

**ANALYSIS OF VIET NAM' S POLICIES RELATING
TO DISSEMINATION AND TRANSFER OF RESULTS
OF SCIENTIFIC RESEARCH
AND TECHNOLOGICAL DEVELOPMENT**

Dr. Nguyen Van Anh

Science and Technology Department of Ba Ria - Vung Tau Province

Abstract:

Science and technology (S&T) development has been determined by the Party and the State as the top national policy, the impetus for the development process. However, besides great achievements brought about by S&T, the application of S&T results during past time was not as expected. The basic cause of this situation was due to some limitations in the dissemination and transfer of S&T results of Vietnam. This paper highlights the status of policies and mechanisms concerning the dissemination and transfer of scientific research and technological development results in the current period, from there proposes various solutions for improvement in the future.

Keywords: *Research results; Dissemination of research results; Transfer of research results.*

Code: 14100101

1. Results of scientific research and technological development

Up to now, a number of research works, at home and abroad, have touched upon the concept of results of scientific research and technological development (hereinafter referred to as research results) at different angles. Among them, it could be mentioned the view of author Nguyen Lan Anh, 2003 [22], she said: "Results of scientific research and technological development is the outputs/outcomes obtained from scientific research and technological development activities". This view of Nguyen Lan Anh is an inclusive connotation of the concept of research results. However, this concept has not showed specific products of research results.

Circular No. 15/2014/TT-BKHHCN dated 13th June 2014 of the Ministry of Science and Technology guiding the hand-over of ownership and use rights of state funded research results (referred to as Circular 15), provided the concept as: "research results includes patents, utility solutions, technical know-how, trade secrets, technical innovation, layout design of semiconductor integrated circuits, industrial designs, trademarks, brand names, plant varieties, computer programs, technical design, scientific

works and other objects including protected and non-protected objects under the provisions of intellectual property law" (Article 3.1 of Circular 15).

The content of research results mentioned in Circular 15 was based on the intellectual property right. We can agree with the views expressed in Circular 15 where it said research results could include those which were not protected under the current intellectual property law of Vietnam, such as "domestic animal seeds". Research results may include other subjects such initiatives, prized results from S&T contests, etc. However, it should not include "brand name", "trade name" in the list of research results although they have been legally protected by intellectual property law, because they have no characteristics of a scientific activity, e.g novelty, reliability, informative, objectivity,...) and therefore they are certainly not products of scientific activity. In addition, "technical design" does not always contain novelty feature, so it should also be reconsidered as a research result. Thus, the concept of research results mentioned in Circular 15 may not be completely accurate.

All research questions are derived from scientific and technological problems that need to be solved. According to the Law on Science and Technology: "S&T task is the S&T problem to be addressed to meet practical requirements of socio-economic development, ensured national defense and security, and the development of S&T itself" (Article 13.3 of the Law on Science and Technology). S&T tasks include research programs, projects, and themes. The content of S&T tasks was specified in Decree No. 08/2014/ND-CP dated 27th January 2014 guiding the implementation of the Law on Science and Technology. Circular No. 14/2014/TT-BKHHCN dated 11th June 2014 of the Ministry of Science and Technology (referred to as Circular 14) defined: "Results from the implementation of S&T tasks was a collection of documented results obtained from the scientific research and technological development of the S&T tasks, including: synthesis report of the task performance, summary report of the task performance; appendix to synthesize survey, investigation data, maps, drawings, photographs, multimedia documents, software" (Article 3.3 of Circular 14). According to Circular 14, state funded research products become research results after they have been accepted, regardless they are protected or non-protected objects by intellectual property law.

The Joint Circular No. 06/2008/TTLT BKHHCN-BTC-BNV dated 18th June 2008 (hereinafter referred to as Circular 06) introduced the concept of scientific and technological results, whereby research result means: "Results of science and technology, including outputs of S&T programs,

projects, themes; Results of decoding research/ technology mastering projects (referred to as S&T tasks) being recognized by competent state agencies in accordance with provisions of relevant laws; patents, industrial designs, plant varieties, layout design of integrated circuits, which have been protected under provisions of the law on intellectual property or recognized by international registration in accordance with provisions of international treaties to which Vietnam is a signatory; computer programs". Thus, Circular 06 considers research results as those include the results of S&T tasks and the objects having been protected by the intellectual property law, and disregards the objects have not been protected by intellectual property law.

Approaching by the research process, we found that, research results might undergo through one or more stages depending on specific research tasks, e.g basic research or applied research or technology development [1]. For each stage, it can be divided into smaller steps ranging from scientific/technology ideas; conduct of research process; termination of research process. The result of each stage is also considered the result of this small step.

From the analysis and observations above, the concept of research results could be summarized as follows: "Results of scientific research and technological development (R&D) is the output produced by R&D activities. Research results include scientific works resulted from the implementation of S&T tasks; the objects protected by intellectual property rights (patents, utility solutions, layout design of semiconductor integrated circuits, industrial design, plant variety which have been granted with protection title issued under the provisions of intellectual property laws or recognized by international registration under the provisions of international treaties to which Vietnam is a signatory member, computer programs, trade secrets); other objects have not been or are not protected by intellectual property rights under the current provisions of intellectual property laws".

2. Dissemination and transfer of research results

According to Vietnamese dictionary [25]: "Dissemination is making everyone be aware of". Thus, in terms of a verb, dissemination of research results is to let people know about the result of research. But in terms of an adjective, it means "popular", e.g "The viewpoint X is of a popular opinion of the youth today".

Presently, there is no research work or written document of state management to generalize the concept of research results transfer in a

complete and clear manner. However, in terms of knowledge transfer, technology transfer, the transfer of research results in this paper can be understood at following angle:

- (1) In general point of view, transfer of research results is the movement of knowledge from the place where it was created;
- (2) In view of management, transfer of research results is the collection of technical, commercial, legal activities with a view to making the recipient be capable of applying and developing the research results received;
- (3) In view of intellectual property rights, transfer of research results is the transfer of ownership or right to use partly or fully the research results from the transferee to the transferee;
- (4) In view of research process, it is the transfer from one research step to another in the research chain of scientific research and technological development, i.e, basic research - applied research - experimentation - exploitation - commercialization;
- (5) In view of application, it is the application of existing new research results;
- (6) In view of absorptive capacity, it is the convey of entire knowledge, information on research results for the transferee to be able to apply research results.

