

ANALYSIS OF SCIENCE AND TECHNOLOGY POLICIES: PERSPECTIVES AND CHALLENGES

Ass. Prof. Dr. Dao Thi Ai Thi
Management Training Institute

Abstract:

All policy ideas have roots from the human mindset, shape from practice then present, push up and have purpose to solve practical problems. This report does not target to analyze existing policies as well as their impacts to socio-economic effects of Vietnam. The report is focused on studies of some basic matters, namely: i) Brief note on the importance of analysis of science & technology (S&T) policies; ii) Interpretation of some types of mindset and their impacts of these types of mindset in analyzing S&T policies in Vietnam; iii) Analysis of shortages of S&T development of Vietnam in a global manner; iv) Perspectives and challenges for S&T development of Vietnam as seen by analyzers for the selection of policies as well the persist existence of rice-cultivation culture and small-scaled agriculture which Vietnam is facing now.

Keywords: *S&T policies; Policy analysis.*

Code: 13090303

1. Why is the analysis of S&T policies?

S&T policy analysis in practical S&T context of Vietnam is to show how the S&T platform is: high or low, strong or weak. It is also a problem for S&T policy analyzers of Vietnam to see more clearly the importance of S&T analyzing capacities as we have today.

S&T policy analysis is to make plans, then issue, implement and evaluate the effect of policies. The policy analysis is to show the existing problems of S&T policies in passed, present and future times to have visions to existing problems and needs to renovate S&T policies. Particularly, the analysis would identify perspectives and challenges which Vietnamese S&T policy makers are facing.

S&T policy analysis is to provide interpretations of aspects, positive or negative, then to select optimal options for background to issue effective policies in practice.

S&T policy analysis is to set up plans and to build policies of strategic visions for national S&T development and, at the same time, to build concrete policies for key-important, specific and spearheading fields.

S&T policy analysis is to plan, issue and implement policies in scientific manner, to foresee advantages and disadvantages of policies then to select the most suitable policies. The set up of “strategies”, “programs” or “visions” for S&T development actually lacks a right analysis and this situation leads to the lack of scientific background for these policies.

S&T policy analysis is to build strategies for S&T development including various topics, namely:

- (1) Right evaluation of the actual status and the analysis of hard problems of S&T development of Vietnam.
- (2) Right definition of objectives and requirements of renovation for S&T development of Vietnam in certain period of time, i.e. “10 years strategies” or “15 years strategies”.
- (3) Choice of priorities for spearheading S&T fields, the selection of orientations, paths, resources and measures for S&T development.
- (4) Learning, absorption and application of the world’s advanced S&T models.
- (5) Establishment of favorable conditions for Vietnamese scientists to conduct creative activities and mobilize all the capacities for their participation and integration in the modern S&T activities of the world.
- (6) Issuing policies to attract and maximize the use of S&T talents, the formation of excellent scientists for better contribution to socio-economic development of the country.
- (7) Improvement of S&T organizations in all the economic, political, cultural and social aspects of the country.

Briefly, the S&T policy analysis is to show out the internal nature of the matter as well as the nature of links and interactions of natural and social sciences in terms of policies. The S&T policy analysis is to indicate problems related to bureaucratism, corruption and other problems of S&T policies under political, economic, cultural and social optics. At the same time, the S&T policy analysis is to see clearly the orientations and movements of natural and social laws that S&T policy makers should understand and act in conformity to laws but not “force” them or go against them.

In its nature, S&T policies decide policies of training and education. S&T, as training and education do, starts from demands of life and national capacities. Therefore, the S&T policy analysis is the key to open S&T doors for all the fields, economic, political, social, security and national defense.

2. Some problems of mindset changes in S&T policy analysis

The human thinking capacities are extremely wonderful. The problem “S&T can develop or not” depends on right and adequate policies. The problem “a policy is right and adequate or not” depends on thinking capacities of analyzers and the selection of policies. The effective analysis of S&T policies depends much on the human thinking capacities.

The human mindset is divided into 5 aspects, namely:

First, the mindset has legal orientations

The legal mindset is based on exactness of thinking which is not impacted by subjective wills in analysis of S&T policies. This type of mindset emphasizes the value of reasoning, respects the principal concepts and the justice. The development of mindset in this legal direction helps to keep the S&T policy analysis in right and exact way. However, in practice the right application does not always give right answers. Applying Ho Chi Minh doctrine: “Keep the unchanged platform to face the changing circumstances” for this type of mindset, we need to position policies in right historical contexts and to avoid the once-for-ever approach in analyzing and selecting policies.

Second, the mindset has subjective orientations

The subjective mindset in S&T policy analysis is usually based on personal sensing perception of individuals. The sensing tendency in searching, analyzing and assessing information usually leads to impulsive and improvising perception without scientific background in analyzing and selecting S&T policies. This type of mindset in S&T policy analysis leads to wrong practice of works which would cause heavy consequences for management activities in general and S&T activities in particular.

