

THE UNIVERSITY OF TAMPERE

School of Management

MASTER PROGRAMME OF PUBLIC POLICY AND FINANCIAL MANAGEMENT

**EVALUATION OF FINANCIAL AUTONOMY MECHANISM AT DALAT NUCLEAR
RESEARCH INSTITUTE**

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CHAPTER 1: INTRODUCTION

1.1 Research rationale

Due to the socialist-oriented market economy and the socialization of public services, public service units in Vietnam are not only simply implementing the projects and activities delegated by the State but also executing its own activities to provide services for the society. The financial resources of these units are not only provided by the state budget, but also by service delivery which have been exploited to generate more revenues for the public service units.

Realizing this reality, the Government has promulgated the regulation on autonomy and self-responsibility for the performance of tasks, organizational structure, staffing and finance for public service units. This regulation has created a legal corridor to improve autonomy for public service units. Financial autonomy and self-responsibility is always a central issue that needs to be carefully built, implemented in the most scientific and creative way. Science and technology public service units are also granted the right to employ the mechanism of financial autonomy under the control of Decree 115 (Government, 2005).

Science and technology (S&T) is the motivation of the stable development and growth of each nation. In fact, countries focus on spending properly especially the state budget expenditure for S&T will build a strong foundation of science and technology, creating a momentum for economic and social development. In Viet Nam, for the past years, the field of S & T has been studied to base on the “give- and- take” and approval mechanism, limiting activities of researching. For the matter of fact, it is necessary to have some changes in the running method of S&T organizations, especially to the autonomy mechanism.

Basing on above I mentioned problematic facts, the Ministry of S&T developed an innovation scheme of S&T management mechanism and coordinated with the Ministry of Internal Affairs to propose the Government to issue the public Decree No. 115/2005/ND-CP regulating mechanisms of autonomy and self-responsibility of scientific organizations and technology on 5/9/2005. Organization of science and technology running under this mechanism is considered as an unit which covers the full cost of regular activities (FCORA), has autonomy, self-responsibility for their activities and subjects to inspection and control of a governing body. Decree 115 includes three

basic contents: Autonomy in the development and implementation of tasks, organizational autonomy and payroll, financial autonomy and property of S&T organization.

Decree 115 is the revolutionary solution to the change in the management mechanism of S&T, especially financial management change, creating the active position for scientists, S&T organizations operate under the corporation mechanism or turn into S&T corporation, quickly introducing scientific and technological advances into practical production, improving the efficiency of scientific research and technological innovation, increasing the proportion of social investment, particularly by enterprising to develop S&T.

For the Nuclear Research Institute (NRI), the Institute has changed into partial autonomy mechanism of funding under Decision No. 4242 / QD-BKHHCN since 31/12/2013. After nearly three years of implementing the Decision, the conversion of operating under the new mechanism has brought many positive changes; however, there also are some limitations and shortcomings in the implementation process. This is the background for the research topics: *“Evaluation of financial autonomy mechanism at Dalat Nuclear Research Institute”*. The thesis is through the research and field surveys to contribute to support implementing mechanisms of autonomy and self-responsibility in the case organization.

1.2 Research Context

Since July 2007, a year after the birth of Circular 12 guiding the implementation of Decree 115, the articles and research papers began to appear, in which the difficulties and challenges that the public organization of science and technology encountered and needed to overcome when transforming the mechanism of autonomy and self-responsibility as stipulated in Decree 115. Due to the complex nature and various specific points of the management and the organization of science and technology, revolutionary breakthrough reforms of autonomy and self-responsibility and also by each local unit are demanding to accomplish according to the good ideas of Decree 115.

For the NRI, since applying the mechanism of financial autonomy and self-responsibility so far, there have not been any research projects, assessments analyzing this problem. Therefore, studying properly the subject will contribute to further improvement of financial autonomy - a solution to reform public finances.

1.3 Objectives of Scope of the Research

Objectives

The topic focuses on analyzing, evaluating and strengthening financial autonomy mechanism at the Institute of Nuclear Research (Dalat).

This thesis is conducted in order to investigate financial autonomy, analyze and evaluate the financial autonomy mechanism at the Institute of Nuclear Research (Dalat) during the period 2014-2016 after the implementation of Decree 115. Depending on the findings and analysis, solutions are proposed to strengthen the financial autonomy mechanism at the Institute of Nuclear Research (Dalat).

Specific objectives of the thesis are as follows:

- to describe the theory of financial autonomy of public service units;
- to assess the current situation of implementing the financial autonomy mechanism at the Institute of Nuclear Research (Dalat);
- to propose some recommendations to strengthen the financial autonomy mechanism at the Institute of Nuclear Research (Dalat).

Scope of the Research

The thesis is focuses on analyzing, evaluating and strengthening financial autonomy mechanism at the Institute of Nuclear Research (Dalat) since the reform of financial autonomy mechanism at NRI (12/31/2013) up to now.

1.4 Research questions

- Which concepts of financial autonomy are applicable to the public service units in Viet Nam?
- How did the financial autonomy mechanism affect the Nuclear Research Institute after 3 years of implementation?
- How did the financial autonomy mechanism affect the Nuclear Research Institute after 3 years of implementation?
- Which solution has been applied by NRI in order to change based on the mechanism of financial autonomy as stipulated in Decree 115?

- Which solutions that need to be studied and additionally applied to complete the mechanism of financial autonomy?

1.5 Methodology and Data Summary

Evaluation Study

The evaluation study is one of the methods of qualitative secondary analysis. Evaluation studies assess the processes and consequences of innovations in social policy or organisations. Evaluation studies are often applied in social research in order to measure and explain social changes (Reinking & Alvermann, 2005). In the evaluation studies, the researcher focuses on process and outcomes. In terms of process, the evaluation studies involve in who is involved; how are they involved; did it work? In terms of outcomes, the evaluation studies involve in which consequences or results changes cause or the outcomes are positive or negative? (Payne G. & Payne J., 2004). Evaluative research is undertaken to assess the worth or success of something: a programme, a policy or a project. Social evaluation is not a method or technique like social surveys or participant observation (Abdai and Miklósi, 2016). It is a particular and increasingly common type of applied social research which might employ any of the other research methods discussed in this.

In this thesis, evaluation study is employed to assess the implementation of the mechanism of financial autonomy as stipulated in Decree 115 at the Institute of Nuclear Research. The evaluation study gathers both primary and secondary data to analyze the current status and efficiency of application of Decree 115 at NRI. Depending on the findings, recommendations for improve the efficiency of the financial autonomy are proposed for the State and the NRI.

Secondary data collection

The thesis gathered data from the following sources:

- The Institute of Nuclear Research (Dalat): Organizational structure and staffs of the Institute of Nuclear Research (Dalat)
- Data related to the financial status of the Institute of Nuclear Research (Dalat) during 2014-2016 include: Sources of revenue and distribution of revenue at the Institute of Nuclear Research (Dalat) during 2014-2016, and expenditure and distribution of revenue and expenditure differences at the Institute of Nuclear Research (Dalat) during 2014-2016; Allocation of funds and additional income at the Institute of Nuclear Research (Dalat) during 2014-2016; Legal regulations from the Ministry of Science and Technology, the Ministry of

Finance and the Government; Academic reports, thesis and research from universities and institutes; and the internet.

The data and methodology are explained with more details in Chapter 3.

Survey

In this thesis, the survey was conducted with the accounting team to analyze the capacity of the accounting team and their assessment with the implementation of financial autonomy. A survey of 5 questions was delivered to 4 accountants to gain the planned objectives.

In-depth interview

In-depth interviews are one of the most common qualitative methods. One reason for their popularity is that they are very effective in giving a human face to research problem. In-depth interviews are usually conducted face-to-face and involve one interviewer and one participant. In-depth interviews are useful for learning about the perspectives of individuals, as opposed to, for example, group norms of a community, for which focus groups are more appropriate (Morris, 2015). They are an effective qualitative method for getting people to talk about their personal feelings, opinions, and experiences.

In this thesis, in-depth interviews are directly executed with the board of directors of the Institute and some staffs at the Institute of Nuclear Research (Dalat); they are called key informants. These key informants are asked some questions to express their opinions and evaluations on the following issues:

- The results of application of financial autonomy mechanism at the Institute of Nuclear Research (Dalat).
- Their recommendations to strengthen financial autonomy mechanism at the Institute of Nuclear Research (Dalat).

The interview questionnaire is included in the Appendix.

1.6 Structure of the research

The research includes the following parts:

- Chapter 1: Introduction

- Chapter 2: Literature Review of Financial Autonomy For Public Scientific & Technology Organization
- Chapter 3: Data And Methodology
- Chapter4: Current Status of the Implementation of the Financial Autonomy Mechanism At Dalat Nuclear Research Institute
- Chapter5: Orientations and Solutions Improving the Autonomy Mechanism at Dalat Nuclear Research Institute.
- Chapter 6: Conclusion
- References
- Appendix

CHAPTER 2: LITERATURE REVIEW OF FINANCIAL AUTONOMY FOR PUBLIC SCIENTIFIC & TECHNOLOGY ORGANIZATION

2.1 Public service units of science & technology

2.1.1 Concept, characteristics, classification of Science & Technology public service units

According to the dictionary of market economy: "Public service units are non-business units, which take the economic, cultural and social welfare objectives as its main objectives. Some objectives of public service units are social development, human development, science and technology research and development, research institutions, etc. Staff of non-business units are state staffs and under the control of the State. Funding is mainly based on the allocation of state budget funds, partly based on self-responsibility"

In the Statute of Registration Management of Non-Profit Organizations of the State Council of China, public service units are defined as social organizations operating for the purpose of public objectives in education, science, culture and health ... established by the State or by other public agencies with using state property (Fan, 2010).

It is first defined in the Laws on Officials in 2010 that: Public service units are organizations set up by the competent State agencies, political organizations or socio-political organizations under the provisions of law. These units have legal entitlement and serve for public service delivery, and State management (The Vietnam National Assembly, 2010).

From the above-mentioned concepts, it can be concluded that: Public service units are non-business units established or permitted by the competent state agencies. Public service units are organizations that are owned and operated by the government and exist to provide services for its citizens; and public service units do not seek to generate a profit. The areas which public service units covers can vary by country, but in most countries public service units include such services as the military, police, infrastructure (public roads, bridges, tunnels, water supply, sewers, electrical grids, telecommunications, etc.), public transit, public education, science and technology, environment, along with health care and those working for the government itself, such as elected officials. Funding for public services are usually raised through a variety of methods, including taxes, fees,

and through financial transfers from other levels of government (e.g. from a federal to a provincial or state government).

Concept of science and technology public service units

From the concept of public service units, it can be defined that science and technology public service units are state-run non-business units operating in the field of science and technology development to provide public services for the society with non-profit purposes (Ramesh et al., 2010). In the course of operation, these non-business units are allowed to collect fees, for cadres and civil servants and replenish the recurrent costs of regular operations of the units.

Characteristics of science and technology public service units

Firstly, the activities of these public service units are social in nature and different from those of ordinary services which serve the essential interests of the society. The activities of science and technology public service units do not directly create wealth for the society, but it directly affects productions conditions, production development, production force and production relations and decides social labor productivity. Public service activities in science and technology public service units are always linked and influenced by the state's socio-economic development programs. In the market economy, the state organizes and maintains public service activities to ensure the performance of socio-economic development tasks.

Secondly, the exchange of public services between public service units and organizations and individuals does not through adequate market relations; that means public service activities are not the same as those of the business. There are services for which the user has to pay all fees or charges while some services the user has to pay only a part of fees. However, these science and technology public service units provide these services not for profit-oriented objectives.

Thirdly, the operation of science and technology public service units does not directly serves the state administrative management; also science and technology public service units do not have the legal power like the state administrative agencies. It is distinguished and separated from state administration activities.

Fourthly, science and technology public service units have regular revenues from non-business activities, so they differ from the state administrative agencies. These units can generate revenues for the state budget and are now granted for the financial autonomy and self-responsibility.

2.1.2 Role of science and technology public service units

The science and technology public service units have strong and long-term impacts on productive forces and productive relations, which are critical to social labor productivity because these units develop technologies for production development. The operation of public service units is a part of the economy and plays a particularly important role in the national economy: providing public services in education, health, culture, science and technology and environment with high quality which contributes to the development of the economy and society (Fonseca et al., 2016).

Science and technology public service units will increasingly meet the needs of the public by providing public services in terms of quantity, quality and efficiency. Additionally, these public service units carry out assigned political tasks such as: providing new technologies for the production development; conducting scientific research in different areas needed for the development of countries, training human resources in the application of new technologies; research and application of scientific and technological results for the national industrialization and modernization.

Science and technology public service units also raise awareness of all classes in the social community to contribute to the implementation of social justice and awareness of the society. Through state budget expenditures for public service activities, the Government has ensured that these units will be able to provide goods and services that meet social needs, create favorable conditions for all members of society, especially those who are beneficiaries of the benefits of public goods and services.

For each area of public service activities, public service units play the leading role in proposing and implementing projects and programs in service of socio-economic development of the country. By providing public services, science and technology public service units will implement fiscal autonomy and self responsibility to control operational costs and reduce the burden of budget spending and make incremental contributions for the state budget.

Through the collection of charges and fees in accordance with the regulations of the State, science and technology public service units have contributed to the diversification and socialization of resources in order to improve the development of society. In pursuit of the policy of socialization of non-business units of the State, over the recent time, science and technology public service units have actively expanded the services and reformed the operations to meet the increasing demands of

citizens. Along with that, public service units attract contributions of the people to invest in the development of public service sector.

2.2 Financial autonomy mechanism for science and technology public service units

2.2.1 Necessity and purpose of financial autonomy for science and technology public service units

The concept of autonomy, self-responsibility

Autonomy implies the freedom and authority enjoyed by public service units to play their role and contribute to societal development within the framework provided by the public authorities (Verzulli et al., 2018). Therefore, public service units' autonomy needs to be addressed within the context of the perceived and agreed upon role of public service units in society. Public service units' autonomy from this point of view may be defined as the freedom of a public organization to run its own affairs without direct control or influence by the government. Any influence exercised by the government may be based on legislative authority.