Based on the above definitions, dissemination of research results can also be considered as transfer of research results (in view of the general view of transfer of research results), because both actions have the same purpose of moving knowledge out from its birthplace. However, the research results being protected by Law on intellectual property (IP) can only be disseminated and transferred with the consent of the research results owner (except for some special cases prescribed by the law on intellectual property). For those not being monopoly protected by law on intellectual property, the owner of research results have no right to prevent others to utilize their results (except there is other specific agreement between the owner and users). There was argument that "dissemination" related to provision/publication of materials, knowledge, information (not associated with buying/selling), and "transfer" implies buying/selling/granting (relating to ownership/copyright). This may be true, but not sufficient, because:

Firstly, in terms of intellectual property rights, any scientific work expressed in any form of a certain material has its copyright protected

(except for some special cases prescribed by intellectual property law). Copyright appears when the work is created and expressed in the form of a certain material, regardless of its content, quality, form, media, language, published or unpublished, registered or unregistered (Article 6.1, Intellectual Property Law). Copyrights include personal rights and property rights. Personal rights include the right to name the work; be in name of; be named by; protect forever the integrity of the work. Publishing right (under the personal rights) and property rights have indefinite whole lifetime protection and shall expire on the 50th year as of the year the last coauthor death (Article 27.b, Intellectual Property Law). Property rights include the right to make derivative works, perform, reproduce, distribute, and transfer the ownership. Thus, while scientific work (or research results) are protected, if they are published, reproduced for commercial purposes without permission of or negotiation with the author, it will certainly be in violation of the intellectual property law. And if the published materials (research results) for non-business purposes (not associated with buy/sale), it is perhaps only the state can afford it because the dissemination by that way is of non-market nature. The transfer is also carried out in two modalities, i.e market and non- market. Details of this will be specifically mentioned in sections below of this paper.

Second, when considering the term “dissemination” in view of a verb, it will involve the scope of beneficiaries whether it is wide or narrow; the knowledge disseminated is shallow or deep. There is information that can be considered popular for a certain group of audience, because everyone in the group already knows, but not all except that group. This case is especially true for traditional business of Japanese firms. Japanese companies appreciate the loyalty of their employees, considering them as part of the company asset accumulated by knowledge and experience. Old employees will share (by dissemination, transfer) knowledge and experience with new comers for ease of coordination in teamwork. But the knowledge and experience shared is committed by employees to keep it in confidentiality to protect the company’s assets against competitors. It means that, in “dissemination” it implies a connotation of transfer - transfer of knowledge, know-how; and on the other hand in “transfer” it also implies a connotation of “dissemination”, dissemination of knowledge at broad, narrow, shallow, deep scope to respective recipients.

When considering the term “transfer” in narrow angle (from the perspective of capacity of absorbing research results as mentioned above), it should be said that the scope of the term “dissemination” is wider than the term “transfer”, because not all objects to be disseminated have the same

absorptive capacity to be able to receive and apply research results in full. See the illustration below.

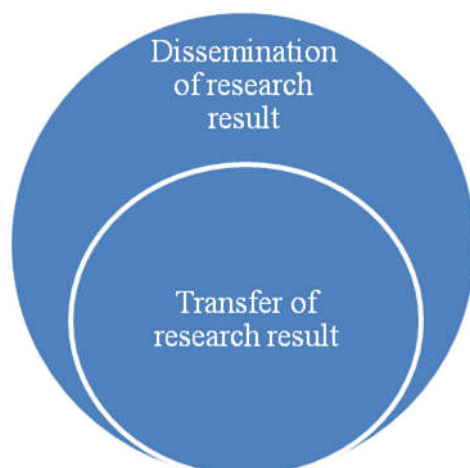


Figure 1. Scope of implication of transfer and dissemination of research results

3. Policies on dissemination and transfer of research results in Vietnam

In recent years, the State has issued a system of legal documents (law and under law documents) to enhance the dissemination and promote the transfer of research results into life. The system includes specialized laws: Law on Science and Technology 2000 (amended and supplemented in 2013); Law on Intellectual Property 2005 (amended in 2009); Law on Technology Transfer 2006, Law on Information Technology 2006, Law on Standards and Technical Regulations 2006, Law on Product Quality 2007, Law on High Technology 2008; and many other relevant laws, namely The Civil Code 1995 (amended in 2005), the Criminal Code 1999 (amended and supplemented in 2009), the Law on Customs 2001 (amended in 2005), the Code of Civil Prosecution 2004, Law on Enterprise 2005, Law on Investment 2005, Law on Commercial 2005, Law on Corporate Income Tax 2008, etc. These laws have created an important legal corridor for the implementation and enforcement of the policies concerning the dissemination, transfer of research results in Vietnam.

3.1. Policies on dissemination of research results in Vietnam

The dissemination of research results in Vietnam is regulated by the Law on Science and Technology, Law on Publication, Law on Press and other relevant laws. Under the provisions of the Law on Science and Technology,

individuals and S&T institutions in Vietnam are entitled to “Publish results of S&T under the provisions of the Press Law, Publication Law and other relevant laws” (Article 13.6, 20.7 of Science and Technology Law). At the same time, individuals and organizations are obliged to “Register, archive and transfer of results of scientific research and technological development using the state budget; provide reports and statistics on science and technology activities as required; protect the interest of the State and society, rights and lawful interests of individuals working in their S&T organizations; keep national S&T secret” (Article 14.5, 14.6, 14.7, 21.4, 21.5 of Science and Technology Law). On the other hand, individuals engaged in S&T have the right to “have all their intellectual property rights protected; transfer S&T results as per the legal provisions on intellectual property and technology transfer”. With these regulations, it helps the management of research results to be more focused, consistent; ensure inheritance, avoid duplication, reduce waste in the research process. Together with the disclosure of research results funded by the state budget, it creates transparency in the community conducting research, creating favorable conditions for rapid application of research results in practice. Currently, the state promotes investment by organizations, enterprises and individuals in the development of communication and dissemination of S&T knowledge. The funding invested by organizations, enterprises and individuals in activities of communication and dissemination of S&T knowledge shall be considered eligible (Article 48.1, 48.3 of Science and Technology Law).

