonomy and self-responsibility mechanism of S&T public institutions noted that "apply the lumpsum modality for implementing the S&T mission of the State". However, there are no specific guidelines on how this lumpsum modality is carried out.

The S&T projects and schemes are prepared according the spending contents as follows:

- Labor expenditures directly involved in the implementation of the projects, including: Payment for researchers/scientific staff, technical staff directly involved in the implementation of the projects and schemes, including the theoretical research activities, research of technological processes, science and technology solutions, design, prototype; theoretical studies, the arguments in the social sciences and humanities; implementation or follow-up experiment, analysis samples; survey, questionnaire design, sociological survey; processing, analyzing survey data, sociological surveys; writing the computer software; writing scientific reports for

summarizing projects and recommendation reports;.

- Payment for unskilled workers in the implementation of the projects/schemes;
- Payment for buying materials, chemicals, raw materials and supplies to serve the scientific research and technology development, including materials, chemicals, raw materials, electricity, water, gasoline necessary for lab, to manufacturing prototypes or developing pilot-scale models, ... to meet the requirements of scientific research and technological development of the research projects/schemes;

- Expenses for buying documents, documentation, monitoring data, survey data, books, reference journals, technical documentation, technological know-how, professional documents, including satellite images/photos, remote sensing images, all kinds of publications; cheap and perishable equipment/tools, labor protection to serve directly for scientific research and technological development of the research projects.

- Expenses for purchasing and repairing the fixed assets, including: Expenses for procurement: technological equipment, testing equipment, measuring equipment, dedicated software, auxiliary equipment, office equipment,... equipment necessary for scientific research and technology development activities of the project; expenses for Renting and depreciation (if any) of equipment, machinery, buildings or vehicles involved in the implementation of scientific research and technological development, investigation and survey of the scheme, the project; expenses for repairing the technical infrastructure directly serving for scientific research and technological development of the research projects.

- Other expenses, including costs of training assistance, technology transfer, transfer of research results; per-diem in localities; abroad business expenses; conference expenses, general workshop topics and projects; expenditure on stationery, printing, information and communications; expenses for translating documents; expenses for compiling and printing books to disseminate information within the framework of the research project, schemes, registration costs of intellectual property rights for the results of scientific research and technological development (if any); detailed promotional activities, marketing, trade promotion for products of the research projects (for projects, schemes have these activities and included in the cost-estimates approved by the competent authority); expenditure for the management of agencies in charge of scientific projects; some other expenses directly serve to projects' implementation.

- In the spending contents for performing the S&T missions from the state budget, the spending for labor directly involved to the implementation of the project, the scheme is applied to pay for the researchers within and outside the S&T public institutions. This content is counted as wages for researchers. Currently, the proportion of wages in total expenditure of the S&T missions from the state budget is approximately 36%. Compared to the salary expenses for researchers (equivalent to 46% of funding of research missions), the remuneration/wages for the researchers to implement the S&T missions is lower than their salaries.

Figure 3.2: Proportion of wages and salaries in the implementation of the S&T missions using the State Budget



Source: Synthesized from data

However, when implementing the S&T missions, lots of spending contents are important but they were not specified in the legal documents (eg expenses to hire local and international experts, spending for patent register or international publication, reserve to avoid inflation, spending for propagating champagne of research results,...) as a result, the S&T missions, the projects have a lot of content which are not settled; in addition, the settlement procedures are rigid, making many scientists to tell a lie, devide research themes into so many topics to get a “beautiful;” settlement record. This approach is one of the reasons causing the "quality of many research projects” low, while the remuneration/wages for researchers "were" turned into the actual costs for expenses which were not settled as above.

Appraisal and approval for the cost-estimates

The institution reviewed and appraised the cost-estimates for the missions prepared by the leader of projects/schemes and sent to the superior management agencies for approva. These approved cost-estimates were gathered together with the overall cost-estimates which then were submitted to the state competence authorities for approval. The line Ministry will appraise and approve the cost-estimates of S&T missions and S&T public institutions. The Ministry of Science and Technology approves the cost-estimates of State-leveled missions: programs, independent projects at the State level, the test production projects. Department of Science and Technology in collaboration with the Department of Finance appraises the cost-estimates of S&T missions at the provincial levels and submits to the People’s Committee for approval.

Funding allocation

Currently, under the budget law, all missions aapproved by the competent authorities have been put in the plans of ministries and departments. Ministry of Finance, Department of Finance will provide funding for ministries and departments under the budget limit.