The partial mindset leads to unclear perception and judgment and to difficulties in defining strong and weak points of policies and in executing rights and liabilities in S&T activities. The consequences are the practice of S&T policy analysis which is not based on scientific and practical background and make S&T resources lost. This practice leads also to formal scientific research works and wrong issuance of certificates. Then this wrong application cannot solve socio-economic problems and may lead to confusing perceptions of right and wrong, correct and false and etc. The S&T policy analysis based on personal sensing mindset leads to the wrong identification of values, cannot put S&T into practice and cannot bring real effects.

Third, the mindset has criticizing orientations

This type of mindset in analyzing and selecting S&T policies sees only limited sides, shortages and errors of policies for blaming. It may lead to extreme perception and judgment and has no measures to stimulate, encourage and push up efforts to consider and identify problems.

In Vietnam, since the successful application of reform policies in 1986, there appeared so many mindsets of criticizing nature. This new trend naturally accelerated the reform process but contributed also to development of extreme approaches of some policy analyzers and policy makers. They changes without keeping the Eastern culture concepts of Viet peoples then it leads to the issuance of inadequate S&T policies in certain fields which cannot create driving forces for scientists, S&T based businesses and technology applicers. “Brain drains” and low effects of scientific research works and technological applications are the consequences of non-scientific and inadequate policies.

Fourth, the mindset has optimistic orientations which encourage creativity, and inventions

This type of mindset in analyzing and selecting S&T policies encourages in developing advantageous sides of matters. For example, it stimulates activities of scientists through reducing the administrative aspects of scientific research works, provides particular incentive policies for outstanding scientific research works and inventions.

This type of mindset has high humanity values and stimulates activities of peoples. The analysis and selection of policies requires a lot of this type of mindset which lead to effective practical activities.

Fifth, mindset has the objective nature, behavior orienting and controlling actions

In their mindset, S&T policy analyzers and makers have two actions: analyzing and synthesizing to issue the most correct decisions. The mindset catches the objective movement laws of socio-economic life, natural and social laws, and human psychology to make the most effective analysis and selection of policies. The respect of objective laws in analyzing policies helps to make interpretation, analysis and search of new directions of moves which follow objective laws but not go against them.

The objective mindset helps analyze and select S&T policies in correct and adequate ways. For example, the center-controlled economic policies remain adequate for the wartime but not suitable for the construction period, particularly for S&T development. For that reason, those who have the

scientific mindset would change mechanisms to fit the objective laws. In practice of the post-1975 period, the mindset for issuance of policies did not fit the objective reality then it naturally leads to stagnation. After 1986, the development of mindset to make shifts of policies and mechanisms, from center-controlled management to market driven mechanisms, from subsidizing mechanisms to self-controlling mechanisms, allowed to make new development steps and to create driving forces for S&T development.

The objectivity is the crucial mindset aspect in analyzing and selecting S&T policies and in combining the 5 above mentioned types of mindset.

The Prime Minister had signed Decision No. 418/QĐ-TTg dated 11 April 2012 to approve the S&T Development Strategies, 2011-2020 periods, which includes the main contents such as the Concepts of S&T development, Objectives of S&T development, Orientations of tasks of S&T development and Main solutions. Ministry of Science and Technology (MOST) had held the national conference for implementation of this document. The 2013 amended S&T Law, substituting the one of 2000, shows the results of a process of serious and objective analysis in the innovative mindset.

It is possible to say that these documents contain the serious mindset which gets updated to the civilized world's level, improves the scientific research management works. Particularly, they indicate the links between natural and social sciences for regional and local socio-economic development on basis of models from advanced nations. It is the perspective for the future development of Vietnam.

3. Where is the S&T platform of Vietnam? Perspectives and challenges

3.1. Where is the S&T platform of Vietnam?

When we talk about “the platform”, we mean a solid background for S&T to exist and develop. We usually mention the economy, culture, agriculture and etc. The S&T platform is the key to open to other fields? This was clearly seen through development periods of human civilizations.

S&T achievements in every historical period are marked by development mark-stones of various civilizations. When the rice civilization developed, it was the time of establishment of the agricultural civilization. This agricultural civilization existed tenaciously in the human history, particularly in Vietnam.

The agricultural civilization has three main specific features: i) Existence of the rice culture; ii) Main economic role of cultivating and livestock breeding; and iii) Popular handicraft production.

The term of “platform” of the so-called “agricultural civilization” includes the following basic components:

- (1) Policies and mechanisms are of subjective and will-based nature. They were formed from experience-based doctrines without any scientific background.
- (2) Close structure of villages, inside orientation without exploring and renovating activities.
- (3) Popular farmer psychology with short visions for immediate benefits of their groups. The community orienting mindset leads to cover the satisfaction of individual benefits without clear indication of individual responsibilities.
- (4) Poorly developed infrastructure without any plans for construction.

These 4 components of the agricultural civilization “platform” show the lack of modern scientific knowledge and advanced technologies for socio-economic development of the nations in general and of Vietnam in particular.