In order to implement the Law on Science and Technology, the government issued Decree No. 11/2014/ ND-CP dated 18th February 2014 stipulating provisions for S&T Information activities. Accordingly, the dissemination of research results is one of the subjects of S&T information functions. In Vietnam, a national database on S&T was established by government containing information about S&T organizations; research manpower; S&T tasks (ongoing research projects and S&T application results); it also contains information on intellectual property documentation, S&T publications and citation index in journals, conference proceedings, national and international scientific seminars/conferences; information on technologies, high technologies, technology transfer; S&T statistical information; information about S&T enterprises; regional and global S&T development, and many other relevant information. The exploitation of S&T information is undertaken via online communication or through electronic portal of the agency in-charge of national S&T database management and focal point agencies of line ministries and provinces responsible for the management of their S&T databases; through the

national S&T information network for research and training; by a written request; through a contract between the national S&T database management agency and the requesting users in accordance with legal provisions. Entities having the right to exploit and use S&T databases include: agencies involved in the development, maintenance and update of the national S&T database can exploit it for the need of management, research, training, production and business; the state agencies, political organizations, socio-political organizations have rights to request for supply of related S&T information for state management to meet the requirements of socio-economic development, national security, defense, and international integration; Other agencies, organizations and individuals also have the right to ask for information on S&T for research, training, production and business purposes.

At present, Vietnam has established a network of S&T information agencies, including: National Agency for S&T Information, 34 S&T information centers at ministries, ministerial-level agencies and agencies attached to the Government; central bodies of the Party and mass organizations; 63 S&T information centers in provinces/cities under the Central Government, over 400 S&T information organizations, libraries at research institutes/ universities, dozens of S&T information centers at state-run economic corporations, information stations providing S&T information at district, ward level. If the national S&T database system of national S&T comes into operation it would be a good environment for the dissemination of research results to all objects in meeting the need of national socio-economic development.

3.2. Policies on transfer of research results in Vietnam

The transfer of research results in Vietnam is being experienced under two forms, market and non-market mechanisms.

3.2.1. Policies on transfer of research results under non-market mechanism

Non-market mechanism here is understood as grant, donation, free to use/exploit research results in an eligible way. Current important documents relating to the transfer of research results under the non-market mechanism are those related to the transfer of initiatives as specified in provisions of Decree No.13/2012/ND-CP dated 02 March 2012 (Decree 13) and Circular No. 18/2013/TT-BKHHCN dated 1 August 2013 (Circular 18). Accordingly: "An initiative is a technical, management, operational solution, or solution of application of advanced techniques (called solution) being recognized by grass root organizations, provided that it has fully met the following conditions: novelty within the organization; has been applied or tested by

the organization and has potential practical benefits; is socially accepted, intellectual property right protected in accordance with law by the time of examination and adoption of the initiative)" (Article 3 of Decree 13).

It is the condition of excluding "objects under protection of intellectual property rights" to be eligible as new initiatives decided the non-market mechanism of transfer of research results considered as initiatives. In respect of recognized innovative solutions the author and concerned organizations who first applied the initiative shall be entitled with remuneration for the application of innovation in their organization or transfer it to other organizations/individuals. The level of remuneration shall be negotiated and specified in the agreement. The author of the initiative is paid at least 7% of the total profit derived from the application of initiatives in each year. In case the profit is impossible to determine, the remuneration would be at least of 5 times the minimum wage prescribed by the State at the time of payment of remuneration. Payment of remuneration is effected in one month after the end of each application year. Remuneration shall be paid annually in the first 3 years of the initiative application. If the initiative is transferred to organizations/individuals, the author of initiative shall be entitled with 15% of the profit for each transfer, effective payment shall be made within 01 month from the payment date of each transfer, applicable for 3 years from the date of the initiative is recognized. The different feature of the policy was that new initiatives are significant within the applying organization and the remuneration is given to those involved in organizing the application of initiative for the first time. These participants shall enjoy a minimum of 20% of the remuneration for the initiative author (Article 10 of Decree 13). Investors and author of initiatives have the right to apply and transfer initiatives to other organizations and individuals but do not have the right to prevent others to apply and transfer initiatives to outside in case the innovative solution is not the object of intellectual property rights protection under the intellectual property law (Article 10.1 of Circular 18). However, the author does not have the right to apply or transfer initiatives to other organizations and individuals if the investor and author have agreement expressed in the contract or the author is an employee working in the organization of concern (Article 10.3, Circular 18). In the context of Vietnam where the country is getting deeper and deeper integration in the global economy, while the technological level of the Vietnamese enterprises, especially small and medium enterprises is still very limited, let's say "more than 90% of small and medium enterprises are using from medium level to backward technology, low possibility to invest for upgrading the low-technologies"

[22]. This policy facilitates enterprises, organizations and individuals to use and exploit research results in an eligible manner.

3.2.2. Transfer of research results according to market mechanism

In order to further attract the transfer of research results from overseas into Vietnam, Law on Intellectual Property 2005, amended in 2009 and the Civil Code 2005 expanded the objects to be protected, meeting relatively full protected objects as per requirement of international standards on intellectual property. Objects of intellectual property rights relating to technology specified in intellectual property law include: copyright; industrial property rights (patent, industrial design, layout design of semiconductor integrated circuits, trade secret, trademark, trade names and geographical indication); plant variety rights (seed multiplication material, harvesting material). The expansion of protected objects will increase the number of advanced technologies derived from developed countries to participate in market transactions. Basically, the recognition and monopoly protection of technology objects of Vietnam is in accordance with international standards and practice.