Normally, funds are allocated in batches, so, in order to receive the following funds, it is necessary to provide a settlement paper or report on previous expenditures to avoid quick advancement and slow settlement or not having reports on previous expenditures but asking for further advance payment.

Settlement

The institutions are responsible for settlement of funds granted by the deadlines and forms as currently regulated. The settlement of the institute will be sent to the superior financial agency. The financial agencies gather settlement papers and send to the Ministry of Finance. In principle, the bottom up settlement will follow the top-down funding lines.

For science with special characteristics, the settlement is often carried out later compared to overall progress. Each scientific research project typically lasts 2-3 years, so it is impossible to conduct the settlement when implementing the acceptance. In each stage of spending, if there are the gathered valid invoices and the intermediate products, the settlement must be done.

In reality, it usually takes time for the management levels to approve the S&T missions, especially some localities have not yet approved the projects until Quarter four of the year and there are no money to implement activities during the Quarter three and the fund is granted at the end of the year but the settlement is required to be conducted in December. Lots of institutions and project/missions leaders get troubles. Hence, the quick spending is a waste of money but they do not spend all, the remain should be returned to the State or advance, the settlement is therefore, cannot be done in time.

When carrying out the settlement, it is necessary to consider the spending associated with the completion of the approved contents and tasks. It is also necessary to avoid incomplete contents with empty pocket or the acceptance assessment is not in line with the funding settlement.

Checking

Financial checking is an indispensable stage in the process of management. The financial checking combined with the checking of content and implementation schedule. Checking is conducted to examine the spending with the right purposes, right regime and approved cost-estimates. It is also combined with the content checking to avoid the situations of having invoices without products or out of pocket with uncompleted contents. Also through the checking, there have been difficulties and obstacles in the process of allocation and expenditures to help to the project leaders and related units ensure the implementation progress of the assigned tasks. The inspection/checking held periodically and irregularly.

3.2.3.2. Problems caused in funding modality to implement S&T missions

First, about the time of funding

Second, the cost norms and procedures for settlement

Third, the incentives for research officials of S&T missions.

3.2.4. Current income situations of research officials in S&T public institutions.

The thesis used the survey results of 558 S&T missions, from this survey, the author found that: approximately 39.48% of the total funding for S&T mission (at all levels) was used for wages payment, job order payment, subsidies for mission leaders, the revenues excluding the monthly salary which the officials of S&T public institutions received is equivalent to 83% of salary according to grades; therefore the total average income of a researcher is equivalent to 1.82 times of monthly salary.

3.2.5. General assessment

Firstly, funding modality for regular activities for S&T public institutions has revealed a number of limitations: (1) S&T public institutions always tend to request for increasing their regular officials in order to receive the regular operating fund; (2) Many people wants to become regular officials of these S&T public institutions so that they have opportunities to get stable monthly salary paid by the State, participate in the research projects which provide them with additional incomes, which makes researchers in the S&T public institutions be distributed and the leaders have also difficulties in the management; (3) leaders of the S&T public institutions must “struggle” with the balance of financial revenues and expenditure so as to maintain the operation; (4) the incomes of S&T regular officials in the S&T public institutions at present are calculated as an average, completely opposite to the particularities of the research activities which are considered innovative, have not been evaluated properly, causing the “brain drain”; (5) leaders of the S&T public institutions are lack of neccessary tools to operate their organization (such as making decisions for salary payment, income for each official based on their contribution and devotion to the organization).

Secondly, funding modality for performing the S&T mission reveals some limitations: (1) Time for funding under the annual inflexible action plan and slow implementation of research missions; (2) The cost norms are incompatible with the practices of S&T activities; (3) Payment and settlement procedures are inflexible and complexible; (4) Incentives for researchers in S&T missions reveal some shortcomings: per diem is too low and not enough to offset the cost and effort of S&T researchers; conditions, technical facilities for research activities are not much invested compared with S&T institutions in the region and internationally, to create favorable conditions for scientists in conducting research; the research payment is not calculated based on the outputs and lack of transparency.

Thirdly, financial resources for S&T activities have been increased annually recently, mainly from the state budget, but compared with the average investment for

science and technology of the world (2% of GDP), the investment in science and technology of Vietnam (about 0.5-0.6% of GDP) is still far behind.