The concept of financial autonomy is provided by Oulasvirta and Turala (2013). To understand of financial autonomy, it is required to have the understandings of income autonomy and expenditure autonomy. Generally, financial autonomy is understood through its measurements and there are two different ways to measure financial autonomy, namely expert measurement and quantitative measurement.

Expert measurement is conducted through the interviews or the surveys with the experts whether they are asked about how deem of autonomy level in income and expenditure in local government system. It is denoted that the results from the interview or the survey reflect subjective opinions of the experts and their answers may be varied, depending on whom is asked but their answers are important in term of reflecting the relationship development between the state and local government.

Quantitative measurement is done through the examination and the investigation of historical data about income and expenditure of government's activities. After the data is examined quantitatively, the second step is conducted in which income and expenditure are classified by local governments with ordinal scale to be applied from low to high and this scale is aligned with decision-making power of local governments accordingly. Moreover, each income and expenditure source is weighted upon on the level of autonomy. This method has a problem of which different researchers

may provide different weight for each income and expenditure source, leading to the different results in the measurement of financial autonomy.

When the public sector dominated development and public service units enjoyed almost a monopoly in some provisions, the issue of organizational autonomy was settled largely through national legislation. Given the role of public service units in national development, governments needed to specify public service units' priorities in line with national priorities and establish the limits to public service units' autonomy. The ideal situation would have been for government to set priorities and trust public services units to carry out the tasks without intervention. However, governments lacked sufficient confidence in the public service units to grant them this autonomy (Huisman, 2007).

Over a period of time, governments progressively moved away from a state-mediated process towards a market process, redefining with it the role of public service units. Many governments adopted a governance model of steering public service units from a distance. In the past the main decision-maker had been the state; however, in the present context the stakeholders involved in decision-making are staffs of public service units.

Furthermore, the decline of direct governmental financing and control has been accompanied by an increasing demand for accountability measures. In other words, the multiple spheres associated with organizational autonomy come with many strings attached. It is a challenge for any public service unit to serve several tasks simultaneously. The recent trend is to extend the idea of autonomy to all spheres of public service units' activities. According to Berdahl (1971) public service autonomy can be substantive or procedural. Substantive autonomy gives public service units the authority to take decisions and operate with authority on their own goals and programs matters under their purview. The authority to link decision-making to action is expected to improve operational efficiency. Procedural autonomy implies freedom on administrative aspects without the real authority to take decisions, but greater authority to implement them.

Organizational autonomy implies appointive authority, especially in cases where the staff are not civil servants; financial autonomy has been granted in recent reforms primarily due to the inability of the public sector to support an expanding public service sector (Castro et al., 2018). Another factor is the administrative authority, which plays an important role in facilitating faster implementation of decisions.

2.2.2 The need to strengthen financial autonomy in science and technology public service units

The need to grant financial autonomy and self-responsibility for science and technology public service units is explained in the following section. Before that, the researcher analyzes the role of financial autonomy. Scurariu and Scurariu (2015) conduct a study about the link between financial autonomy and local development in Romania. These researchers provide quantitative measurement to explore this relationship and financial autonomy is measured through the ratio between local communities' revenues and their total budget while local development is measured through GDP growth rate of local communities. Obtained result shows that financial autonomy and local development are positively correlated with each other. On the other hand, Scurariu and Scurariu (2015) propose that the more financial autonomy, the more local development each local community could achieve in Romania. The need to strengthen financial autonomy is affirmed through the study of Desai et al. (2003) when these researchers examine about fiscal federalism and regional growth in Russian Federation during 1990s. It is denoted that financial autonomy is required in fiscal federalism and it is suggested that local governments need to control their revenues and expenditures in order to obtain higher regional growth. Moreover, the study of Bordignon et al. (2017) highlights the effect of local fiscal autonomy on political selection. This study affirms that fiscal autonomy in Italy in the 1990s brings higher efficiency of management in local government.

In Vietnam, the financial management mechanism of public non-business units before 2002 onwards was implemented in accordance with Circular No. 01TC / HCVX dated 4th January 1994 of the Ministry of Finance. At this provisional regulation the difference between revenue and expenditure after tax payment is 100% divided as follows: 65% for reward and welfare; 35% of recurrent expenditure support. There is a disadvantage in this Circular that it does not mention the core issue is to increase income from public service activities. This disadvantage leads to the situation that the public service units do not pay attention to expand production or technological renovation; and all staffs will receive the salary depending on salary levels and hierarchy, not the productivity.

In addition, there are still some shortcomings existing in the mechanism. The depreciation of assets from service activities and liquidation of fixed assets are remitted into the state budget not for the public services units, leading to the difficulty and complexity in funding for re-expansion of research and development, and service providing of public service units. Accordingly, budget

funding if not spent will be canceled or deducted from the following year's budget; therefore, in many ways, the public units find every means to increase their expenditures, thus causing waste and potentially negative impacts on the state budget. Also, income-generating public service units are not allowed to borrow capital or raise capital

Due to these shortcomings combined with the high annual economic growth rate, increasingly diversified and complex social issues and widespread international cooperation in public services, on 16th January 2002, the Government issued Decree No. 10/2002/ND-CP on the financial regime applicable to public service units. After a period of practical application, the inappropriate points were commented by many agencies. On 25th April 2006, the Government issued Decree No. 43/2006/ND-CP regulating the right to autonomy and self-responsibility for task performance, organizational structure, staffing and finance.

Financial autonomy is an indispensable requirement when the State adopts the policy of granting autonomy to public service units (Toth, 2009). The State, with the role of managing and developing mechanisms, ensures the system of affiliated units operating stably along the general directions. The promulgation mechanism is guiding, encouraging and controlling.

Financial autonomy creates a legal corridor for the operation of public service units. It includes a system of legal documents, circulars, decrees and decisions which create operating facilities for public service units. At present, the legal documents are accompanied with the contents of the norms of revenues and expenditures, the setting up of financial funds in public service units. Each activity at the unit has specific regulations and guidelines. Through the mechanism of financial autonomy, the State can distribute and use financial resources to maintain the operation and development of public service units and promote the use of funding in an economical and efficient manner. With the role of encouragement, the financial autonomy mechanism also increases initiative, creativity and self-responsibility in the operation of public service units (Jan, 2017). When applying financial autonomy, public service units will focus on improving operational efficiency, thus stimulating creativity in thinking and operation. Heads of units should promote the creativity of each individual.

2.2.3 The objective of the financial autonomy mechanism for science and technology public service units

According to Law on Organization of the Government dated 25th December 2001, the purposes of the autonomy and self-management mechanism are:

- To enhance the responsibilities and raise the activity, initiative, dynamism and creativity of scientific and technological organizations and of their heads.
- To create conditions for combining scientific research and technological development with production, business and human resource training, and speed up the socialization of scientific and technological activities.
- To create conditions for making concentrated investment in scientific and technological organizations.
- To raise the operation efficiency of scientific and technological organizations, contributing to enhancing the national scientific and technological potential.

2.3 Financial resources and expenditure of science and technology public service units

2.3.1 Financial resources of science and technology public service units

According to the Decree 115/2005/ND-CP issued by the Government in 2005, financial resources of science and technology public service units includes the following sources.

Funds allocated by the state budget

- Funds for the performance of the State's scientific and technological tasks assigned or ordered directly or through selection or bidding by state agencies, which are allocated by mode of contracting package (where the relationship between actors are regulated by the contract) on the basis of contracts for the performance of scientific and technological tasks, entered into between state agencies and scientific and technological organizations.
- Funds for regular activities.

The allocation of regular activity funds to scientific and technological organizations is stipulated as follows (Decree 115/2005/ND-CP):

For scientific research and technological development organizations as well as scientific and technological service organizations that are unable to self-finance their regular activities, competent state management agencies shall continue to provide regular activity funds for them in the period in preparation for organizational and operational transformation if such organizations have had schemes on organizational and operational transformation.

For scientific research organizations engaged in basic research or research into strategies and policies in service of state management, the state budget shall provide funds for their regular activities according to their assigned tasks; and they shall be organizationally restructured and consolidated to raise their operation efficiency. Their annual regular activity funds shall be allocated by mode of contracting package according to assigned functions and tasks.

Capital construction investment capital; project reciprocal capital; funds for the procurement of equipment and the overhaul of fixed assets.

Funds for the implementation of scientific and technological tasks;

Funds for implementing training programs for cadres and civil servants;

Funds for implementation of national target programs;

Funds for performing tasks assigned by competent state agencies (investigation, planning, survey, other tasks);

Funds for unexpected tasks shall be allocated by competent authorities;

Other funding sources (if any).

Revenues from non-business activities

- Charge and fee revenues according to regulations;
- Revenues from service provision;
- Revenues from scientific research, technological development and technology transfer contracts;
- Revenues from production/business activities;
- Revenues from other non-business activities (if any).

Other funding sources

- Fixed asset depreciation capital;
- Retained revenues from the liquidation of assets according to regulations;

- Capital mobilized from individuals and loan capital from credit institutions;
- Financial support capital, aid, donations and gifts of domestic and foreign organizations and individuals;
- Other lawful funding sources provided for by law (if any).

2.3.2 Expenditure of science and technology public service units

According to the Decree 115/2005/ND-CP issued by the Government in 2005, expenditure of science and technology public service units includes the following sources.

Expenditures on performance of scientific and technological tasks

To apply the mode of expenditure contracting package for the performance of the State's scientific and technological tasks (in forms of scientific and technological programs, subjects and projects) in all domains of scientific and technological activities (including scientific and technological tasks under national target programs, urgently assigned scientific and technological tasks), which are assigned or ordered directly or through selection or bidding by state agencies. Scientific and technological organizations may decide by themselves on the use of contracted funds for the performance of their tasks, ensuring the quality and implementation progress requirements under contracts.

Expenditures on wages

Scientific and technological organizations must pay wages and wage-based deductions to officials, employees and laborers at levels at least equal to those under the State's regulations on wage ranks and grades and positions.

When the State adjusts the minimum wage level, wage ranks or grades, or wage-based deductions, scientific and technological organizations must use their funding sources to pay wages and wage-based deductions to their officials, employees and laborers according to the State's adjustment. For scientific research organizations engaged in basic research or research into strategies and policies in service of state management, the state budget shall provide funds for their regular activities according to their assigned tasks; competent state management agencies shall consider the additional allocation of funds to each scientific and technological organization.

Appropriation for setting up funds

Annually, after paying all reasonable expenses and fulfilling obligations towards the State according to regulations, for the positive differences between revenues and expenditures (if any), scientific and technological organizations may make appropriations therefrom for setting up funds according to the provisions of law. Particularly, the minimum level of appropriation for setting up non-business activity development funds must be equal to 30% of the total positive revenue-expenditure difference.

The use of funds shall be decided by heads of scientific and technological organizations according to their regulations on internal expenditure.

Expenditures on other activities

For funds allocated from the state budget as provided for capital construction investment capital; project reciprocal capital; funds for the procurement of equipment and the overhaul of fixed assets and several other funds provided for their funding sources, scientific and technological organizations must abide by the State's regulations on spending criteria, norms and contents.

The Ministry of Finance shall provide for a number of State-allocated funds, which must comply with the State's regulations on spending criteria, norms and contents.

Scientific and technological organizations may decide by themselves on the use of funding sources for spending on their activities.

Expenditures on increased incomes

For the remaining fund balance after subtracting all expenditures and appropriations for setting up of funds according to regulations, scientific and technological organizations may decide by themselves on the spending thereof on the increase of incomes for their officials, employees and laborers according to their regulations on internal expenditure.

2.3.3 Autonomy mechanism of revenue management of science and technology public service units

According to the Decree 115/2005/ND-CP, the public service units are allowed to self-determine service prices on the principle of market for non-public service delivery. For public non-business

services using state budget funding, the units shall be allowed to decide on the charge rates according to the roadmap announced by the State.

To perform tasks assigned by the State, public service units are allowed to collect fees and charges. Part of the charges and fees are paid into the state budget according to the assigned tasks allocated at the beginning of the year, the remainder is left to the public service units' budget. Therefore, public service units should be responsible for drawing up plans for the collection of revenues and expenditures fully and accurately at the rates prescribed by the State (Welham et al., 2015).

For tasks assigned by state agencies, the fee collection and fee levels must be based on unit prices set by competent state agencies. In cases where the revenues have not yet been prescribed in specific norms, the finance agencies of the same level for approval of cost estimates shall have to set the fee range for each kind of task.

Apart from the above mentioned revenues, for science and technology public service units providing services under contracts for organizations and individuals, joint-venture activities; these units shall be entitled to determine appropriate revenues and charges so as to cover costs and expenses. At the same time, the State allows the public service units to raise capital from credit institutions and their staffs to invest in expanding and raising the quality of non-business activities of science and technology research and development. The public service units must be consistent with the functions, duties and self-responsibility of debt repayment in accordance with the law.

2.3.4 Autonomy mechanism of distribution and use of financial resources of science and technology public service units

Autonomy and self-responsibility of finance is the domination and decision, in parallel with the respective responsibility of the unit on revenue sources, sources of mobilization and allocation and use of financial resources and assets in order to effectively coordinate with other resources of the unit, to fulfill the assigned tasks, to maintain the development of the unit and increase the income of the employees (Yokoyama, 2009).

Financial autonomy and self-responsibility is limited to the public service units in which public service units have the active role in the financial management and the State agencies and governmental organizations will reduce or their powers and responsibilities of management in the operations of these public units.

Public service units shall exercise their financial autonomy and self-responsibility depending on their level of self-financing and regular expenditures (United Cities and Local Governments, 2009). Autonomy, coupled with financial self-responsibility, can both create and maximize the motivation for development for organizations and staffs, and regulate the use of that autonomy in the right way. The financial autonomy and self-responsibility are inseparable and connected tightly to each other. Autonomy and self-responsibility are the relationship of powers, interests and obligations.