Law on Technology Transfer enacted in 2006 provided new rules in technology transfer contract, they were much more liberal than the previous provisions, whereby technologies were divided into three categories, except for those were in the list of banned transfer (those which do not meet the requirement on safety, sanitation, health, protection of natural resources, protection of environment, creating products adversely affect national defense and security, social order and safety...), and for technologies in the list of restricted transfer (for protection of national interests, human health, national cultural values, protection of animal and plant resources, environment protection), the contract parties have to get proper permission of competent agencies. For the technologies which remain in effect under the contract of relevant parties, registration with state management agencies concerned shall not be required. Parties to the contract can freely agree upon the contents of the contract, e.g: degree of ownership of technology to be transferred/used, the effective time of the contract, the contract duration, price, payment method, which law to apply to settle contractual disputes (for technology transfer agreements with foreign parties), language used in the contract, level of compensation for breach of contract... This is of great significance in terms of enabling the parties to the contract to save a lot of time and money in technology transfer contract arrangement and enforcement.

Currently, funding for research activities in Vietnam mainly comes from the state budget, in order to promote the transfer of research results funded

by the state budget, Ministry of Science and Technology issued Circular No. 15/2014/TT-BKHCN dated 13th June 2014 regarding the transfer of ownership, right to use of research results using state budget to enterprises, organizations and individuals to promote the supply side of research results to implement technological innovation, introduction of applied research results into production, contributing to the formation of S&T enterprises, mobilize more funding for research, assisting S&T public organizations to transform towards autonomy, self-responsibility institutions, or helping S&T enterprises to operate under the market mechanism; provide public services for the public interest, social security and other purposes as prescribed by the Law on S&T and other related laws. This is the bright point of the policy on transfer of research results of Vietnam based on the lessons learnt of advanced countries like the US, Japan, Korea, China,...

During the past, the Law on S&T and other relevant documents guiding the enforcement of the law issued many new policies to encourage and attract individuals to participate in S&T activities with a view to establishing a proper channel for transferring the results of important research projects in Vietnam. Science and Technology Law indicated the rights, obligations and benefits of individuals in taking part in S&T activities. Specifically, individuals who engage in S&T activities, if satisfy all requirements, are proposed for being recognized, appointed to positions in scientific research, positions in technology development, entitled with preferential conditions, privileges such as “Being employed and located in a position and provided salary and allowances in accordance with their expertise and capability in public S&T organizations; enjoyed with tax incentives; equipped with sufficient means/facilities and provided with favorable working conditions; be exempt from civil liability in the event of damage, risks posed to the state in the process of performing S&T tasks due to objective reasons,...” (Article 23 of the Law on S&T). “The State shall create conducive conditions/working environment for individuals working in S&T activities to maximize their capability and receive worthy benefits of the performance of S&T; making sure that giving right incentives to right persons, enabling talent personnel to conduct important S&T tasks,...” (Article 3 of Decree No. 40/2014/ND-CP dated 12th May 2014). Decree No. 87/2014/ND-CP dated 22nd September 2014 provided a number of preferential policies on immigration and residence, recruitment, employment, study, wages, housing, information access policy, rewarding honoring policy, and other policies to attract individuals who are Vietnamese living abroad and foreign experts to participate in S&T activities in Vietnam. For example: “Vietnamese living abroad during working in Vietnam could be appointed/hired for holding leadership titles in S&T organizations; assigned

with the task of taking charge of S&T at all levels; considered for recognition, appointment of scientific research, technology positions in accordance with the Law of S&T; Foreign experts while working in Vietnam was hired for holding job titles leadership of S&T; assigned the leader position of S&T projects; Vietnamese living abroad and foreign experts are also facilitated to get work permit in accordance with simplified procedures” (Article 5, Decree 87).

The State makes investment in building infrastructure for S&T development: “The State has policies of building infrastructure, using efficient physical foundations for national S&T research facilities; promoting and supporting the development of research and application centers of advanced S&T, high-tech zones, technology parks; upgrading and building new research center in higher education establishments to link training with scientific research, technological development, application and commercialization of new technologies” (Article 66.1 of the S&T Law). At present, there are in the country five national high-tech parks, high-tech agricultural zones, software parks established and in operation. After the Prime Minister Decision No. 850/QD-TTg issued on 07th September 2000 there has been 17 key national laboratories set up with the total cost of VND 1,000 billion. The key labs have provided support for the host agencies, S&T institutions, universities working in the same specialization to perform research tasks, training and education, and transfer of research results. There had been 1,071 and 614 scientific works published respectively in local and international journals; 10 patents, 26 utility solutions registered; support was given to many PhD, master students in conducting scientific research for graduation purpose. With modern equipment, the key laboratories have assisted scientists in the country to carry out the research tasks assigned at regional and international advanced level or services that could not previously do in the country, it was also facilitating cooperation with foreign S&T laboratories, institutions, scientists.

Along with making direct investment in S&T, the state has also provided with innovative mechanisms, guidelines for convenient implementation of S&T tasks: “Funding for S&T tasks is provided through the national funds for S&T development or transferred to bank account of the agencies in charge of the implementation S&T tasks, opened at the State Treasury” (Article 53.2 of the Law on of S&T) or “Allocate funding under contractual arrangement for the S&T tasks using the state budget; or for buying research results” (Article 52, Law on of S&T).

The State has policy to allocate funds for S&T, including the national,

ministerial, provincial, enterprise's foundation for S&T development; national foundation for technology innovation, venture capital funds as indicated under the Law on technology transfer, Law on High Technology. At the same time, the State tries to mobilize funds outside the state budget for S&T development such as funds of enterprises, organizations and individuals through a mandatory obligation: "Enterprises must spend funds on technology innovation, technology improvement, to improve productivity, quality and competitiveness of their products and services" (Article 56.1 of the Law on S&T) or "Organizations and individuals are encouraged to make investment in S&T by providing tax incentives, honor titles and rewards as prescribed by laws" (Article 55.3 of the Law on S&T).