Fourth, the financial "self-responsibility" mechanism of S&T public institutions in the current policies and in practices is reflected in aspects of taking responsibility for the assigned content of autonomy, not is clearly expressed in the establishment and implementation of transparency mechanism of finance and financial accountability for involved management agencies as well as with organizations and individuals inside S&T public institutions.

Fifthly, the implementation of the autonomy and self-responsibility mechanism in S&T public institutions is always put in synchronization relation with the implementation of autonomy and self-responsibility mechanism for the S&T public institutions, so as to ensure the innovation of autonomy and self-responsibility mechanism S&T public institutions, it is necessary to give innovative solution, remove the difficulties encountered in implementing the autonomy and self-responsibility mechanism in S&T public institutions.

DIRECTIONS AND SOLUTIONS TO INNOVATE FINANCIAL AUTONOMY AND SELF-RESPONSIBILITY MECHANISM FOR S&T PUBLIC INSTITUTIONS IN VIETNAM

4.1. Directions and Solutions to innovate financial autonomy and self-responsibility mechanism for S&T public institutions in Vietnam.

4.1.1. Directions and Solutions to innovate financial autonomy and self-responsibility mechanism for S&T public institutions in Vietnam.

The Party and State had soon paid attention to the issue of autonomy and self-responsibility of the S&T public institutions (before "innovation" policy) and systematic, expressed as national policy roles of science and technology for the development of the country.

With a system of guidelines and policies for the mechanism of autonomy and self-responsibility of the S&T public institutions, direction to continue to strongly innovate the management mechanism in general and mechanisms of financial autonomy and self-responsibility in particular in the S&T public institutions confirmed that is a right direction, although there are still many difficulties to overcome.

4.1.2. Point of views to innovate financial autonomy and self-responsibility mechanism for S&T public institutions.

Firstly, to ensure the effective usage of the state budget, while increasing the income for the scientists;

Secondly, to ensure autonomy, to promote the initiative and creativity of S&T public institutions;

Thirdly, to ensure the autonomy and self-responsibility rights of the head of the organization;

Fourthly, supervision and monitoring mechanism of S&T activities is transparent, in order to improve research quality and efficiency of state budget spending.

4.2. Solutions to innovate financial autonomy and self-responsibility mechanism for S&T public institutions.

4.2.1. Innovation of the existing legal regulations

First, innovation of legal regulations on S&T activities

Second, innovation of legal regulations on finance in the field of science and technology

Third, innovation of legal regulations on asset management and property rights.

Fourth, innovation of legal regulations on apparatus management and personnel management.

Fifth, innovation of legal regulations on tax policies.

4.2.2. Innovation of funding modality for regular activities.

For S&T public institutions which themselves are able to ensure their regular operating funds

First, for the S&T public institutions which themselves are able to ensure their regular operating funds.

Second, for the S&T public institutions which themselves are able to ensure partial regular operating funds.

Third, for the S&T public institutions which the State ensures their regular operational funds

Fourth, for the S&T public institutions which have been newly established.

4.2.3. Innovation of financial mechanisms for S&T missions from the state budget

4.2.3.1. Enhancing the cost-norms for S&T missions in line with practices.

Contents and cost-norms for general management of S&T missions; Contents and cost-norms for local and international experts in research collaboration; Contents and cost-norms for scientific conferences to serve research activities; Cost-norms for council meeting of acceptance assessment.

4.2.3.2. Innovation of lumpsum modality in implementing S&T missions using the State Budget, towards to lumpsum modality for the end products

We propose two lumpsum modalities in implementing S&T missions using the State Budget: partial expenditure and lumpsum to the end-products.

4.2.3.3. Innovation of funding modality for S&T activities into Fund mechanism

Establishing the funding allocation mechanism for S&T activities through the S&T development Fund, regardless of the annual action plan.

The S&T development Fund is a public institution, operating for non-profit purposes, with the function of receiving, management and usage of budget funds and other funding sources of local and international organizations and individuals. The Fund conducts main activities including: (1) to provide funding for S&T missions; (2) To fund several S&T missions at the grassroot levels proposed by the organizations and individuals; (3) for loans: the projects applied S&T research results into production and life for socio-economic development; (4) to support to the enhancement of S&T capacity, talented young scientists not belong to the S&T public organizations; (5) for loan guarantees for S&T missions.