The subjects of these relations are allocated to public service units, including the units and each member of the units. Autonomy of revenues includes: Public service units assigned by competent state agencies to collect charges and fees must correctly and fully collect charges at the rates and collectors prescribed by competent state agencies. In cases where the competent State sets the charge bracket, the unit shall base itself on the spending demand in service of its activities and social contribution capacity to decide on a specific charge level suitable to each type of operation and each subject. This charge level should not exceed the fee bracket set by the competent authority. For contractual service activities with organizations and individuals inside and outside the country, joint ventures, joint ventures and units may decide on specific revenues and charges according to the principle of ensuring sufficient offset costs and have accumulated.

Autonomy of financial expenditures: Depending on the assigned tasks and the financial capability for the regular expenditures, the unit heads may decide on a number of levels of management expenses, professional expenses higher or lower than the levels prescribed by state competent authority. Depending on the nature of work, the heads of the units shall decide on the package contracting method for each department or belonged unit. Decisions on investment in construction, new procurement and overhaul of assets shall comply with the provisions of law and regulations.

Autonomy on wages and salaries: For activities carried out for the functions and tasks assigned by the State, salaries and wages for officials and employees are prescribed by the state; For activities of supplying products ordered by the State with the wage unit price in the product unit price approved by the competent agency, the public service unit shall be calculated according to the prescribed wage unit price. If the product has not yet been determined by the competent agency, the wage unit price of the public service unit shall be calculated according to the rank and position wage set by the State; for service activities with separate cost accounting, the salaries and wages of employees shall be paid according to the wage regime in State enterprises. In cases where the expenses are not separately accounted, the units shall be calculated according to the rank and position wages prescribed by the State.

Autonomy on increased incomes: The State encourages public service units to increase revenues, save expenses, reduce payrolls and increase incomes for employees on the basis of fulfilling their assigned tasks. When fulfilling obligations to the state budget, depending on the financial performance results of the year, the unit shall determine the total annual income payment level of the unit, of which:

For units with financial autonomy and self-responsibility of operating expenditures, they shall decide on the total annual income level for their laborers after making deductions for the establishment of non-business operation development funds; For non-business units which partially self-finance their operation, they shall be allowed to decide on the total annual incomes for laborers but must not exceed 2 times the grade-based salary fund of the year after making deductions for establishment of non-business activity development fund. The payment of income to the employees in the unit is carried out on the principle that those who have high performance, contribute more to the increase in revenue and saving are paid more. The heads of units shall pay incomes according to their internal spending regulations.

When the State adjust the provisions on wages and raise the minimum wage; the increase of the rank-based salary and position under the State-prescribed regime (referred to as the increased wage as prescribed by the State regime) shall be self-assured by public service units from non-business revenues according to the regulations of the State. In case, after using the above-mentioned sources, they still fail to meet the increased wage levels prescribed by the State regime, the deficit shall be considered and supplemented by the State budget to ensure the common minimum wage level according to the regulations of the Government.

2.3.5 Distribution mechanism of revenue and expenditure differences of science and technology public service units

This is an indispensable financial category in science and technology public service units. The revenue-expenditure difference is one of the important issues that determine the right to autonomy and self-responsibility of finance as well as a motive force and a development objective of a public service unit.

The revenue-expenditure difference of the science and technology public service units is usually formed in the conditions for fulfilling the performance targets with the higher number of savings compared with the norms for the activities of creation, improvement and permission or with the same resource, completed task volume is bigger than assigned.

As stated, nonprofit activity is not for profit, the pursuit of profit is a tradeoff of the nature of service and dedication of public service units. The relationship between lucrative activities and pure professional activities is mutually exclusive and mutually supportive, creating a distinct point of public service unit and in line with the current development trend

2.3.6 Manage and use the capital and assets of science and technology public service units

Science and technology public service units have no choice but to stretch resources as far as possible. With revenues reduction and infrastructure deterioration, science and technology public service units need to get maximum value from existing assets. And even while budgets are getting tighter, demands for high quality service and accountability increase every day. Science and technology public service units need to ensure assets are available, safe, reliable, and performing to design standards.

As noted in the research on *Renovation of financial management mechanism for income -generating units* by Tran Thu Ha (1997), in order to manage and use the capital and assets effectively, science and technology public service units should:

- Track and report costs accurately against assets and activities.
- Plan, schedule, and execute effective maintenance programs.
- Create detailed asset inventories and public service unit-specific asset inspections
- Record and track requests for service.
- Leverage technology to create a more accurate inventory of infrastructure assets
- Provide compliance support for current and future asset related regulations.

All uses of capital and assets must comply with the regulations of the State and the internal rules.

2.3.7 The need to improve the financial autonomy of science and technology public service units

Financial autonomy is gradually creating a reform within public service units, particularly in science and technology public service units. Through the autonomy regime and self-management, science and technology public service units redefine their organization and development goals. In particular, science and technology public service units put the stress on the process of creating and

using financial resources. This process is the most important process in the autonomy mechanism for the public service unit. However, after many years of implementation of regulations on financial autonomy, it has been indicated that there are some obstacles for fiscal autonomy in public service units due to the limitations of issued policies. Some policies or degrees on fiscal autonomy have not issued timely; which leads to the fact that the science and technology units have not had enough legal foundations to implement activities of fiscal decentralization. Additionally, the related Ministries and agencies have not yet guided the implementation of the right to autonomy and self-responsibility in the performance of tasks, organizational apparatus and payrolls for public service units. The evaluation criteria for the performance of public service units when implementing financial autonomy and self-responsibility have not been clearly and officially defined. Therefore, the responsible ministries, sectors and agencies should, in the near future, take all these important issues into account to adjust, improve and complete the financial autonomy mechanism for public service units (XuanTuyen- NhatBac, 2012).

Improvement of financial autonomy and self-responsibility enables public service units to promote initiative and creativity. The fact that public service units are given the right of financial autonomy and self-responsibility emerges from the requirements of state management practices for the performance of certain important public services. With the aim of higher efficiency, the State should carry out the review and further improve the financial autonomy mechanism which is correlated with each stage of development and create favorable conditions for the operation of public service units.

Due to the development of the society and economy, there is a high competition between public and non-public service units in all sectors and industries. Public service units face the fierce competition from other non-public organizations because these organizations have many advantages due to their financial autonomy and self-responsibility. The State cannot provide protection for these public service units. As a result, in order to ensure the proper performance of their functions and tasks, it is necessary to ensure the autonomy and self-responsibility of the public service units. Public service units should be given the right to be self-reliant in mobilizing capital sources to invest in strengthening facilities, renovating equipment and facilitating the expansion and development of non-business activities in line with their respective functions and assigned tasks. At the same time, when being delegated the right to implement financial autonomy, the public service unit can diversify public services they deliver, which leads to the expansion of revenue in total.

Along with the exploitation of revenue sources, public service units with the mechanism of financial autonomy and self-responsibility can find solutions to save costs and consumption of raw materials. Moreover, the public service units can develop more streamlined scientific delivery processes such as training processes, coordination processes, etc.

The autonomy mechanism creates suitable conditions for public service units to control internal expenditures, promote democracy, initiative and creativity of employees to improve their management skills and quality of activities. This shift navigates the operating mechanism from input management to output management mechanism.

The enhancement of financial autonomy in public service units encourages the expansion of revenues and reduces the burden of spending. The active exploitation of revenue from public service units will reduce the burden of expenditures on the state budget and proper implementation of science and technology investment expands production and supply of public services to society.

The State encourages public service units to actively shift to the operating mechanism in the form of financial autonomy and self-responsibility.

2.4 Factors affecting financial autonomy mechanism for science and technology public service units

The success of the implementation of financial autonomy and self-responsibility mechanism depends on the legal system; the development of the labor market; management capacity of the governing agencies and endogenous capacity of public service units.

2.4.1 Policies and guidelines of the State

The regulation of financial management will impact on the effectiveness of financial management process, according to Mobegi et al. (2012). The first problem is that financial management in public companies is often treated too generalized, mostly from top-down direction not bottom-up consolidation (Hallerberg and Hagen, 1999), leading to the non-transparency in preventing the budget from financial issues and financial malpractices. On the other hand, this problem also referred to the problem of controlling financial practices among sub-units of public firms and sometime fiscal decentralization principal will not be maintained well (Hallerberg and Hagen, 1999). The second problem is that public companies are still relying on the revenues and costs from sub-units to derive the income planning while top-down approach in financial management is still available, leading to the mismatch and conflicts between headquarter and sub-units.

In another context, many public companies today are dealing with unrealistic budgeting, hidden financing sources, and financial plans are often prepared for short term only (Schick, 1998). The unrealistic financial plan is explained by the fact that approved budget is not controlled well and double check so there are a lot of cost items is overvalued. Hidden financing sources are determined as there are hidden relationships between various ladders in financial management system and they share the interests without disclosure as it is violated core principals. Finally, short term financial plans are common practice in developing countries whether financial system and national accounts are not perfectly established.

In a market economy, the State has a macro management role; all state policies affect activities of public service units in the implementation of fiscal autonomy and self-responsibility.

The State builds and develops the legal system, makes guidelines, orientates and monitors the process of financial autonomy and self-responsibility in public service units. The State also supervises and ensures that all activities of public service units are in the accordance with the legal framework and governmental regulations.

Policies and tools such as financial policy, investment, salary, income and expenditure of the state have a great impact on the financial mechanism of public service units. The policy system must be compatible with the competitive and market-oriented mechanism to enhance the proactive role of the public service units. In other words, if the State has the policies and guidelines for the effective execution of financial autonomy, it will make great contributions to the development public service units.

In the past 10 years, the State has issued many documents with high legal value on the reform of financial management mechanism. Among them, Decree No. 115/2005 / ND-CP dated on 5 September 2005 regulating autonomy and self-responsibility mechanism of the public science & technology organizations (Decree 115) and Decree No. 43/2006 / ND-CP dated on 25 April 2006 regulating autonomy and self-responsibility for performing tasks, organizational structure, staffing and finance for public service units (Decree 43) are the two outstanding decrees which regulate and guide the public service units in implementing the mechanism of financial autonomy and development. These legal documents represent regulations on sources of finance, capital raising, use of financial resources and development of internal expenditure in public service units. Science and technology public service units can decide the use of payroll, labor, operational and financial reorganizations when doing assigned tasks. These new mechanisms also help to promote the ability

of the science and technology public service units to provide qualified services and to ensure openness, transparency, quality and efficiency of work and income of employees.

2.4.2 Management capacity of governmental agencies

The management capacity of governmental agencies is the important factor that promotes the change in service activities of public service units. The management capacity of governmental agencies can become the motivation for the successful implementation of financial autonomy and self-responsibility, if the management capacity is high enough. In contrast, it can become the obstacle for public service units in operating the mechanism for fiscal autonomy, if the governmental agencies do not have enough the management capacity. The managerial ability is defined as important context in financial management process (The Institute Chartered Accountants, 2012). It is referred to the fact that top managers of companies need to be updated by recent trends in financial management capacities, knowledge of proper financial management, and high perception on changes in the market that might be potential impacted on financial performance of the companies in both of short and long run. Mobegi et al. (2012) also asserted that financial managers of companies should be equipped by advance knowledge and managerial skills in order to better prepare financial planning process as well as aligning all financial management activities to support general goals and business objectives. Mestry (2006) also highlighted the important role of the board member whether they need to establish high-level framework of essential financial management or principals that people in their companies have to be complied during financial management process. They should have the capacity of addressing issues and push employees to strictly following general rules and principles.

The management capacity of the governmental agencies is demonstrated in the two following categories:

The scientific, flexible and effective organizational structure: It means that governmental agencies should employ one-stop mechanism in working to eliminate intermediate administrative units. The one stop mechanism means various requirements can be met at only one unit. All intermediates should be dismissed to ensure the transparency and efficiency of all tasks and assignments. At any level, the responsibility of the head of the organization must be clearly defined in order to promote accountability, contribution, creativity of the individuals and the whole organization.

One of the driving forces for the financial autonomy and self-responsibility in public service units is the market oriented economy; that is the reason why the governmental agencies should have the

management thinking of the market oriented economy when monitoring the implementation of fiscal autonomy in public service units. This thinking will ensure dynamism and creativity in public service units

2.4.3 Endogenous capacity of public service units

The endogenous capacity of public service units includes needed financial resources, human resources, environment and information for service providing activities. All these elements in the endogenous capacity of public service units will support the process of financial autonomy and self-responsibility in public service units; so it is necessary to enhance the endogenous capacity of public service units. Riley (2006) indicated that the lack of transparency at level of financial management will lead to deterioration in financial management performance. Many companies in public sector rather than in private sector often face it, leading to corruption and non-transparency of financial management also. Riley (2006) asserted that the lack of transparency at level of financial management may cause to budget deficit but sometimes budget deficit is good one. It is argued that the government can borrow money from external sources to facilitate for budget deficit and it is also required the government has to improve financial management capabilities through public education and training programs.

Some ways to enhance the endogenous capacity of public service units are as followed:

The human resources staffs: They are the key factor for the development of public service units. Therefore, the public service units have to ensure that they have enough quantity and quality of the labor force to implement the financial autonomy mechanism.

The managers: The managers consist of persons who directly implement and control the process of financial autonomy in the public service units. Therefore, it is important that the management staff have enough competencies and skills for the successful implementation of financial autonomy mechanism. Especially the staff of finance department needs to be able to develop and mobilize capital.

CHAPTER 3: DATA AND METHODOLOGY

3.1 Methodological rationale

The word “evaluation” can be interpreted quite broadly. With different people and organizations, it brings different meanings. For example, engineers may evaluate or test the quality of a product design, the durability of a material and efficiency of a production process. Critics may evaluate or review the quality of a restaurant, movie or book. A financial manager may evaluate the financial policies or credits at an enterprise. The introduction of evaluation study generated from the evaluation of social programs and policies by the researchers at J-PAL to improve the well-being of the world’s poor (Rossi et al., 1999).