According to the Law on Science and Technology, the State promotes the transfer of research results through the application of preferential tax policies on the income resulted from the implementation of research contracts, income from products using new technology applied for the first time in Vietnam, revenue of high-tech enterprises, high-tech applied agricultural enterprises and some high-tech activities, services in the field of high technology,... or applies appropriate credit policy (medium and long term loans, with preferential interest rates, investment credit guarantee, ...) for investment in S&T or application of research results.

In addition, the state promotes and supports the development of S&T service organizations such as technology incubators, technology transfer promoting agents, technology transaction floor, technology market, etc. in order to stimulate the demand for technology development and S&T services, creating connection between supply and demand sides and favorable conditions for the commercialization of research results. These policies were expressed in the Technology Transfer Law, the Law on High Technology, Information Technology Law, for example: the Technology Transfer Law encourages organizations and individuals: "to make investment in building infrastructure for technology market, including technology fairs, exhibitions, technology centers, technology incubators, business incubators and other forms; publishing, dissemination, demonstration, introduction and participation in technology markets, fairs, exhibitions held locally and in foreign countries" (Article 34, Law on Technology Transfer). The State supports the development of S&T enterprises, supports the transformation of public S&T organizations to autonomy, self-responsibility mechanism as per the market mechanism. Decision No. 592/QĐ-TTg dated 22nd May 2012 (called Decision 592) set out the objective to "support the formation and development of 3,000 S&T enterprises, 100 focal point technology/business incubators; support for 1,000 individuals, organizations, enterprises, strong research teams to be

incubated in terms of business or technology; organize training and retraining for 5,000 participants of S&T enterprises in related subjects; support public S&T organizations to switch to the autonomy, self-responsibility mechanism"(Article 1.II, Decision 592).

In short, under the policy to promote the dissemination and transfer of research results, the establishment of S&T markets in Vietnam, up to present, the State has issued several important guidelines and policies to enhance the creation of products using the result of research, creating a legal environment for convenient transaction of research results.

3.3. Limitations of policies relating to dissemination and transfer of research results in Vietnam

Although mechanisms and policies related to the dissemination and transfer of research results contain a lot of new features, the technological level of enterprises is still backward, the speed of technology innovation in Vietnam is still low, as a result, the dissemination and transfer of research results is still limited. This is due to many causes, including those connected to policies, as follows:

First, the system of legal documents is a synchronous, with laws exist but enforcement guidelines are missing or incomplete leading to low level of compliance, not promoting the dissemination and transfer of research results in practice.

For the transfer of research results under non-market mechanism directly related to initiatives management, though Decree 13 and Circular 18 were issued, the guidance for implementation was incomplete, lack of specific financial regulation (a circular should have been issued by the Ministry of Finance). Therefore, the assessment and recognition on initiatives in reality could not be conducted. Thus, the rights of initiatives authors and applying units for the first time have not been implemented, leading to the dissemination, transfer of research results being as initiatives was very low, especially in enterprises.

The deployment of S&T tasks after selection is implemented by signing contract between a state S&T agency and individuals (research project leaders) or institutions responsible for implementation of the task. Although the Ministry of Science and Technology has recently issued Circular No.05/2014/TT-BKHHCN dated 04th October 2014 replacing Decision No. 293/QD-BKHHCN of 27th February 2007 regarding contractual arrangement for scientific research and technology development (R&D contracts) with many new features, it was found that in the R&D contract form there were no regulations on the use of research results and how to share the benefits

of using the results, while this is the basis for the distribution of benefits among stakeholders concerned such as the state, the authors, the organizations involved in investment to improve the technology, the brokerage agents promoting the commercialization of research results (if any). There were no provisions with respect to intellectual property liability of the parties involved in the development of research results. In reality, at present there has not been much dispute in the implementation of R&D contracts, but if the operation of S&T is socialized with many non-state organizations joining the S&T implementation, then owners of research results may be more diversified, and disputes may unavoidably occur. On the other hand, in despite of the transfer of ownership or rights to use research results were specified in Circular No. 15/2014/TT-BKHCN of 13th June 2014 (Circular 15), but it was still incomplete because no circular issued to guide the assessment of research results, no substantive provisions available in the research results transfer contract. The content relating to technological transfer agreement as referred to in Article 15 of Law on Technology transfer, is only suitable for already completed technology transfer, especially for the transfer of technology from abroad into the country.

Some service activities in transfer of research results have been implemented, but no legal documents guiding their operation, for example: The techmart has been operated for more than 10 years, but so far there are no regulations on the management of technology fairs or regulations on the registration of S&T achievements or on the method to evaluate S&T achievements¹. Or though technology incubators have been set up and developed for nearly 10 years, there has not been no specific guidance for implementation,... As a result, we could not control the outcome and quality of the research results created in the country as well as could not promote continued development of these activities.

The phenomenon of “in debt of under laws documents” to guide implementation of policies is a “chronic disease” in Vietnam. Law on High technology was adopted by Parliament on 13th November 2008, with a number of incentives for the transfer of research results in the field of high-tech, but it was not fully implemented due to missing a lot of guiding documents², including legal documents for venture capital fund formation

¹ China has managed Regulation Fair Trading Technology (2000); Registration Regulation achievements of S&T; Measures the achievements of S&T, we can refer to learning [24].

² Circular No. 32/2011/TT-BKHCN 15/11/2011 MOST of rules defining project criteria tech applications, projects produce high technology products and appraisal application for certification activities tech applications, a newly established enterprises investment projects producing high-tech, high-tech enterprises recognized as the basis for project applications tech, projects producing high-tech products.

and development. The technology application under the Law on Science and Technology was in a similar situation.

Second, provisions of enacted Laws have many shortcomings affecting the interest of the state.