4.2.4. Establishment of income Fund for salary and wages payment for regular S&T officials

S&T public institution established an income Fund (Q_{TN}) on the basis of putting the entire budget estimates for human payments (salaries and wages) and remuneration according to specialized subjects for staff in the institution for each mission of this Fund. In general, the formation of this Fund (Q_{TN}) in the S&T public institution is calculated as follows:

$$Q_{TN} = \sum_1^n B_n + \sum_1^n (B_1)_n$$

Of which, from 1 to n: the number of missions that the S&T public institution conduct (including two types: functions-based regular missions and S&T missions). Thus, the formation of this Fund (Q_{TN}) in the S&T public institution is also understood that by transferring the funds intended for human consumption expenditure ($B + B_1$) in each mission in Q_{TN} .

4.2.5. Efficiency enhancement of resources mobilizing for S&T investment.

4.2.4.1. Diversifying the investment resources for science and technology

Promoting the socialization of investment activities for science and technology, attracting social sectors to involve in science and technology activities, thereby strengthening the cohesion between science and technology and production, promoting technical innovation and improvement to enhance production capacity and competitiveness of the economy.

Completing the financial policies of the state for the S&T development (preferential credit policies, tax incentives, depreciation ...), to encourage the mobilization of resources in society for the S&T development. Continue to support to the development of S&T enterprises towards to the state's orientation and the investment of enterprises follows the public-private partnership model, using effectively the National Foundation for Science and Technology Development, National Technology Innovation Fund, S&T development Funds at Enterprises. Forming appropriate mechanisms for the mutual coherence between the different types of science and technology Funds to improve operational efficiency. Promoting cooperation and links of the S&T institutions with localities, businesses and individuals in the implementation of S&T missions.

4.2.5.2. Innovation of allocation and usage mechanisms of the state budget for science and technology development.

To amend and supplement the criteria to determine S&T mission using the state budget to suit the needs, management and execution capacity of each level, which clearly defines the criteria for distinguishing the S&T projects at the state, ministerial and grassroots levels. Construction and issuance of frame systems for economic and technical norms to apply to the projects, schemes and financial norms for cost-estimate preparation, cost-estimate allocation and acceptance and assessment criteria for S&T products based on the output criteria together with the amendment

and supplement process of State Budget Law. To promote the study of S&T products in association with outputs, to meet the needs of society and to attract investment capital, commercialization of research results from the business. To change the missions development based on the requirements from the S&T organizations from requirements of society and market and in association with the usage location/adress, to ensure the coherence of financial resources among stages (defined missions, organizations to study, apply and deploy).

To increase the decentralization, enhance the role, responsibility, autonomy of the sector ministries, sectors and localities in the management and usage of funds for S&T activities. To simplify cost-estimate preparation procedures, acceptance, settlement and disbursement for the schemes and projects. To enhance the openness, transparency and democracy in the financial management of S&T public institutions, to strengthen inspection and supervision of S&T results/findings, thereby to improve accountability.

To form a system of assessment indicators for the completion and quality of implementation of assigned missions of S&T public institutions in association with the usage of the state budget together with the inspecting and independent evaluation organizations.

Completing the information and reporting regime, accounting and financial work and accountability for the results of the service-providing organizations of S&T public institutions.

4.2.6. Supporting solutions

4.2.6.1. Capacity enhancement for S&T officials

Firstly, innovation of organization and management mechanisms of S&T human resources. Secondly, strengthening to integrate the research with applications to motivate the S&T officials. Thirdly, development and implementation of the development strategy of S&T human resources. Fourthly, equipment and investment in technical facilities.

4.2.6.2. Awareness raising of science and technology.

Firstly, raising social awareness. Secondly, bringing science and technology into life. Thirdly, the formation of a network of science and technology propaganda

CONCLUSION

The Thesis has focused on researching the following issues:

1. Financial autonomy and self-responsibility for Science and Technology public institutions is closely related to the responsibility, the State assigned S&T public institutions to have rights for making decisions on financial issues for themselves but they must be responsible for such decisions before the Law, the State and requests from the beneficiaries related to services provided by themselves. The financial autonomy and self-responsibility has a mutual relationship with the autonomy and self-responsibility of other activities within the institutions. The financial autonomy and self-responsibility in S&T public institutions is a limited autonomy regulated by the State in terms of scope, degree of autonomy for certain financial activities in the institutions. Considering the internal financial mechanism and its relationships with elements related to the implementation of financial autonomy and self-responsibility mechanism in S&T public institutions in other countries, the thesis author found lots of similarities. Although the development level and socio-economic and historical characteristics are different, all countries considered administrative reform, including financial autonomy and self-responsibility in S&T public institutions is an important mission of governments. The objective of financial autonomy and self-responsibility in S&T public institutions is to adapt to new situations, solve effectively the emerged S&T problems that the private sectors can not deal with in the international integration trend, and at the same time, quickly overcome the inadequacies of the S&T public institutions system, make the financial activities of the S&T public institutions transparency. The financial autonomy and self-responsibility mechanism in S&T public institutions in other countries related to other autonomy contents, including property ownership and usage rights, S&T missions implementation, HR management. Contents of financial autonomy and self-responsibility mechanism in S&T public institutions in other countries focus on some following fields: operational funds of S&T public institutions; allocation and management of the state budget in S&T public institutions. Issues of financial autonomy and self-responsibility mechanism in S&T public institutions in other countries to be addressed included: Implementing the economic accounting regime for S&T public institutions as for the enterprises; The financial regime of S&T public institutions has its own idiosyncrasies.

2. Innovation of financial autonomy and self-responsibility mechanism for Science and Technology public institutions in the result-oriented approach is understood as conciliation of all elements regarding to autonomy mechanism, financial sustainability for public institutions of Science and Technology, which include: inputs, activities, outputs and long-term impact.

3. The financial mechanism for S&T public institutions has been innovated in many aspects and achieved positive results; however, the process of implementing autonomy mechanism has also exposed some points required further improvement and additions. Reviewing the financial mechanism within S&T public institutions, we find some urgent issues as follows:

Firstly, funding modality for regular activities for S&T public institutions has revealed a number of limitations: (1) S&T public institutions always tend to request for increasing their regular officials in order to receive the regular operating fund; (2) Many people wants to become regular officials of these S&T public institutions so that they have opportunities to get stable monthly salary paid by the State, participate in the research projects which provide them with additional incomes, which makes researchers in the S&T public institutions be distributed and the leaders have also difficulties in the management; (3) leaders of the S&T public institutions must “struggle” with the balance of financial revenues and expenditure so as to maintain the operation; (4) the incomes of S&T regular officials in the S&T public institutions at present are calculated as an average, completely opposite to the particularities of the research activities which are considered innovative, have not been evaluated properly, causing the “brain drain”; (5) leaders of the S&T public institutions are lack of necessary tools to operate their organization (such as making decisions for salary payment, income for each official based on their contribution and devotion to the organization).

Secondly, funding modality for performing the S&T mission reveals some limitations: (1) Time for funding under the annual inflexible action plan and slow implementation of research missions; (2) The cost norms are incompatible with the practices of S&T activities; (3) Payment and settlement procedures are inflexible and complexible; (4) Incentives for researchers in S&T missions reveal some shortcomings: per diem is too low and not enough to offset the cost and effort of S&T researchers; conditions, technical facilities for research activities are not much invested compared with S&T institutions in the region and internationally, to create favorable conditions for scientists in conducting research; the research payment is not calculated based on the outputs and lack of transparency.

Thirdly, financial resources for S&T activities have been increased annually recently, mainly from the state budget, but compared with the average investment for science and technology of the world (2% of GDP), the investment in science and technology of Vietnam (about 0.5-0.6% of GDP) is still far behind.

4. From the orientation of the Party and State's policies on the autonomy of S&T public institutions and innovation perspective of financial autonomy and self-responsibility mechanism in S&T public institutions, the author proposes a solution for innovation of financial management mechanism for scientific public institutions,

on the basis of enhanced autonomy, self-responsibilities of the S&T public institutions as follows:

(1) Innovation of existing legal regulations; (2) Innovation of funding modality for regular activities through missions by making the cost-estimate for regular activities integrated to missions of S&T public institutions; (3) Innovation of financial mechanisms for S&T missions from the State Budget, including: enhance the cost-norms for S&T missions in line with the practices, innovation of lumpsum modality in implementing S&T missions using the State Budget, towards to lumpsum modality for the end products; innovation of funding modality for S&T activities into Fund mechanism; (4) Establishment of income fund for salary and wages payment for regular S&T officials; (5) Efficiency enhancement of resources mobilizing for S&T investments by diversifying the investment resources for science and technology, innovation of allocation and usage mechanisms of the state budget; (6) Supporting solutions such as capacity enhancement for S&T officials, awareness raising of science and technology.