In a simply manner, a evaluation study is employed to answer the question, “how is our program or policy doing?” This can have different implications depending on who is asking the question, and to whom they are talking. The evaluation study can answer the question: was the program or policy effective? But if thoughtfully designed and implemented, it can also answer the questions, how effective was it? Were there unintended side-effects? Who benefited most? Who was harmed? Why did it work or not work? What lessons can be applied to other contexts? There are six types of evaluation study including Needs Assessment; Program Theory Assessment; Process Evaluation; Impact Evaluation; Cost-Benefit, Cost-Effectiveness, and Cost-Comparison Analysis and Goals, Outcomes, and Measurement. In the evaluation of financial autonomy at the NRI, Process Evaluations, Impact Evaluations and Goals, Outcomes and Measurement are employed (A. Gerber and D. Green, 2012).

Process evaluations are useful for managers and measure whether the milestones and deliverables are on schedule. In the case of the NRI, before the implementation of the financial autonomy, all the procedures are just in the plan. But once launched, the implementation meets on-the-ground realities: Is the organization adequately staffed and trained? Are responsibilities well assigned? Are the intermediate tasks being completed on schedule? Process evaluation, also known as implementation assessment or assessment of program process, analyzes the effectiveness of operations and implementation of financial autonomy (Rossi et al., 1999).

Impact evaluations are designed to measure whether programs or policies are succeeding in achieving their goals (Gertler P. et al, 2011). . In the case organization, the implementation of financial autonomy is designed to achieve a certain goal (or a set of goals) . Impact evaluations gauge the success of the implementation of financial autonomy at the NRI. They help the NRI weed out less effective interventions from successful ones and also help the NRI improve existing

policies and approaches. The primary purpose of impact evaluation is to determine whether the implementation of financial autonomy has an impact (on a few key outcomes), and more specifically, to quantify how large that impact is. What is impact?

In conducting any assessment, evaluation, or analysis, it is imperative to think about how progress can be measured. Measuring indicators of progress – keeping the implementation plan’s goals and expected outcomes in mind—requires significant thought as well as a system of data collection (Gerber and Green, 2012). This is covered in Goals, Outcomes and Measurement.

3.2 Research approaches

Quantitative and qualitative methods represent different ways data can be collected and used to inform the evaluation (Easterby-Smith et al. 1991).

According to Ticehurst et al., (1999) quantitative approaches give numerical results, for example the percentage of increase in the revenue of the NRI after the implementation of financial autonomy. Quantitative methods are most used to assess the outcomes of the financial autonomy employment at the NRI.

Qualitative approaches use narrative or descriptive data rather than numbers subject (Ghauri et al., 2002). For example, a description of the views and opinions of the managers and employees at the NRI about the implementation of financial autonomy and their thoughts on how it could be improved.

Both qualitative and quantitative methods can be appropriately used alone or in combination in the evaluation study.

3.3 Sources of data

In general, there are two main sources of information collected in the research including primary sources of information and secondary sources of information (Easterby-Smith et al. 1991). Primary data is collected by the researchers for the first time or this data cannot be found in previous data sources or this data is not prepared and collected by previous researchers. Secondary data, however, refers to the information which is collected by previous researchers in different studies. Secondary data is collected from books and journals which share the same topic with this study while primary data is collected from the interviews or the questionnaires with the respondents who are respective to the studied topic.

3.3.1 Primary sources

The major primary data collection method employed in this research is survey with questionnaire and in-depth interviews. The survey was conducted with 4 staffs of the accounting who directly participated in the process of implementation of financial autonomy. The four accountants were delivered with a questionnaire of 5 questions about their personal information, qualifications, experiences and their assessment of outcomes of the implementation of financial autonomy at the NRI. Lastly, the effectiveness of the implementation was rated by the employees.

The in-depth interviews were executed with the managers of the NRI. The director and four Heads of Department at the NRI including HR Department, Financial Department, International Cooperation Department and R&D Department were contacted and participated in the in-depth interview. Some open questions were given to the managers to gather their opinions in the directions, plan, goals, measurement, implementation procedures and outcomes of the financial autonomy at the NRI. Further improvement recommendations were given by the managers for the efficiency of the financial autonomy at the NRI.

3.3.2 Secondary sources

Secondary data are those which have been collected and stored by others and I can easily get them from records, annual reports or articles. Secondary data is mainly used because it is not costly and hard for researcher to collect (Easterby-Smith et al. 1991). Secondary data was collected by qualitative methods. There are many sources of secondary data used in the thesis.

Annual reports:

- Report of revenue and distribution of revenue at the Institute of Nuclear Research (Dalat) during 2014-2016.

- Report of expenditure and distribution of revenue and expenditure differences at the Institute of Nuclear Research (Dalat) during 2014-2016.

- Report of allocation of funds and additional income at the Institute of Nuclear Research (Dalat) during 2014-2016.

- Legal regulations from the Ministry of Science and Technology, the Ministry of Finance and the Government.

- Academic reports, thesis and research from universities and institutes about the implementation of the financial autonomy at the public service units in Vietnam.

- The internet: the articles and e-books about the evaluation study methodology and the implementation of financial autonomy at public service units in Vietnam

In terms of primary data collection, participation of respondents in the research is absolutely voluntary. The respondents' privacy and anonymity are of a paramount importance during the survey implementation. In addition, any information collected in the research is recorded and analyzed with honesty and transparency. In terms of secondary data collection, the acknowledgement of works of other authors used in any part of the research with the use of APA referencing system is presented in the research. The researcher is now working for NRI for 3 years and some information is taken from actual observation towards how financial autonomy is conducted at this organization. During the process of conducting the research, the maintenance of the highest level of objectivity in discussions and analysis throughout the research is ensured.

CHAPTER 4: CURRENT STATUS OF THE IMPLEMENTATION OF THE FINANCIAL AUTONOMY MECHANISM AT DALAT NUCLEAR RESEARCH INSTITUTE

In this chapter, the researcher will analyze the collected data. In accordance with the procedure described in Chapter 3, the data was collected through survey with questionnaire which has been sent to accounting staff and in-depth interviews with the managers of Dalat NRI. The analysis from the available data will consist of both qualitative and quantitative data. In addition, secondary data was collected by using the annual report of Dalat NRI from the year 2014-2016.

The findings from the data analysis will be summarized and referred back to Chapter 2 on each issue (Kondracki et al., 2002). The findings will also be directed to the objectives of this thesis:

- to describe the theory of financial autonomy of public service units;
- to assess the current situation of implementing the financial autonomy mechanism at the Institute of Nuclear Research (Dalat);
- to propose some recommendations to strengthen the financial autonomy mechanism at the Institute of Nuclear Research (Dalat).

The first part of this chapter will start with the overview of Dalat NRI. It will present some of the history and development of NRI, together with the research directions of NRI, duties, responsibility and achievements. The next part will stress on the analysis of the implementation of the financial autonomy mechanism at Dalat NRI. This part will provide the final answers to address the research questions.

4.1 Overview of Dalat Nuclear Research Institute

4.1.1 History and development

On the basis of taking over the Dalat Atomic Research Center, the Nuclear Research Institute (Dalat) was established under Decision No.64/CP of April 26, 1976 of the Prime Minister. Due to the development needs of the sector and on the basis of the National Institute for Nuclear Research (Dalat), Decree No.59-CP dated February 23, 1979 of the Government Council established the Institute of Nuclear Research with the head office located in Hanoi, including the Dalat Nuclear Research Institute. Decree No.87-HDBT on June 11, 1984 of the Council of Ministers renamed the Institute for Nuclear Research into the National Institute of Atomic Energy and the Nuclear

Research Subdivision of Dalat into the current Nuclear Research Institute. In March 2014, the 30th anniversary of the inauguration of the Rehabilitation and Rehabilitation Works of Dalat Nuclear Reactor is also commemorating the 35th anniversary of the National Institute for Nuclear Research. From the day it was named Dalat Nuclear Research Institute.

The Institute of Nuclear Research (NRI) is responsible for technical management, safe operation, efficient exploitation of Dalat Nuclear Reactor and other scientific and technological equipment for scientific research, technology transfer and human resource training for the country. The NRI takes the responsibility:

- To ensure the safety of NRI's operations;
- To carry out basic research in the fields of nuclear physics, reactor physics, analytical chemistry, radiation chemistry, radioactive chemistry, radioactive biology, environmental and dose measurement techniques, amount of radiation;
- To provide technical assistance to the state management and development of the sector in the fields of radiation safety, nuclear safety, radioactive waste management and treatment, management and operation of environmental radioactive observation stations, radiation and nuclear measurement and calibration equipment, response and handling of radiation and nuclear incidents;
- To develop capacity building on material and technical facilities and training human resources for the development of the Institute and the sector;
- To carry out research and development, applied research, technical services and production and business activities in the fields of radioisotopes and radioactive isotopic preparations, composition and element analysis in samples, radioactive technology, biotechnology, environmental impact assessment, equipment manufacture and related fields for the development of nuclear and atomic energy applications for socio-economic development country.
- To carry out joint venture and cooperation with domestic and foreign agencies in the fields related to the functions and tasks of the Institute to promote the transfer and exchange of technological processes and products of Institute with production facilities, research institutions and training.

According to Decision No.4242/QĐ-BKHCHN dated 31/12/2013, from January 1, 2014, the Institute operates under the autonomy and self-responsibility mechanism defined in Clause 3, Article 4 of

Decree 115/2005/ND-CP and Decree No.96/2010/ND-CP amending some articles of Decree 115/2005/ND-CP; Joint Circular No.12/2006/TTLT/BKHHCN-BTC-BNV and No. 36/2011/TTLT/BKHHCN-BTC-BNV; the NRI is also assigned to train PhDs in theoretical physics, atomic and nuclear physics, chemical analysis and inorganic chemistry.

4.1.2 Milestones of Nuclear Reactor

There are some milestones of nuclear reactor in Vietnam. The construction of TRIGA Mark II Reactor started in the early 1960s. On 26th February 1963, TRIGA Mark II reactor reached its first critical state. After a week of operation, the reactor reached a nominal capacity of 250 kW on 4th March 1963. During the period 1963-1968, the reactor was operated for three main purposes: training, research and isotope production. Then due to the war the reactor paused its operations from 1968 to 1975. In this pause period, all scrapped fuel rods returned to the United States. One of the most important milestones of Nuclear Reactor in Vietnam occurred in October 1979 when Vietnam and the Soviet Union signed the TRIGA Mark II Rehabilitation and Rehabilitation Contracts. According to this contract, in 1982 the TRIGA Mark II was renamed to IVV-9 or Dalat Nuclear Reactor. In November 1983, IVV-9 reactor reached its first critical state, using the Soviet Union's high-enriched fuel (HEU) VVR-M2. Following, in March 1984, the inauguration of the Dalat Nuclear Rehabilitation worked with a rated capacity of 500 kW.

Since 1984, the reactor has operated with the various objectives of: producing radioactive isotopes; analyze samples using neutron activation technique; basic research and applied research to bring advances of nuclear science and technology to socio-economic development; train and train staff. During the period from September 2007 to May 2011, the reactor operated with mixed operations of high enriched fuel (36% U-235) and low enriched (19.75% U-235). On 30th November 2011, the reactor reached the critical state for the first time with active zone of low enriched fuel.

4.1.3 Research directions of the Nuclear Research Institute (Dalat)

- To study the physics and techniques of the furnace to ensure the safe operation of the reactor, focusing on the research and development of neutron, hydrothermal, alternatives to the fuel return for the reactor and the calculation and design of the operational area to replace high-enriched fuel (HEU) with low enriched fuel (LEU);
- To design and manufacture equipment such as underwater camera system to monitor the status of the components in the furnace, the flask system, the radioactivity system, the fuel system

pump-valve control system, zone dosing system, upgrading, replacing furnace control system, upgrading liquid radioactive waste treatment station;

- To study, build processes and ensure the quality of water for ovens,...
- To use of neutron flux transduction channels of the reactor to conduct basic research on nuclear physics, nuclear data and nuclear structure on filter neutrons.
- To study the development of technological processes for the preparation of radioactive isotopes and radioactive pharmaceuticals for the diagnosis and treatment of diseases in the health sector and to meet the needs of customers in other application areas
- To study marked monoclonal antibody, peptide with I-131, Lu-177 used in the treatment of cancer,...
- To research and develop methods of nuclear and related analysis, standardization of accurate quantitative processes of elements, components and toxins in geological samples, oil and gas, environment,...
- To research the development of low-level radioactivity measurements; distribution features, rules for the accumulation and conversion of natural and man-made radioactivity in environmental objects, and participation in collaborative research programs on environmental monitoring.
- To use nuclear techniques with natural and artificial isotopes to study environmental processes related to soil erosion, sediment transport and deposition of marine structures; To step by step study and develop technical procedures for environmental treatment by nuclear and related technologies; Research using radio isotope marking technology in agro-industry;
- To research, design and manufacture functional electronic blocks such as spectral gain, pulse discrimination, ADC, coincidence, MCA; specialized equipment systems such as single and multichannel amplitude analyzers, radar counters and radios; Study new electronic engineering applications such as FPGA, PIC and DSP.
- To research application of radiation technology in sterilization, preservation of agricultural products and pharmaceuticals; Modify and manufacture new materials such as: water-soluble polymer, saline-resistant and high temperature for oil recovery; silver nanoparticles for root canal

fungus; chitosan cut off additional radiation in poultry feed to increase chicken production efficiency; Gel A-311 to the quality of Basa diesel; polymer water antipyretic for crops,...

- To research to build collections and preserve mushroom gene sources with many species; to ensure optimal conditions for the cultivation of medicinal mushrooms and foodstuffs; research on mutant radio activating biology to create new varieties and flowers; to study the development of plant tissue culture methods on the varieties of flowers, fruit trees and rare industrial plants.
- To research on completion of radiation assessment in the body; research and manufacture individual dosimeters by the method of heat radiation (TLD) measuring different types of radiation; study and apply optimization and standardization in neutron dose estimation; research the development of bioassay-based dose-dependent biopsy specimens; study high dosing techniques.
- To research and develop procedures for the management and treatment of radioactive wastes, including liquid and solid waste and emission, and to develop a process to support the radiation facilities in the south in management and treatment radioactive waste.