In order to develop an open investment policy to attract direct investment from abroad (including research results), The Law on Technology Transfer provided provision that only technologies of limited transfer have to register. With this provision, it appears the risk of causing losses to the state budget, especially for the technology created by using the state budget, as it disregards the role of the state in management, coordination, directing and promoting dissemination and transfer of research results, and it is impossible to control information on what technologies currently available in the market. Scientists in the field of agriculture all knew the information that the TH3-3 hybrid rice variety of Dr. Nguyen Thi Tram had been transferred to Tan Cuong company Ltd., (in Nam Dinh province) for VND 10 billion. In reality, there are research results obtained by using State budget gets not much revenue when transferred, but the total value obtained would be much higher than the VND 10 billion as the case mentioned above after a certain period of commercialization in the form of multiple transfer of right to various users. However, the state as the funding agent and owner of the research results did not get any money back from the process of their commercialization. One of the reasons was that research results were not of limited technology transfer as said above. On the other hand, although the new Circular 15 was issued it was not seriously and thoroughly implemented by state S&T agencies. Most of the state S&T agencies from central to local level were out of management of research results, especially for those after being accepted. Now many countries like China, Korea, the registration of technological transfer contract is a requirement for the purpose of technology and research results management.

Third, the current administrative sanction level is still low not enough to prevent infringements in the dissemination and transfer of technology results.

The government Decree No. 99/2013/ND-CP dated 29th August 2013 concerning administrative sanction to violations in the field of industrial property, the highest sanction level was only VND 250 million and VND 500 million to infringed individuals and organizations, respectively; Decree No. 64/2013/ND-CP dated 27th June 2013 of the Government in respect of administrative sanction applied to violations in S&T, technological transfer activities at the level up to VND 50 million and VND 100 million for

infringed individuals and organization, respectively. Besides the above administrative sanctions there was no provision concerning the compensation for losses. So the violating person/organization is ready to accept administrative fines because the profit obtained with violation was much higher than the highest level of sanction of VND 500 million.

Fourth, state S&T agency has no unit responsible for management of research results, so it made the dissemination and transfer of research results inadequate.

According to the government Decree No. 20/2013/ ND-CP of 26th February 2013 defining functions, jurisdictions and organizational structure of the Ministry of Science and Technology, a central agency in charge of state S&T management with 28 respective subordinate units including 23 units of state management function and 5 units providing services for the state management functions of the Ministry. At local level, under the provisions of Joint Circular No. 05/2008/ TTLT BKHCN-BNV dated 18th June 2008 guiding the functions, responsibilities, jurisdictions and organizational structure of the agency specialized in S&T management under provincial People's Committees, namely the Provincial Service of S&T and under district administration, namely the District Division of Economics and Infrastructure. However, the management of S&T activities is specialized by sector, there is no specific unit responsible for state management of research results, especially the results after being accepted. The management of these research results requires most synthesized knowledge, including legal knowledge (especially on intellectual property matters), research project management, technical and commercial knowledge. As a consequence, the handling of problems related to rights and obligations of technology owners is usually assigned to one of the functional division already set up, so it may affect to interest of the technology author and cause losses to the state when having research results wrong assessed³. Even there was violation of intellectual property rights in research results at state management agencies. It was a typical case among many other examples when calling for S&T proposals, selecting eligible individuals/organizations to implement S&T tasks annually by state S&T management agencies⁴. To

³ See also: Nguyen Van Anh. (2009) *Some discussions on benefits of enterprises from IP rights of technology*. Journal of Scientific Activities. Ministry of Science and Technology, No. 604, September 2009, pp 3-33; Nguyen Van Anh. (2010) *Further discussions on the benefits of enterprises from IP rights of technology*. Journal of Scientific Activities. Ministry of Science and Technology, No. 615, August 2010, pp 23- 24.

⁴ Many entities, particularly those involved in state management of S&T at local level annually call organizations or individuals for proposing S&T tasks. Then organize the bidding to select desired S&T tasks, but the proposing agents are often unsuccessful applicants. As a result, it makes the S&T state management body difficult and illegal when accepting the research result without agreement of the research idea proposer and making payment for copyright for proposing individuals and organizations.

date, the results of research after being accepted are basically lying in drawers⁵.

Fifth, missing some important policies such as training of personnel specializing in the commercialization of research results, development of venture capital, policies to prevent risks in realization of S&T activities, subsidies for unemployment in S&T activities.

It is complicated and risky when making investment and doing normal business, and it is much more risky for conducting research to obtain successful results. But now, the commercialization of research results is almost spontaneous without a formal and systematic training program. There is no venture capital in the country, primarily comes from foreign investors. There not exists protection mechanism for scientists in doing research and application of new results, especially when facing failure, sometimes unsuccessful research was considered a crime, lack of incentives to support the state management agencies involved due to fear of joint liability to risks. No policy to deal with unemployed S&T personnel to facilitate their mobility in the labor market of S&T. No policy to encourage and support for efficient creativity of scientific workers to promote the introduction of research results in the market. In reality, some creative movement shave been organized at both central and local level, but they disappeared after launching and giving awards.

Sixth, limited advocacy and dissemination of research results.

The result of most studies has not widely been publicized on website of central and local state management agencies. Information on objects protected of Industrial Property rights by the National Office on Invention of Vietnam was not timely and regularly updated. As a result, there exists the phenomenon of duplication of S&T task.

Currently, in many localities, there does not disclose the list of individuals and organizations performing S&T tasks or applying research results, so it is difficult to assess the applicability of the study and the real capacity of individuals and organizations in S&T performance.

4. Solutions to promote the dissemination and transfer of research results in Vietnam

⁵ See also: Nguyen Van Anh, Le Vu Toan. (2012) *Proposed management model of results of research projects after acceptance*. Journal of Scientific Activities, Ministry of Science and Technology, No. 635, April 2012, pp 57-60.

To promote the dissemination, transfer of research results, it is required first to review the system of legal documents concerning S&T state management for corrections, amendments to ensure consistency between relevant laws, guidelines for enforcement to settle, at the soonest, the situation of “in-debt of under-law instructive documents”. At the same time adding new policies to support a proper development in the following directions:

First, to set up a focal point coordinating organization specialized in state management of dissemination and transfer of research results.