4.1.4 Duties and responsibilities

- Managing, operating safely and effectively exploiting Dalat Nuclear Reactor;
- Carrying out scientific research and development of the application of nuclear technology and atomic energy in various sectors of the national economy.
- Building the capacity of material facilities and training human resources for the development of the Institute and the industry.
- Ensuring safety in the activities of the Institute; closely supporting the state management of radiation safety and nuclear safety; studying the development of radioactive waste treatment and emergency response technologies in radiation and nuclear incident handling; carrying out environmental radiation observation in the national network, checking radiation equipment and equipment for measuring radiation doses as decentralized by the competent state management agencies
- Carrying out the transfer of technology and technical services in the field of atomic energy and related fields in accordance with the law.
- Participating in joint-venture and cooperation with domestic and foreign agencies in the domains related to the Institute's functions and tasks according to the provisions of law.
- Managing the organization and personnel of the Institute according to the current regulations of the State.

4.1.5 Achievements

1. Till the end of 2013, the reactor had 37,800 operating hours safely and efficiently. This indicator is also an achievement proving that the Institute has gathered a team of scientific, technical and multi-disciplinary staffs who are trained in industrial working style, master in operation and security, maintaining, securing, and exploiting major and important scientific equipment. It is important that the Dalat Nuclear Reactor is the first and only nuclear reactor in Vietnam to participate in the implementation of the project to build an upcoming high-power research reactor.

2. The NRI has successfully researched and developed about 30 types of radioisotopes and markers for the use in the health sector and in some other economic technical fields. Only in the health sector, by the end of 2013, the Institute has provided about 5,500 Ci radioactive isotopes of ^{131}I , ^{32}P , $^{99\text{m}}\text{Tc}$, ^{51}Cr , ^{153}Sm , ^{65}Zn and in-vivo and in-vitro assays. 07 kinds of products of the Institute have been put on the list of drugs of Vietnam since February 2010.

The Institute has also consulted and designed domestic medical facilities to invest in building nuclear medicine and radiotherapy departments, contributing to the rapid development of nuclear medicine departments in particular and promoting application of nuclear technology and radioactive isotopes to general economic-technical branches.

3. The NRI has built analysis methods: INAA, RNAA, PGNAA, X-ray fluorescence, low activity, liquid flash, liquid chromatography, gas chromatography, atomic absorption spectrometry, ion chromatography, ultra-spectroscopy, visible and ultraviolet spectroscopy, flame photometer, fluorescence analyzer, etc. These analytical methods allow analysis of up to 70 different elements and indicators, responding well to the needs of geological analysis, exploration for mineral resources, oil and gas, agriculture, biology and the environment, etc. In the past 30 years, over 77,000 samples have been analyzed for the sectors. At present, each year the Institute provides services to the industries with the average of about 60,000 different analysis criteria. The Institute has been granted with VietGAP certificate of Lam Dong DARD; the laboratory of the VILAS-519 Certification Center is VILAS-525 Certified Environmental Center.

4. The methods of nuclear analysis and support at the Institute of Industrial Property have been very effective in researching and warning the environment, especially the assessment of environmental pollution caused by industrial production. By the end of 2013, nearly 17,000 samples of the environment were collected, analyzed and stored. These figures have contributed to the formation of the national environmental data collection. The environmental monitoring station is recognized

by the Institute as a station within the national environmental monitoring network. The Institute has the capacity to carry out the tasks of setting up and managing environmental monitoring stations at the two sites that will become the location for the first nuclear power plants in NinhThuan province.

5. Environmental radioisotopes (^7Be , ^{210}Pb , ^{137}Cs) have been well used to evaluate environmental processes such as sedimentation and sedimentation of irrigation, oil erosion, soil nutrient loss, etc. The Institute's environmental research experience has evolved into a service oriented approach to environmental impact assessment (both radioactive and non-radioactive) for the investment projects, traffic works, and construction in the past years.

6. Research in the field of marking technology and using closed source has also achieved many results. The Institute has cooperated with specialized agencies to carry out applied research on survey and assessment of sediment transport in the access channels (Hai Phong port, Can Tho port) which effectively support the maintenance of dredging of navigable channels and survey of sedimentation of hydroelectric reservoirs (Tri An, Thac Mo, Ham Thuan - Da Mi).

The Institute has also succeeded in research and development of radiation technology for food preservation, disinfection and denaturation of materials. The research results of the Institute created the basis for the establishment of industrial irradiation centers in the South. The institute has been producing and supplying various kinds of T & D plant growth stimulant, olicide plant pathogenic and antifungal; polymer water; polymer subjected to high temperature and pressure, etc. Direction of application of radiation technology in the production of environmentally friendly bio-preparations is also implemented.

8. In the field of radioactive-biology, the Institute has studied and successfully used mutant gamma radiation to create new varieties and flowers. Mushroom growing technology, especially some precious medicinal mushrooms, has been carefully studied and transferred to farmers. In-vitro propagation technology has been implemented for some rare and precious plants and flowers to provide disease-free seeds to farmers. The Institute is also involved in preserving and conserving biodiversity of botanical resources in Lam Dong province in particular and the Central Highlands region in general.

9. In the field of electronic equipment, the Institute is qualified to maintain a wide range of electronic devices, especially nuclear electronics, including reactor control and technology. The Institute has designed and manufactured nuclear electronics for medical and geological sectors; nuclear control systems for industrial use, electronic mass spectrometry systems for service of

research and training, gold-plated measuring instruments using X-ray fluorescence technology for gold and silver jewelry businesses.

10. Another prominent result is the successful development of radiation dosing and control, radioactive waste treatment and management methods. This mission not only helps the Institute to ensure the safety of its staff and its surroundings, but also helps to ensure radiation safety for about 8,000 radiation workers per year of more than 700 radiation facilities in the country.

Dosing estimation techniques for chromosome abnormalities of blood cell lymphocytes have been used to determine the dosage for workers working in radiation incidents, typically radioactive sources incidents in 2002 Huyndai Vinashin Company, Khanh Hoa; radioactive source loss incident at the end of 2007 at PTSC Marine Engineering Company, Vung Tau; high-risk incident at the workplace in early 2008 at Lilama, Dung Quat, QuangNgai; incident in irradiation occurred in 2012 at Petroleum Technical Services Corporation.

11. Effectiveness of staff training: Through the implementation of science and technology topics / tasks, domestic and foreign projects, the staffs of the Institute continue to be supplemented with advanced knowledge, qualification, experience and professional competence; On the academic level, up to now many staff have reached the postgraduate level (20 PhDs, 45 Masters). Every year, the Institute will have 5-7 PhD students in the fields of nuclear physics and analytical chemistry. At the same time, the Institute supports the other institutions in the country to provide undergraduate and postgraduate degrees in physics, chemistry, biology and the environment (about 12-15 students with graduate university thesis and 7- 10 students with Master's thesis) and opens training courses on the application of particle technology, radiation safety, nuclear safety, reactor technology, etc.

The Institute has contributed to building the material and technical resources and training human resources for the development of the sector, contributing to the formation and expansion of the market for application of scientific and technological advances. Nuclear, necessary foundation and firm belief to participate in the project to build and operate.

4.1.6 Organizational structure

The Science, Technology and Training Council of the Institute is established by the Director, which takes the responsibility to give advices to the Director on important issues related to science and technology activities and training. The Institute can set up Councils of Emulation, Reward, Discipline ... to advise the Director on specific tasks. The Council operates under the Regulation

issued by the Director based on the general regulations of the State and the Institute of Nuclear Research.

The Institute's Safety Council is established by the Director, which takes the responsibility to give advices to the Director on safety in R & D activities of the Institute. The Council operates under the Regulations promulgated by the Director on the basis of the provisions of the Ordinance on Radiation Safety and Control and relevant documents of the State.

4.2 Analysis of the implementation of the financial autonomy mechanism at Dalat Nuclear Research Institute

4.2.1 The financial autonomy mechanism on financial resources at Dalat Nuclear Research Institute

Financial autonomy mechanism at Dalat Nuclear Research Institute is evaluated through secondary data and primary data. At first financial resources of the institute is explored and then the financial autonomy mechanism is investigated through current policies to be effective accordingly. Finally, the analysis of the factors affecting the mechanism for financial autonomy of the Institute of Nuclear Research is conducted with the input from in-depth interviews.

4.2.1.1 Financial resources of Dalat Nuclear Research Institute

Since the implementation of the financial autonomy mechanism, financial resources of Dalat Nuclear Research Institute have come from its own production activities and service delivery. Sources of finance are noted as follows:

- Manufacture and supply of radioactive substances and markers to 25 organizations of nuclear medicine research and production within the country, including I-131 solution and capsule, plate and solution P-32, Tc-99m generator and 17 in-vivo markers with Tc-99m, and in-vitro T3, T4 kits with the average 350 Ci/year.
- Providing nuclear analytical techniques, low activity measurement and other combined techniques for quantitative analysis of elements in different types of samples with high precision for the geological sector, oil and gas, agriculture, biology, environment, quality control of export goods, etc.
- Providing the service for environmental monitoring and evaluating projects.

- Providing environmental isotopic and artificial isotopic techniques to determine the rate and cause of sedimentation of irrigated and hydropower reservoirs, other marine constructions such as estuaries and navigable channels.
- Providing environmental impact assessment services for investment projects, transport works, construction works, etc.
- Design and manufacture of nuclear electronics for nuclear medicine, research and production and training institutions in the country;
- Providing maintenance, repair and calibration services, assembly of nuclear electronics and automatic control systems as required by customers.
- Providing individual dosing services by TLD, chromosomal analysis, inspection and calibration of radiation measurement equipment, radiation safety assessment for equipment systems and facilities.
- Producing and supplying agricultural products such as stimulant, growth and plant protection products T & D 4DD from natural radiation-modified polysaccharides, preventive preparations and fungicides OLICIDE 9DD from chitin, chitosan shells modified radiation, water-soluble polymers, salinity-resistant and high temperature for enhanced oil recovery; polymer water drought tolerant; Silver nanoparticles cure root rot of cabbage by fungus, ..
- Storing and transferring the cultivation process of pharmaceutical and food fungi (Lingzhi mushrooms, abalone). Providing clean plant seeds to meet the needs of farmers.
- Producing and supplying chromosomal microscope template sets for normal and abnormal subjects serving the training program of biology towards the renovation of secondary education in the whole country.
- Organizing national and regional training courses on radiation safety and the application of nuclear technology in the areas of agro-industry and environmental protection, reactor technology, non-destructive testing of samples (NDT); human resources training (graduate study thesis, master's degree, doctoral student, specialized internship, etc.); professional technical training in the direction of using nuclear energy to meet the needs of socio-economic development and nuclear power development program.

- Other services: Interests from bank deposits.

Furthermore, the leaders must be flexible and creativity in the project. The leaders must be flexible because if one task meets the problem which cannot solve, the leaders will change another. Furthermore, the leaders must create the best scenarios for all members to joint together in order that they can relax and work better. And the leaders can understand about the leadership style.

There are four kinds of leadership styles: tell (autocratic), sells (persuasive), consults (participative), and joins (democratic). First, “tell style” means that the managers will give all decision, and they will not accept another idea from team members. Second, “sell style” means that the manager will listen more than talk and supply all information which relate to objectives of the project, furthermore, the leader also concerns about the contribution of team members, the leader will consider all objectives and give the right decision, however the leader does not remember to say again his decisions and will compare to another ideas to give the best decision. Third, “consults style”, this means that the leader will not give the direction of the tasks for team member, each team member will do their tasks and the leader will follow all activities in each task, and concerns about the relationship between team members to solve the conflict in the team. Final: joins (democratic), this style will help the manager to understand his team members, the leader can share everything with the others, furthermore the leader concerns about each team member and participate in all activities of team in order that the project will be done very well.

Today’s successful leaders bring their members into the planning process, tying decisions on department and division level to those made on the senior level. They create an environment in which staff members are free to learn — to make mistakes if they learn from them — and to apply their learning in real-world situations that go beyond the requirements of their job descriptions or their boxes in the organization chart, if one still exists. In order to practice shared management—and become a valuable leader in organization—there are several core competencies (for instance: skills, abilities, knowledge and attitudes), leaders need: understand any new areas of responsibility and the skills and background of staff members to make the best match of people and assignments. Listen actively: this involves listening both to what is said and what is not said. Maybe even more important, it means listening to your members’ opinions and concerns with a willingness to change your own opinion.

Operate on purpose. There should be a relationship between each task you or a staff member does and the objectives or goals of your department or organization as a whole. Emphasize growth and

opportunity. No matter what the situation, leaders/managers attempt to present their staffs a picture of a glass half-full, not half-empty.

Train members to think critically. Encourage them to examine the how, why and what they are doing as they complete their work. Allow them the opportunity to question how things were done in the past and to come up with new procedures, processes or practices that enable them to more efficiently or effectively do the tasks.

Delegation is the process of assigning tasks and granting sufficient authority for their accomplishment. The one to whom authority is delegated becomes accountable to the superior for doing the job, but the superior still remains responsible for getting the job done. The idea of delegation is to make sure that responsibility and authority are equal for every job. When delegation is implemented correctly, people have the authority that they need to execute their responsibilities. Authority and responsibilities are formal aspects of the group. They are based on upon organizational properties and not individual capabilities. Empowerment and ownership are social aspects of organization. They are based on efficacy and initiative, and not just on roles and requirements. They belong to people.

4.2.1.2 Distribution of financial resources at the Nuclear Research Institute (Dalat)

The Nuclear Research Institute (Dalat) is the public service unit which has implemented the mechanism of financial autonomy and self-responsibility for 3years; therefore, regular income mainly comes from production activities and service delivery of the Institute without the source of funding from the state budget. Therefore, this thesis only deals with the exploitation of revenue sources from the services and other revenue of the NRI.

It is possible to assess the revenue situation of the Nuclear Research Institute (Dalat) through the following table:

Table 1: Financial resources at the Nuclear Research Institute (Dalat) during 2014-2016, Unit: VNDb

Criteria	2014		2015		2016	
	<i>Revenue</i>	<i>Compared with previous year (%)</i>	<i>Revenue</i>	<i>Compared with previous year (%)</i>	<i>Revenue</i>	<i>Compared with previous year (%)</i>
Isotope production	11,100,374,500	102.7	13,021,658,150	122.0	15,547,923,780	114.8
Biology technology	366,438,095	107.8	367,714,282	100.3	402,122,000	109.4
Radiation technology	41,657,145	111.4	138,000,000	331.3	43,983,120	31.9
Others (electronics)	41,285,714	103.9	21,371,429	51.8	52,980,900	247.9
Radiation safety service	5,297,341,466	136.5	4,364,903,474	82.4	5,720,400,000	131.1
Analysis Services	3,462,286,921	92.6	3,582,291,500	103.5	3,752,340,760	104.7
Environmental services	1,936,684,503	106.3	1,422,214,878	73.4	1,903,650,450	133.9
Training services	1,082,204,786	127.9	1,614,285,685	149.2	2,172,968,300	134.6
Other services (Interests from bank deposits)	20,258,433	82.9	16,133,219	79.6	12,423,100	77.0
TOTAL	23,348,531,563	105.6	25,075,562,061	107.4	29,608,792,410	118.1

Source: Annual Report 2014, 2015, 2016 of NRI

The Table 1 shows the positive effect of the shift in revenue structure and revenue. Revenues of the NRI have fluctuated over the recent years; the total revenue of the unit has increased during 2014-2016 after the implantation of the mechanism of financial autonomy and self-responsibility and mainly from production activities and service delivery.

In 2014, it reached VND 23,348,531,563 with a 5.57% increase compared to 2013. The numbers are VND 25,075,562,061 with 7.40% and VND 29,608,792,410 with 18.08 % respectively for 2015 and 2016. It can be seen that the revenue of the Institute of Nuclear Research (Dalat) experienced a significant increase in 2016. This is due to the implementation of financial autonomy and self-responsibility mechanism for recent years. The activities which bring the most revenues for the NRI are Isotope production, Radiation safety service, Analysis Services, Environmental services, and Training services... Most of these sectors have seen the increase in the revenue since 2013.

For other revenue sources (income from bank deposit interest): According to the regulations for projects funded by state budget, they must not be deposited into bank accounts but must be controlled and deposited in the State Treasury. On the other hand, the NRI is a public service unit which conducts research programs with the capital source from the state budget, the unit idle money was not deposited into the bank account but kept at the State Treasury so the interest was negligible.

The increase in revenue for years is due to the reform in the organization and operation caused by the financial autonomy mechanism in order to meet the market demand and support the development of society and economy.

4.2.2 The financial autonomy mechanism on Expenditure of the Nuclear Research Institute (Dalat)

In order to effectively manage expenditures of the NRI, the NRI has developed a system of internal expenditure regulations. Internal spending regulations serve as a basis for the Director of the Institute to manage the use and settlement of expenditures from the unit's non-business revenue sources. This system also takes the role as a legal basis for spending control, including revenues and expenditures within the scope of the current regulations of the State and specific contents of the units which the State has not yet prescribed.

In general, since the implementation of the financial autonomy mechanism, the NRI has developed an internal expenditure regulation, stipulating the appropriation and use of funds according to the current regulations, specifically:

4.2.2.1 Expenditure

Regular expenditures: expenses for regular activities related to the functions and tasks assigned by the competent authorities; expenses for regular activities in service of the charge and fee collection by the NRI including: wages, allowances, deductions for social insurance, health insurance, unemployment insurance and trade union dues according to current regulations; public service; stationery, professional expenses; expenses for regular repair and maintenance of fixed assets and other expenses according to the prescribed regime;

Expenditures for service activities including: wages, allowances, deductions for social insurance, health insurance, unemployment insurance and trade union dues according to current regulations; raw materials, fuels, materials; expenses for depreciation of fixed assets; fixing fixed assets; taxes payable in accordance with the law; other expenses (if any);

Irregular expenditure, including:

- Expenditure for performing tasks assigned by competent state agencies, irregular tasks assigned by competent authorities. For tasks with techno-economic norms, the unit prices promulgated by competent authorities shall comply with the prescribed unit prices and actual volumes. For tasks without technical and economic norms, the unit price estimates shall comply with the current financial regulations of the State and approved by competent authorities.
- Expenses for capital construction investment, purchase of equipment and overhaul of fixed assets in service of non-business activities of units under projects approved by competent authorities;
- Other expenses (if any).

4.2.2.2 Current status of expenditures in the Institute of Nuclear Research (Dalat)

Table 2: Expenditures of the Institute Nuclear Research (Dalat) during 2014-2016, Unit: VNDm

Expenditures	2014	2015	2016
Wages and administration expenses	17,222	22,843.80	27,436.92
Functional activities	1,790	2,266.35	3,287.15
Research projects	1,622	1,670.00	2,106.00
Devices and equipment	5,400	3,600.00	527.00

Expenditures	2014	2015	2016
Maintenance	500	4,776.00	613.00
Training	0	0	800.00
International cooperation	150	0	300.00
State-level projects	270	0	650.00
Environmental protection	650	653.34	517.00
Total budget	27,604	35,809.49	36,237.07

Source: Annual Report 2014, 2015, 2016 of NRI

The table 2 shows that the expenditure for the operation of the Institute of Nuclear Research (Dalat) has increased during 2014-2016, but the rate of investment in facilities is still low and has decreased annually. The financial resources for investment in equipment improvement have not met the requirements of the NRI.

Regular expenditures for wages and administration expenses and functional activities account for the largest proportion of total expenditure. This is the main expenditures of the unit to meet the assigned tasks, which are also expenditures for financial autonomy under the provisions of law.

In recent years, recurrent expenditure of the unit has increased rapidly, contributing to improving the quality of work. However, the distribution of funds between groups of expenditure is not optimal, private expenditure and professional expenditure accounts for a high proportion and the allocation of funds for investments and equipment is low. Especially, the expenditure for staff training is too low.

Autonomy in regular expenditures

Group 1

Payment for individuals includes wages (contract salary), allowances, deductions for social insurance, health insurance, unemployment insurance and trade union dues according to current regulations

This expenditure belongs to the group of personal expenses. Of the total recurrent expenditure, this expenditure is relatively high. Specifically, in 2014 the Institute spent VND 17,222,000,000 accounting for 62.39% ; in 2015, the expenses for salary and administration was VND 22,843,800,000 accounting for 63.79%. The increase was demonstrated in both the number of

expenses and the proportion in the total expenditure. The year 2016 continued to experience the increase in the expenditure for individuals when the expenses for salary and administration were VND 27,436, 920,000 accounting for 75.72% - a great proportion.

In general, when implementing the financial autonomy mechanism, the Institute of Nuclear Research (Dalat) has proactively identified the salary fund as the basis for setting up the funds and setting the norms; the NRI has also structured the proportion of expenses for each group on the contents of salary payment. Wages can be defined depending on the rank and position. This expenditure is regulated by the State and is implemented according to the formula with little change over time. The changes only occur when the payroll is allowed to change due the policy regime.

Group 2

Expenditure for research projects and state level projects assigned by the authorities. One of the main functions of the Institute of Nuclear Research (Dalat) is conducting assigned research projects for all levels. Since the employment of the mechanism for financial autonomy, the expenses for this function have increased year by year. In 2014, the Institute used VND 1,622,000,000 for the investment in implementing the scientific research; the numbers for 2015 and 2016 are respectively VND1,670,000,000 and 2,106,000,000.

Besides, the Institute has the responsibility to conduct research projects assigned by the State, this kind of project is called state-level project. In 2014, the budget spent for state-level project is VND 270,000,000. Accordingly, in 2015 no projects is implemented; and in 2017 the increase in the number of assigned projects went hand in hand with the increase of expense with VND 650,000,000.

Group 3

Expenditure on purchase of device and equipment, asset procurement and maintenance.

This group of expenditure is the center of interest when the Institute implemented the financial autonomy mechanism because this expenditure group plays the important role in improvement of the Institute's facilities and technology in the implementation of the research projects. Expenditures on this group are delivered for four main goals: Maintaining and developing fixed assets, maintaining and developing workplace facilities, maintaining and developing equipment and technology for research projects, maintaining and developing knowledge and skills for staffs. This expenditure group is monitored strictly by the regulations and need to be increased in the period of industrialization and modernization.

The Institute of Nuclear Research is one of the public service units who pay much attention to the investment in the fixed assets, devices and equipment, and technology. In 2014, the expenses spent for new purchase of device and equipment were VND 5,400,000,000 accounting for 19.56%, a relatively high proportion. In 2015, the Institute continued spent VND 3,600,000,000 for buying new equipment and technology served for the purpose of research and production. Although the number has decreased, it still accounted for 10.05% of total expenses. After two years of the huge investment for new equipment and technologies, the expense decreased dramatically to VND 527,000,000 in 2016. This is reasonable because in the two previously the Institute invested VND 9,000,000,000 for improvement of facilities and technologies.

The expenses for procurement and maintenance quite fluctuated. In 2014, the number was only VND 500,000,000; however, in 2015 the number was more than nine times that in 2014 with the number of VND 4,776,000,000. The number fell to the level of VND 613,000,000 in 2016.

Group 4

Direct expenses for professional activates including expenses for functional activities, training and international cooperation,

This is a group that requires a lot of management because it is closely related to the quality of service and the direction of the Institute. Because of this reason, the number of money spent on this group has increased for years. The total expenditure for this group is VND 1,940,000,000; VND 2,266,000,000; VND 4,387,000,000 respectively in 2014, 2015 and 2016; in which the expenditure for functional activities constantly increased year by year while the expense for training was only VND 800,000,000 in 2016 and for international cooperation was VND 150,000,000 in 2014 and VND 300,000,000 in 2016. These numbers in this group raise the need in the increase in the expenditure for training and international cooperation which greatly contribute to the development of the Institute of Nuclear Research.

4.2.3 Distribution mechanism of revenue and expenditure differences of the Institute of Nuclear Research (Dalat)

The financial autonomy mechanism encourages the Institute to increase the revenue and reduce the expenditures in order to enhance the revenue and expenditure differences. The revenue and expenditure differences in the Institute of Nuclear Research (Dalat) are demonstrated in the following table:

Table 3: Revenue and expenditure differences in the Institute of Nuclear Research (Dalat) during 2014-2016, Unit: VND

Year	Revenue and expenditure differences
2014	1,833,674,302
2015	1,963,384,324
2016	2,317,962,210

Source: Annual Report 2014, 2015, 2016 of NRI

The annual increase in the number of Revenue and expenditure differences in the Institute of Nuclear Research (Dalat) during 2014-2016 has indicated that the mechanism for financial autonomy has been quite effectively implemented in the NRI for recent years. The number is VND 1,833,674,302 in 2014; VND 1,963,384,324 in 2015 and VND 2,317,962,210 in 2016. Compared with 2014, the number in 2015 experienced 7.07%; and compared with 2015, the increase proportion in 2016 was 18.06%.

4.2.4 Autonomy on fund establishment and allocation of the Institute of Nuclear Research (Dalat)

4.2.4.1 Current status of fund establishment

To implement the regulation on internal expenses and regulations of the State on the deduction for the establishment and use of funds, annually after the payment of expenses, taxes and other payments as prescribed, the revenue and expenditure difference is used to finance for the development of non-business activities, the payment of increased incomes to laborers and deduction for the welfare fund.

Table 4: Fund deduction in the Institute of Nuclear Research during 2014-2016, Unit: VND

Fund	2014	2015	2016
Development fund	-	353,409,178	489,254,290
Wage increase fund	733,469,721	785,353,730	617,320,000
Welfare fund	1,100,204,581	824,621,416	1,211,387,920
Total	1,833,674,302	1,963,384,324	2,317,962,210

Source: Annual Report 2014, 2015, 2016 of NRI

Development Fund

This fund is used for investment and development of non-business activities, supplementation of investment capital for construction of material bases, procurement of working equipment and facilities, learning technology, training to improve skills and capacity for employees of the Institute, experience exchange... This fund is also used to devote capital to joint venture and international cooperation in order to provide products and services in line with the assigned functions and duties and the capacity of the Institute in accordance with the law. The use of the fund is decided by the director of the Institute.

In 2014, there is no money deducted for the development fund. In 2015, VND 353,409,178 was devoted to the fund of development of the Institute. The number increased to VND 489,254,290 in 2016. These numbers respectively accounted for 18% and 21.11% in the revenue and expenditure difference of the Institute.

Wage increase fund

The financial autonomy mechanism encourages the Institute to increase revenue and expenditure differences at the end of the year to contribute to the fund for supporting the staffs' wage increase. This support will make the staffs committed and devoted to the Institute and directly enhance the performance of the staffs.

The table 4 shows that the Institute has increased the number of money devoted to the Fund of wages increase support in 2014 and 2015. In 2014, the Institute contributes VND 733,469,721, accounting for 40% and in 2015 the number was VND 785,353,730 with the same proportion 40%. In 2016, the amount of money reduce to VND 617,320,000, accounting for 26,63%. Despite of the decrease, the high proportion in the total revenue and expenditure differences of money contributed to the Fund of wages increase support has shown that, the staffs are always one of the most interests of the Institute.

Welfare Fund

This fund is used to build and repair welfare facilities and expenditures, for collective welfare activities of laborers in the Institute; for irregular difficulty allowances for employees, including retirement and sick leave. This is also spent on additional expenses for employees in the payroll streamlining. The Director of the Institute will decide on the use of funds according to the Institute's internal spending regulations.

The table 4 shows us that this fund accounted for the highest proportion in the revenue and expenditure differences during 2014-2016. In 2014, VND 1,100,204,581 was spent on the Welfare fund, accounting for 60%. In 2015 the number was VND 824,621,416, accounting for 42%. Lastly in 2016, VND 1,211,387,920 was used for this fund, accounting for 52.26%.

4.2.5 Status of implementation of internal spending regulations

The Institute's internal spending regulations are actually a guide to financial management in the Institute, which is the legal framework for annual monitoring and evaluation. The regulation is disseminated to the entire staff of the Institute. The internal spending regulations at the Institute include regulations on regimes, standards and norms of expenditures applied uniformly throughout the Institute. This system of regulations ensures that the Institute will fulfill the assigned political tasks and carry out regular activities in accordance with the effectively use of financial resources.