From the above analysis, it shows that in Vietnam, it is necessary to establish an organization as focal point agent in charge of state management on dissemination and transfer of research results. This focal point organization has the responsibility to review the system of legal documents at all level and fields relating to dissemination and transfer of research results, ensuring promoted transfer of research results regardless they were created under market or non-market mechanism in conformity with international practice, to ensure interests of the State, organizations and individuals who have invested in research, transferred research results with the aim to establish the S&T market in Vietnam. Realize, step by step the socialization policy of dissemination, transfer of research results as per market mechanisms.

In addition, this focal point coordinating organization shall be responsible for supporting the organizations and individuals producing research results by improving legal procedures to attract the transfer of new technology, source technology from abroad to Vietnam as well as proposing appropriate mechanisms, policies to prevent obsolete technology imported to the country making pollution to environment in all forms.

The coordinating organization is also responsible for building a cooperation program with local and international partners with regard to dissemination and transfer of appropriate research results.

The coordinating organization has responsibility for the management of state assets being formed in the investment process to produce the research result. It shall be on behalf of the state to implement the transfer of ownership or right to use of the research result, as well as conduct monitoring on the implementation of the rights of organizations and individuals to ensure the benefits be transferred to the state, the author and the organizations/individuals involved.

The establishment of coordinating organizations should be vertically arranged at three levels, central level is Ministry of Science and

Technology; provincial level is Department of S&T; district level is the Division of economics and infrastructure.

Second, to establish a control mechanism strong enough to deal with violations in the dissemination and transfer of research results.

New research results, especially the research results in the technical areas with high possibility of commercialization, are often associated with intellectual property. Strict enforcement of the law on intellectual property is a basis for attracting research results as new technology to Vietnam through trade, investment activities. Therefore, in addition to issued administrative rules, there should be mechanisms to compensate losses as stipulated under the civil codes and state compensation law, for violations in the dissemination and transfer of research results in all fields.

Third, to strengthen information and communication on research results.

It should soon accelerate the consolidation of S&T information systems to form the national S&T database in the spirit of the Government Decree No.11/2014/ND-CP dated 18th February 2014 concerning S&T information activities. It should be clearly defined of responsibilities and obligations between the parties involved in the transfer of research results to S&T information centers of the State. With the research results as technical solutions, the transfer to S&T information centers should only be done after the entire result is assessed, accepted and registered of the right of intellectual property rights protection. State centers for S&T information should ensure benefits for authors and participants under provisions of the Law on S&T, and the Law on Intellectual Property, and the prevailing provisions on initiatives.

S&T information and communication centers need to diversify their products and services in providing S&T information as per customer needs. The service of S&T information for customers can be carried out through thematic, topic publications (books, newspapers, magazines) or via on-line Internet access as per request of users. There should established tariffs for customers to choose the type of service to be provided in response to their needs as package information, thematic information, or the volume of information to be searched, access per time unit. There should be interactive, online support for customers in the process of finding information. It should develop flexible forms for payment by customers, such as via phone messages, ATM card instead of using only the current form of payment in cash or by bank transfer. It needs to develop the type of

warning information⁶, forecasting technology⁷ to help enterprises to build technology innovation strategy for present and future investment in most promising areas. At the same time, there should create necessary balance between the top-down government policy and the bottom-up initiatives based on the market demand.

It should set up a network of affiliates in the country to carry out the dissemination of information through conferences, seminars, common forum of organizations through real or virtual specialized publications, newspapers, journals.

Fourth, to issue new policies related to dissemination, transfer of research results.

Besides the amendment, revision of the system of legal documents, such as current remuneration for individuals and organizations participating in the assessment and recognition of research results, the distribution of benefits between the state and the parties involved in producing research results when they have been commercialized and put into application, additional provisions relating to the operation of S&T service organizations to create a legal framework for them to operate more efficiently, improvement of the quality of S&T service organizations, it should encourage businesses, organizations and individuals to make investment in the development of S&T services to create a favorable environment for research results to be in smooth transaction. It should control the transfer of research results through the registration of research result transfer contract, technology transfer contract... In upcoming time, it is necessary to issue new policies in respect of the following issues:

Developing programs and specialized training system related to the commercialization of research results.

As analyzed above, the dissemination and transfer of research results is one of the basic content of the formation of the S&T market in Vietnam. To promote these activities it is necessary to formulate programs and specialized discipline for undergraduate and postgraduate training to create human resources for policy development of concern, and participation in the state management or working for organizations/enterprises in the area of transfer, reception, improvement, innovation of research results.

⁶ Warning technology (Veille Technologique) is a content of technology assessment in order to see the pros, cons of the technology, it thereby can prevent and deal with negative consequences may be produced by a specific technology or a technology generation (technology flow) or some new technologies affecting production and social life.

⁷ Technology Foresight is a forecasting method to determine whether the technology is likely to develop in medium-term future.

Development of venture capital, promotion of insurance scheme for research results obtained.

It should sooner set up venture capital funds as stipulated under the Law on High Technology. At the same time to encourage organizations and individuals to establish investment funds for technology development. To conduct studies of forming technology shares for transaction in security market, create risk insurance for research results as the process of creation of new technology contains very high risks. However, if it is successful, the value brought by technology is enormous. In developed countries, it is very popular of existing the type of technology stocks, venture capital funds, risk insurance scheme for research results, these always go hand in hand with S&T business incubators, technology incubators with a view of assisting new technologies to form and develop.

Issuance of policies to prevent risks in S&T activities, unemployment subsidies for personnel realizing S&T activities.

S&T activity is one of very risky areas. In Vietnam, many individuals working very hard in doing by putting a lot of effort and money to pursue their passion for research. But it is very difficult to put the research results obtained into application or transaction in the market due to cumbersome administrative procedures. When there is incident relating to research results, they do not only suffer from financial losses, but sometimes face criminal judgments caused by the application of their research results⁸. Therefore, there is a need to issue policies to protect individuals related to failed application of research results in the event of risk, to encourage and promote the transfer of research results.