In order to be more active and effective in using the regular operating cost savings, the Institute has developed a system of internal expenditure regulations that is consistent with the reality of the Institute and helps the staffs manage the expenditures.

The Institute's internal spending regulations are widely discussed, with the participation of political organizations and organizations in order to exploit and promote the ability to increase revenues on the basis of active development. These regulations are also implemented with the aim of cost savings, enhancement of revenue and expenditure differences, fund accumulation, and improvement of staff living conditions.

4.2.6 Status of the accountant team and heads of the Institute of Nuclear Research

4.2.6.1 Details of participants in survey – Accountants Team

It is possible to assess the number of employees with their formal education and experience of the accounting team at the Institute through the following survey:

Table 5. Statistics of accounting team of the Institute of Nuclear Research

Total	Male	Female	Qualifications			Experience	
			Higher Education	University	College	> 5 years	< 5 years
4	0	4	0	3	1	2	2

Source: Annual Report 2016 of NRI

It can be concluded from the table that the capacity of accounting staffs in the Institute is very good. The survey results show that 75% of the staffs have university degrees and 25% of them have intermediate degrees. It can be said that in financial autonomy, accounting is more than just dealing with the numbers; it is also the agility of collecting, processing, analyzing and providing economic information to the target auditor. There are effective management measurements. The requirement to improve the capacity of accounting and finance staff is a task set up in any public service units to improve the efficiency of accounting work.

Table 6. The Details of the Participants in the Survey

No.	Position	Gender	Year of experience in the industry	Qualification	Survey Duration
1	Chief accountant	F	22	Bachelor of Accountancy	1 day
2	Accountant	F	18	Bachelor of Accountancy	1 day
3	Accountant	F	15	Intermediate degree of Accountancy	1 day
4	Accountant	F	12	Bachelor of Accountancy	1 day

Notes: F: Female

4.2.6.2 Details of participants in in-depth interviews – Managers Team

To ensure the reliability and validity of the research, the in-depth interviews have been conducted directly with the managers of NRI within the appropriate time frame to suit the study program. Table 7 illustrates the details of the position, gender and qualifications of the participants to undertake the in-depth interviews.

Table 7. The Details of the Participants in the Interviews

No.	Position	Gender	Year of experience in the industry	Qualification	Interview Duration
1	HR Department Manager	F	15	Degree of Bachelor in Business Administration	15 mins
2	Financial Department Manager	M	22	Master of Finance & Management	25 mins

No.	Position	Gender	Year of experience in the industry	Qualification	Interview Duration
3	International Cooperation Department Manager	M	19	Master of Bachelor in Economic	18 mins
4	R&D Department Manager	F	18	Bachelor of Science and Technology	20 mins
5	Director of NRI	M	35	PhD Nuclear Physics	31 mins

Notes: M: Male F: Female

The response rates for in-depth interviews were really satisfied with total 100% received from the participants. Personal information of the participants might help to answer all the questionnaires of the interview because the participants have in-depth knowledge in their major to provide reliable and value data. The participant's year of experience also can be used to measure the reliability of the research.

The participants of the interview all have high years of experience in the industry. The lowest number of years of experience is 15. However with that amount of years of experience in the industry, the participant is qualified to provide professional opinions.

100% of the participants in the interview have at least obtained Bachelor degree certificate, this will satisfy the requirements of high technical knowledge from participants to obtain valuable and reliable results. With really high education base, the participants have in-depth knowledge to provide good quality response about their perspectives in financial autonomy at NRI. Hence, the research will have high level of reliability.

The key interview questions and results are presented in table 8 as follow:

Table 8. Interview Results

No.	Interview Questions	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5
1.	Are you in approval of the implantation of the implementation of financial autonomy at the NRI?	Yes	Yes	Yes	Yes	Yes

No.	Interview Questions	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5
2.	Do you think that the transition to the autonomy of finance have positive impacts on the financial status of the NRI?	Yes	Yes	Yes	Yes	Yes

All the participants have been involved to the process of financial autonomy and approved the implementation of the financial autonomy mechanism at NRI. 100% participants have responded to the positive impacts of financial autonomy to the financial status of NRI. The positive impacts of financial autonomy have been analyzed above via the financial annual report of NRI. This also has been proved via the implementation of technical and scientific services which has been extended by the NRI with the total revenue from these activities exceeding the planned target.

4.2.7 Analysis of the factors affecting the mechanism for financial autonomy of the Institute of Nuclear Research

4.2.7.1 Policy directions of the State

The policy of the State on the renovation of the public finance, in the overall program of reform of the public administration has been approved. On that basis, The state has also issued legal documents regulating the financial regime applicable to public service units including the Institute of Nuclear Research.

4.2.7.2 Management capacity of authority agencies

In recent years, the Institute of Nuclear Research has received the timely attention and guidance of the provincial People's Committee, the leadership of the Department of Science and technology, the close coordination of specialized divisions and units in the implementation of the mechanism of financial autonomy.

Implementing the autonomy mechanism has facilitated the managing system to control internal spending, improve management skills, initially review and overcome the overlapping status of functions existing in the public service units for many years.

4.2.7.3 Endogenous capacity of the Institute of Nuclear Research

In recent years, the Institute of Nuclear Research has been strengthened according to the guidance of the provincial People's Committee; it has clear functions and tasks, with a young, enthusiastic and responsible staffs. At the same time, implementing the financial autonomy mechanism has facilitated the use of financial resources, labor and material facilities in the Institute of Nuclear Research to fulfill its assigned tasks. The Institute effectively allocates the financial resources of the Institute depending on the internal financial regulations and the state laws.

The reorganization of the personnel and operation has improved the quality of professional work, mobilized resources and promoted creativity and initiative of staffs.

The Institute has actively organized and reorganized its apparatus on the basis of redefining the functions and tasks of each department and specialized unit to contribute to improve labor productivity, improve efficiency in state management.

However, there are still some staffs that are not fully aware of the purpose of the meaning and content of financial autonomy. Therefore, they still want to maintain the old financial management mechanism and do not focus on serious implementation.

It is undeniable that one of the most pressing issues that communication management plays an important for the successful project. In fact, the writer constantly fined themselves to be intensively lured by the elements of communication, these factors of communication management are: planning, implementing, monitoring and revision all activities of communication in the project from the Company. The writer talks about the communication management for implementing the project, the project can be done by the team and all team members must share knowledge and experiences together to do the project with the best method. The team member can also research the information of students and learners from the Internet; they will send the information about new clubs through email, fax or message on mobile phone. Next, the members can organize the small party and all members will join together. Thus, communication management is very important because it will help the project to do well with the dynamic team.

However, there will have the conflict between team members, when working in the team, the conflict will be happened between the team members, thus there are many methods to solve the problem of the conflict. First – encourage active listening, people in the team must listen ideas from the others. Second – team collaboration, team members must collaborate and work activities in

Gantt chart. Third – team building, the team leader can create the team building activities, such as: go camping outside; team building is very interesting activity because it will help all members to become friendly and close to the others in the team. Through these elements, the members can understand and to avoid the conflict between them in order that the project can be implemented better.

CHAPTER 5: ORIENTATIONS AND SOLUTIONS IMPROVING THE AUTONOMY MECHANISM AT DALAT NUCLEAR RESEARCH INSTITUTE

This research has been conducted with the use of in-depth interview and survey with questionnaire. The data collected from the survey with four staff who was involved in the process of implementation of financial autonomy. At the same time, to provide the findings for the research, in-depth interview was conducted with five managers of the NRI including the director of NRI and four heads of HR department, financial department, International Cooperation department and R&D department. This analysis consisted of both qualitative and quantitative data.

The research has provided several findings on the subject of the financial autonomy mechanism from many perspectives. It also has provided some answer to the research questions set out in chapter 1 and in addition addressed the main research objectives of the research.

This chapter will provide the objectives and development directions of the NRI, giving the measures to strengthen the financial autonomy mechanism at the NRI. In addition, the researchers will also giving recommendations for the NRI as well for the State.

The legal basis as well as the assessment of the actual situation of the Institute of Nuclear Research as mentioned above shows that the financial autonomy mechanism of the Institute of Nuclear Research has not been really effective. There are no breakthroughs to optimize the effect. Therefore, the financial mechanism of the Institute of Nuclear Research needs to be adjusted by the State and the Institute to be in line with the current situations. It is denoted that Institute of Nuclear Research should follow general agreement about financial autonomy. Institute of Nuclear Research is allowed to use autonomously allocated financial sources, including revenues from public service delivery activities, and the sources of collected fees according to regulations are allowed to be left with other lawful revenues and expenditures cross. For high financial autonomy units, they may decide on spending levels. Expenditures without spending norms as prescribed by competent state agencies and based on actual situation; the units shall formulate levels of expenditures suitable to the degree of financial autonomy of each type of unit public service and internal spending rules. For low financial autonomy, the unit is allowed to decide on the levels of professional expenses and management expenses and it must not be exceed the spending levels prescribed by the agencies. In order to create incentives for full autonomy of recurrent expenditures and investment expenditures,

the unit is allowed to take the initiative in developing a list of investment projects and report them to the competent authorities for approval.

5.1 Objectives and development directions of the Institute of Nuclear Research

5.1.1 Development goals

To fulfill the goal of the tenth National Party Congress, our people are striving for 2020 that Vietnam becomes a developed industrialized country with a developed eco-agriculture, diversified and dynamic economy, healthy society in which the human factor and human values are respected and promoted.

Specific objectives are:

- Well implemented Decree 115 and guiding documents.
- Improve the quality of service to bring satisfaction to customers
- Strive to effectively perform the functions and duties as prescribed.
- Gradually arrange, recruit and train staffs
- Develop a rational internal spending regulation to improve the living standards of employees and distribute incomes according to labor productivity

5.1.2 Development direction

As a national public service unit, the Institute of Nuclear Research has continuously improved its quality, strengthened its training and closely coordinated with other departments organizations for effective financial management. In order to carry out the tasks assigned by the State, the Board of Directors of the Institute of Nuclear Research has determined the direction of the Institute of Nuclear Research in the coming time in order to achieve the above strategic objectives:

- Develop a training plan for staffs in line with practical conditions and social demands
- Build up plans for the implementation of the project timely with higher quality.
- Improve financial transparency to build trust

5.1.3 Directions on the mechanism of financial autonomy of the Institute of Nuclear Research

Promoting the results achieved over 3 years of implementing financial autonomy in accordance with Decree 115 and following the general development objectives of the industry, the Institute has developed methods to improve professional activities to fulfill tasks assigned by the State.

With the aim of improving the quality of public services to meet the needs of the society, to overcome the weaknesses, the Institute has improved the capacity of autonomy and self-responsibility in finance.

The financial management of the Institute deals with the strict requirements of the State and Institute. It must ensure both equity and economic efficiency, balance of expenditure. Management efficiency is required for managers at all levels to achieve management objectives and tasks. The implementation of financial autonomy requires high efficiency in financial management. The objectives of financial autonomy and self-responsibility in the Institute of Nuclear Research in the coming years are as follows:

- Review and finalize documents and policies on financial autonomy.
- Build and improve the professional capacity of a contingent of responsible and highly accountable accounting and finance personnel.
- Strengthen financial management, diversify revenue sources to ensure the operation requirements of the Institute.
- Establish an effective mechanism for managing revenues and expenditures, improve the efficiency of the use of financial resources, consolidate and enhance the existing facilities of the Institute.
- Take initiative in finance to carry out the tasks and plans of the Institute

5.2 Some measures to strengthen the financial autonomy mechanism at the Institute of Nuclear Research

5.2.1 Leverage and make the best use of revenue

Innovation is an indispensable trend and a necessity of society. All the history of development has historically been associated with innovation. Vietnam's financial system is also not out of the trend. In our country, the financial renovation is slow compared with the general development of society leading to stagnation or unwanted development; this can lead to many negative consequences to our

country's financial system. Slowing financial innovation can lead to many negative impacts and other negative consequences on people and society.

The Institute of Nuclear Research is a non-profit public service unit that ensures full funding for regular operations. The source of funds is the revenue from the service activities on science and technology.

The larger the own revenue is, the higher level of financial autonomy of the Institute is. Therefore, mobilizing revenue is still one of the important contents of the Institute. The Institute needs to explore and assess the demand for science and technology services in the locality, and develop a rational development orientation. The Institute needs to consider some solutions as follows to increase the revenue:

In recent years, the main source of revenue of The Institute of Nuclear Research is from the service source. The Institute of Nuclear Research needs to promote this source of revenue. The requirement is that the revenue from this source should be in accordance with the regulations of the State and authority agencies. This is an essential condition and a factor to increase this important capital but still ensure the regulations of the State, the NRI must apply the service price according to the price bracket set by the State. Also, the NRI should ensure the transparency and efficiency of financial management and strive to be efficient with the assigned functions and tasks.

5.2.2 Effectively manage expenditures

Expenditure management mechanism of the Institute of Nuclear Research extends the rights of managers and executives to determine the costs, on the basis of clear and concrete responsibilities. The formulation and promulgating of the mechanisms enable the Institute to control costs against the abuse of advantage and monopoly to create privileges.

The Institute should improve coordination among departments in the unit to promote the centralized strength of the unit in the process of achieving the objectives.

5.2.3 Effectively manage organizational structure and use of property

The Institute should pay attention to the training of the staff, raise the expertise of the staffs to meet the requirements in the new situation, in addition to the image building and operating capacity. The staffs should be trained on management skills, operations, and financial capacity. The improvement

in the staff capacity is one of the great intangible values, which helps to enhance the prestige of the Institute and create trust to promote the best performance.

The Institute should also improve coordination among departments in the unit to promote the centralized strength of the unit in the process of achieving the objectives.

5.2.4 Strengthen the inspection and financial control in the Institute

To ensure the financial management, the problem of checking and controlling finance in the Institute is very necessary. The financial inspection and control must be carried out from inside and outside the Institute.

The financial inspection and control must be done from within the Institute. It is important to strengthen the self-examination of finance and accounting at the Institute and these activities must be regular and detailed. Through the self-inspection and evaluation, the Institute is allowed to observe the annual budget estimates of the Institute, the observance of the internal spending regulations, the thrift practice and waste combat at the same time. It also assesses the quality of operations, the implementation of policy mechanisms and financial revenues, management and use of assets and capital using the funds of the Institute. Through the self-inspection, the Institute will soon detect and timely correct errors apply the handling of violations according to regulations and organize the drawing of experiences, assess the shortcomings, causes and orientations, remedial measures to enhance the management of financial accounting at the Institute. It can be said that this is a way for the Institute to actively to improve the efficiency of work. Implementing the financial disclosure in the Institute is also one of the solutions to strengthen the inspection and financial control of the Institute. Also, financial management in the Institute should be conducted effectively to ensure the rights of staffs and ensure the motivation to fulfill the tasks assigned.

Not only do the internal inspection and control, but the inspection and control over financial work and other work of the Institute is also carried out by functional agencies such as Department of Finance, Department of Science and Technology. For the state budget funds, the revenues and expenditures of the units are carried out through the State Treasury.

The State Treasury performs control checks of use of state budget funds under state budget law. The Treasury will only agree to spend when the amounts included in the estimates are approved in accordance with the norms of state budget and expenditure norms set by the competent authority or

levels according to the unit's internal spending regulations. This is decided by the Director of the Institute of Nuclear Research.

Quarterly and at the end of the fiscal year, the Institute shall have to make the final statement of revenues and expenditures and send it to the Department of Science and Technology for consideration and approval. The Department of Science and Technology is the governing agency of the Institute which annually organizes the comprehensive audit and inspection of the Institute's activities, including financial management. Through the inspection and examination, the Department of Science and Technology will detect the shortcomings and violations of the Institute and make timely adjustments, which ensure that the financial autonomy of the Institute is well implemented.

5.2.5 Finalize internal spending regulations

One of the key objectives of Decree 115 is to give autonomy and self-responsibility to the science and technology public service units, to promote all the capabilities of the unit to provide high quality service to society and to increase revenues in order to step by step solve the income of laborers. Therefore, finalizing internal spending rules is a way of achieving development goals. The complete internal finalization regulation must reflect all revenue sources and the spending contents and norms of the Institute (The Ministry of Finance, 2011). The revenue and expenditure content must be developed in a way that is appropriate to the real situation at the Institute of Nuclear Research. The internal spending regulation is the legal framework for revenue and expenditure activities in the Institute. The complete internal finances regulation will help regulators regulate the operations of the Institute of Nuclear Research. The contents of the regulation on internal spending the Institute of Nuclear Research need to develop norms to ensure the following principles:

Firstly, the internal spending regulation must ensure that the Institute of Nuclear Research completes its political tasks, and conducts regular activities consistent with the science and technology public service sector. The Institute of Nuclear Research should ensure effective funding and strengthen financial management.

Secondly, the Internal Spending Regulation was openly discussed in the Institute of Nuclear Research, with comments from trade unions. The principle of elaboration of the regulation on internal spending is the priority for professional expenses to ensure the professional quality. The Institute of Nuclear Research should increase the collection of administrative cost savings and organize the division of labor reasonably and effectively.

To ensure the above principles, the process of developing the Institute's internal spending regulations is as follows:

- Determining the expenditure needs of each expenditure group: the determination of expenditures for each group may be based on consumption norms of supplies and equipment for each activity and according to internal spending regulations as well as current regulations of Government.
- Balancing between ability and expenditure to decide the level of spending for each group. This is a difficult and complicated step requiring prioritization of each item. At the same time, an unprocessed (non-prognostic) reserve is needed to ensure that expenditures in case of fluctuations, inflation and state regulation changes can be reduced.
- Develop the mechanism of paying salaries, increased salaries, bonuses and grants.
- Payroll expenses must be based on the basis of performance, contributing to increased revenue and expenditure. In addition, it is necessary to promote the role of the trade union organization in the Institute of Nuclear Research and the timely reward system to motivate laborers.
- Develop the mechanism for fund allocation, especially fund for non-business development, emulation and reward fund.
- Develop a decentralization mechanism, package for each department.

5.2.6 Improve the capacity of staff of finance and accounting

Accounting staff is an important and indispensable part of the Institute in general and finance and accounting duties in particular. Their working capacity will determine the quality and efficiency of accounting duties and financial management of the Institute. Therefore, enhancing the capacity of financial accounting staff is an objective requirement for any entity due to the requirements of the new financial mechanism (The Ministry of Finance, 2006). This is also a problem of units in the process of reforming and finalizing the financial autonomy mechanism. In order to achieve the objective of improving the capacity of financial accounting staff, a comprehensive plan should be in place for a long period of time with a variety of appropriate methods for recruitment, training and retraining. The Institute of Nuclear Research must implement solutions:

- Review and re-evaluate the whole financial management apparatus of the Institute on capacity, qualifications and ethical qualities. On that basis, the Institute should rearrange the

organization and consolidate the financial management apparatus towards a lean, specialized and effective operation.

- Regular train and upgrade the accounting staff especially when new policies related to financial autonomy are implemented.
- Develop detailed plans to train staff in politics, information and foreign languages to equip necessary skills for professional duties.

5.3 Recommendations for the Institute of Nuclear Research

Through the practical implementation of Decree No. 115, the employment of the mechanism of financial autonomy and self-responsibility at the Institute of Nuclear Research has been on the right track. Although the Institute has achieved some positive results on financial management reform, the implementation of Decree No. 115 has also revealed many limitations. It is necessary that the Institute find out solutions to dismiss the limitations and enhance the financial autonomy mechanism (The Ministry of Finance, 2006). In order to improve the financial autonomy mechanism, the Institute needs to fulfill some of the following requirements:

Firstly, the Institute should improve organizational structure. This is the first condition for the Institute to build organizational structure in the direction of streamlining efficiency, and improving operational efficiency and cost savings. The structure should clearly define the functions and duties of the departments in the Institute. At the same time, the Institute is required to review and set the payroll norms for each division and to put the right people in the right places with the right capacity and specialization.

The good organizational structure initially depends on the leadership of the Institute. The director is primarily responsible for the performance of professional duties and financial management within the Institute. The successful implementation of financial autonomy mechanism in the Institute requires the director with a good command of economics and financial management. The director also takes the responsibility to promote the role of financial accounting staff, especially the chief accountant and departmental coordination in the financial autonomy. The evaluation and appointment process of staff must be serious, open and democratic. It is necessary that the Institute have the unanimous initiative of the collective of employees and regular direction of the Party Committee and the Board of Directors.

Secondly, the improvement of service quality on the basis of increased professional training and the application of science and technology is one of the important factors determining the existence and

development of the Institute. The Institute has to compete strongly with many other service providers which have good facilities and good workforce. It is, therefore, imperative that the Institute continually improve the quality and quantity of service delivery. In the long-term development strategy, the Institute should focus on the training of staff in the three to five year period. Training aims to increase the level of expertise and ability to use new science and technology.

Thirdly, it is necessary to intensify professional supervision and auditing. According to this requirement, the Institute should establish an internal control system. This system includes a system of related professionals such as finance and accounting. At the same time, the role of department, such as trade unions, the Party, youth unions, should be promoted in the process of internal control system. The Institute may conduct organizational restructure on the basis of existing professional staff without the establishment of new department.

At present monitoring and supervision activities are mainly carried out by higher level management agency, the Department of Science and Technology and Department of Finance. The establishment of independent internal control system will help the Institute to identify the violations of regulations and take measures to handle in time.

It is necessary to develop a quality monitoring system and service costs from the internal monitoring mechanism of the departments with the supervision of the Institute's leaders. Every year, the Institute will regularly reflect the mechanism and policy problems with the superior management agency for timely removal.

Fourthly, it is necessary to promote computerization in administrative activities: Strengthening the management system by information technology to help the overall management of the Institute.

In order to implement the administrative reform, the Institute of Nuclear Research Dalat has employed programs such as VIC software, accounting software program, staff administration program guided by the Department of Home Affairs.

So to implement the solutions for the improvement of the financial autonomy mechanism, the above conditions should be prepared and meet the requirements of the Institute.

5.4 Recommendations for the State

In order to develop public service activities and improve the financial autonomy mechanism in each unit, the regulations, mechanisms and policies of the Party and the State should serve as the foundation. Inadequate or unreasonable policy mechanisms can be a barrier for public service units during the implementation of financial autonomy. Therefore indirect intervention by the State through mechanisms and policies is very important, creating a motivation for the units in the implementation of autonomy (Mai Phuong, 2012). In order to facilitate the completion of the autonomous mechanism of the Institute of Nuclear Research Dalat, the State should:

- Develop and perfect the system of documents and policies on finance and accounting in the sector of science and technology. The implementation of Decree No.115 has shown the positive effect of the granting of financial autonomy for science and technology public service units. A system of legal documents guiding Decree No. 115 has been issued for the preliminary adjustment of financial content, organization and payroll. However, one of the reasons leading to obstacles for the implementation of financial autonomy is also the mechanism and policies. Legal documents that are overlapping, delayed, incomplete or inconsistent with the reality make it difficult to implement the regulations at the science and technology public service units. Therefore, it is an objective requirement to amend the norms and standards that are appropriate to the current practical conditions in order to create a more favorable mechanism for the units to exercise their autonomy. The elaboration of standards and techno-economic norms shall be carefully calculated on the basis of scientific grounds and objective grounds, avoiding the situation of non-realistic norms and restraining development of public activities;
- Continue to complete the financial policy mechanism on socialization in order to encourage, promote and expand forms of socialization in the fields of public service. By reviewing the actual implementation of Decree No.115, despite the initial results, the practical implementation still has many drawbacks. It is proposed that the Ministry of Finance and the Ministry of Home Affairs will continue to improve the autonomy mechanism in line with the roadmap for public administration reform and salary for 2012-2020;
- Shift the mechanism from budget approval by the State to the relationship of ordering and purchasing;
- Renovate the financial mechanism for the public service units with high socialization capability and cover all their operating expenses by themselves. Self-financing public service units are

entitled to borrow capital from credit institutions and mobilize their staffs to invest in expanding and raising the quality of non-business activities;

- Continue stepping up the assignment, decentralization, granting autonomy and self-responsibility for the performance of tasks, organizational apparatus and payroll for public service units. Clearly define the authority and responsibility of the head in the management and administration of the public service units, to have a mechanism for supervising and inspecting the implementation of financial autonomy mechanism.
- Renovate the mechanism towards fully complying with the service order of products and services. The State shall set prices or price brackets for products or services for basic services, which are essential for the society;
- Step by step properly calculate the reasonable expenses in non-business service charges. Implement the roadmap for the abolition of subsidy through prices and service fees. Enhance the improvement of the management and the role of inspection and supervision of state agencies in public service units, aiming to provide better quantity and quality of services for the whole society.

CHAPTER 6: CONCLUSION

Over 3 years of implementation of financial autonomy mechanism for public service units in the sector of science and technology, it can be seen that the implementation of autonomy mechanism for public service units creates many positive innovations that enable the public service units to take the initiative in mobilizing and consolidating financial, labor and material resources and efficiently using it to improve the quality of service activities. This will create opportunities for organizations and people to have more choices and access to higher quality services.

The Institute of Nuclear Research (NRI) is established to be responsible for technical management, safe operation, efficient exploitation of Dalat Nuclear Reactor and other scientific and technological equipment for scientific research, technology transfer and human resource training for the country. Over the past 3 years of applying financial autonomy and self-responsibility mechanisms, the NRI has made positive changes in all aspects, demonstrating the delegation of financial autonomy and self-responsibility to science and technology public service units with the right direction and consistent with the trend of economic development. The NRI has conditions to promote its ability, increase revenue and reduce expenditure. However, it is inevitable to study, supplement and perfect the mechanism and policies suitable with the practical activities of the units to enhance the mechanism for finance autonomy and self-responsibility.

Since the employment of financial autonomy and self-responsibility, The Institute of Nuclear Research has issued regulations on the use of funds for activities by implementing the internal expenditure regulation. The internal spending rules have been in line with the current financial documents and will be revised in the light of financial changes by the State. The granting of financial autonomy and self-responsibility to The Institute of Nuclear Research has brought positive results. The Institute has been proactive in raising public service revenue and other legal revenues and it has now the ability to adjust some additional income allowances for staffs and motivate them to well fulfill their assigned tasks.

However, there are still many shortcomings. There is an increase in the demand of expenditure while the sources of revenue are limited. This can lead to an imbalance in revenue and expenditure. The issue for the Institute is to be more flexible and creative in mobilizing more revenue and managing more closely its revenue and expenditure. Especially, it is necessary to request the competent authority to assign the Institute to properly perform its functions and duties as prescribed.

The issue of revenue and expenditure management also needs to be adjusted to ensure consistency and transparency.

In the near future, the Institute will strengthen the financial activities in the direction of openness, transparency and planning. The Institute strives to put financial management into a driving force to improve the quality of training and scientific research, and increase the revenues.

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APPENDIX

Questionnaire 1: Applied for the accounting team

Please select your answer

- 1. What is your gender?**
 - a. Female
 - b. Male
- 2. How long have you worked in the NRI?**
 - a. Under 5 years
 - b. More than 5 years
- 3. What is your education level?**
 - a. College
 - b. University
 - c. Higher education
- 4. Do you participate in the implementation of the financial autonomy at the NRI?**
 - a. Yes
 - b. No
- 5. Rate the effectiveness of the financial autonomy at your NRI**
 - a. Not effective at all
 - b. Partly effective
 - c. Neutral
 - d. Effective
 - e. Very effective

Questionnaire 2: Applied for the managers at the NRI

- 1. What is your position at the NRI?**
- 2. What is your role in the implementation of financial autonomy at the NRI?**
- 3. Are you in approval of the implantation of the implementation of financial autonomy at the NRI?**
- 4. Do you think that the transition to the autonomy of finance have positive impacts on the financial status of the NRI?**
- 5. Can you give some recommendations for the enhancement of financial autonomy at the NRI?**