On the other hand, according to Decree No.115/2005/ND-CP dated 05th September 2005, the State is planning to transform public S&T institutions in line with autonomy, self-responsibility mechanism. However, the transition takes place very slowly. One of the basic reasons is that we currently still do not have compensation policies for unemployment during the transition. Therefore, it is necessary to early issue such policies for the above matter in order to create a healthy competition between state and non-state run S&T organizations, as well as to attract foreign S&T

⁸ It was the case of Viet Sec Technology JSC of Ba Ria - Vung Tau province. The company did research and design of ships/boats using PPC material. PPC is a new material used the first time in Viet Nam. The company faced many difficulties in the registration and examination in Vietnam due to no standards at international level existed for this kind of material. Fortunately the products of the company were tested by an international registration agency and were accepted for use. As a result the company's products were rewarded in 2012 with golden medal at national Techmart by Minister of science and technology. In 2013, when an incident occurred in Can Gio, Director of this company was prosecuted by investigation agency for civil liability relating to the introduction of the new material into use in Viet Nam.

organizations operating in Vietnam with a view of promoting the transfer of research results.

In summary, in Vietnam policies relating to dissemination and transfer of research results have gradually been developed. However, this legal system has not been perfect, the performance of state agencies, especially those in charge of S&T development, in terms of organization and management, is not good enough, therefore it has not really promoted the dissemination and transfer of results research, and the establishment of S&T market in Vietnam. In the upcoming time, it should early make revisions, amendments to the present system of legal documents, reinforce the organization and management of research results as mentioned above.

REFERENCE MATERIAL

1. Law on Science and Technology No. 29/2013/QH13 dated 18th June 2013;
2. Law on Intellectual Property promulgated on 29th November 2005 and Amended Intellectual Property Law of 19th June 2009;
3. Civil Codes No. 33/2005/QH11 dated 14th June 2005;
4. Law on Technology Transfer No. 80/2006/QH11 dated 29th November 2006;
5. Government Decree No. 115/2005/ND-CP dated 05th September 2005 stipulating the autonomy of public S&T institutions;
6. Government Decree No. 13/2012/ND-CP dated 02nd March 2012 issuing the Statute on Initiatives;
7. Government Decree No. 99/2013/ND-CP dated 29th August 2013 regarding administrative sanctions to violations in the field of industrial property;
8. Government Decree No. 64/2013/ND-CP dated 27th June 2013 concerning administrative sanction to violations in S&T activities, technology transfer;
9. Government Decree No. 20/2013/ND-CP dated 26th February 2013 defining the functions, jurisdictions and organizational structure of the Ministry of Science and Technology;
10. Government Decree No. 08/2014/ND-CP dated 27th January 2014 detailing and guiding the implementation of some articles of the Law on S&T;
11. Government Decree No. 40/2014/ND-CP dated 05th December 2014 stipulating provisions on the use, special treatment towards personnel performing S&T activities;
12. Government Decree No. 87/2014/ND-CP dated 22nd September 2014 with respect to attraction of Expatriate Vietnamese working in S&T and foreign experts to participate in S&T activities in Vietnam;
13. Decision No. 850/QĐ-TTg dated 07th September 2000 of the Prime Minister approving the project “Construction of key national laboratories”;

14. Decision No. 293/QD-BKHCHN of 27th February 2007 of the Ministry of Science and Technology on the issuance of “sample contract for scientific research and technology development” and “periodic reporting form” of research projects under key state S&T Programs.
15. Decision No. 592/QD-TTg dated 22nd May 2012 of the Prime Minister approving the program to support the development of S&T enterprises and public S&T organizations in transition to the autonomy, self-responsibility mechanism;
16. Joint Circular No. 06/2008/TTLT BKHCN-BTC-BNV dated 18th June 2008 of the Ministry of Science and Technology, Ministry of Finance, Ministry of Home Affairs guiding the implementation of the Government Decree No. 80/2007/ND-CP dated 19th May 2007 concerning S&T enterprises;
17. Joint Circular 05/2008/TTLT/BKHCHN-BNV dated 18th June 2008 of the Ministry of Science and Technology and the Ministry of Home Affairs guiding the functions, responsibilities, jurisdictions and organizational structure of agencies under provincial, district People's Committee specialized in S&T management;
18. Circular No. 18/2013/TT-BKHCHN dated 01st August 2013 of the Ministry of Science and Technology guiding the implementation of some provisions of the Statute on Initiatives issued under the Government Decree No. 13/2012/ND-CP dated 02nd March 2012;
19. Circular No. 05/2014/TT-BKHCHN dated 10th April 2014 of the Ministry Science and Technology issuing standard contract form for scientific research and technological development;
20. Circular No. 14/2014/TT-BKHCHN dated 06th November 2014 of Ministry of Science and Technology issuing regulations regarding the collection, registration, storage and disclosure of scientific and technological tasks;
21. Circular No. 15/2014/TT-BKHCHN dated 13th June 2014 of the Ministry of Science and Technology defining the sequence and procedures of transfer ownership, the right to use of the result of scientific research and technological development using the state budget;
22. Nguyen Lan Anh. (2003) *Study of mechanisms and measures to promote the application of research and development results after acceptance*. Synthesis report of a research project at grass root level conducted in 2003 by the National Institute for Science and Technology Policy and Strategy Studies;
23. Tran Ngoc Ca. (2011) *Research on the US experience in development of methodology for analysis of current status of innovation and innovation policy, applied to the formulation of policies to support technological innovation in small and medium enterprises in Vietnam in integration context. Synthesis Report generated from the implementation of the S&T Cooperation Protocol with the United States* conducted by the National Institute for Science and Technology Policy and Strategy Studies;
24. Hoang Xuan Long. (2007) *Experience of China in local technology market management*. Journal of Science and Technology, No. 02/2007.
25. Nguyen Van Xo. (2001) *Vietnamese dictionary*. Ho Chi Minh City: Youth Publishing House.