James Watt invented steam machines which opened the gate into the industrial civilized society with the following main features: i) Existence of industrial civilization in pace with urbanization; ii) Main economic role of industrial production; iii) Large use of machines.

These three main features make the composition of the following elements:

- 1) Policies and mechanisms orient to public interests and social welfares. They are formed from scientific knowledge and objective laws.
- 2) Unified organization, urban development, outside orientation and high level of S&T development.
- 3) High human development with highly respected disciplines.
- 4) Developed material facilities, modern technical tools, unified, integrated and modern infrastructure.

The knowledge civilization has the following basic features: i) Global knowledge, high technologies, developed knowledge economy, confirmed personal values, developed individual capacities, clearly defined individual responsibilities; ii) S&T market is extended, flexible, creative and

innovative; iii) High combination of scientific and experience-based knowledge which creates highly effective productivity.

The knowledge civilization is composed of the following elements:

- 1) Policies and mechanisms orient to systems of global values which created favorable conditions for development and global technology transfer.
- 2) Multi-faceted organization with flat world concepts and optimal S&T socialization.
- 3) Liberated human and labor resources which put end to all constraints.
- 4) Strong development of material conditions and software technologies, intellectual products gain respects and sustainable development.

The three developed human civilizations are studied to provide the insight for the S&T reality of Vietnam then it provides the vision where it locates and which civilization it gets influenced from. Vietnam does not have a strong S&T take-off because of the long lasting and tenacious existence of the agricultural civilization and the rice culture. Scientific research and technological development are still impacted from small-scaled farmer production process which is dispersed, fragmented, formal and non-integrated. The Vietnamese S&T does not have breakthrough moves from barriers of bureaucratic and administrative concepts and behaviors in activities of scientific research and technological development.

The most expression of bureaucratic and administrative management is the concepts to equate sciences and powers which means that the high power ranked persons in any organization would have the commanding role in scientific fields of that organization. Similarly, the outcomes of research works are evaluated by the number of reports' pages to be presented and the volume of administrative formalities to be completed. This situation leads to the lack of a perfect science of S&T policy analysis.

From another side, there exists a habitude to follow experiences which can expressed, by other words, as "farmerization" of scientific activities. It means also the low level of passions for scientific research of experts and scientists. Instead of that there are passions for benefits and money earning and the "administration" of scientific research activities. The bureaucratic and heavy administrative mechanisms make real scientists and experts lose their passion and stimulation for creative work because they cannot stand outside of the common law which says "the social existence decides the

social awareness”. This practice leads to consequences of impracticable policies.

The “farmerized” S&T platform means the scientific research is bound with experience-based doctrines, formal approaches, individual benefits and simplified, easy and impartial evaluation of scientific research results.

All of these “administration, bureaucratization, farmerization” lead to the basic lack of real scientific knowledge, breakthrough scientific research (particularly in fields of public policies and public administration) to untie labors (workers, scientists or farmers), to untie the practice of outdated and conservative customs and habits which last hundred years in Vietnam.

It is possible to say that these basic features of the Vietnamese S&T platform create the unconsolidated corner stones for its development. Chemicals were mixed incorrectly to “water” this platform, and even the “watering” was made it was made incorrectly. This unconsolidated and inadequate platform, in majority of cases, comes from the fields of S&T policies and mechanisms. Also, where these policies come from? They do not fall down from the high sky and they do not come up from the deep ground. They are products of human activities. Then this problem remains the huge challenges for S&T development in Vietnam.

3.2. What are the perspectives of Vietnam?

There is no absolutely good policy to be applied for all the historical periods. The most important matter is policies analyzers should have the mindset to fit the actual historical situation. There is no chance to have the modernization and the industrialization when the human mindset remains the one form small scaled and fragmented agriculture production. There is no chance to have S&T advances when we still keep strongly the mindset which comes from an outdated agricultural economy. We are difficult to enter the industrial and intellectual civilization with the heavy and tenacious legacies from the rice culture and agricultural civilization without breakthrough moves of innovation. Therefore, the innovation of mindset is needed to fit the requirements of the historical period and to meet the demands of the future.

What are the perspectives of S&T development of Vietnam? Maybe they remain as potentials despite of rich natural and human resources.

However, this problem had gained the signs of change since 2011. Vietnam has issued some breakthrough policies such as the 2013 National Program of Technological Innovation, S&T Development Strategies up to 2020 and the 2013 Amended S&T Law.

3.3. What are the challenges for S&T development in Vietnam?

The S&T development of Vietnam is facing many opportunities as well as difficulties and challenges because it wishes to enter the “industrial civilization” where many advanced countries in the world are for more than a century. We are still lacking a “basic policy background” to play the role of corner stones for development to meet the objective of Vietnam to become basically an industrial and modern country by 2020 as indicated by the Socio-Economic Development Strategies. This would put down hard questions to S&T policy analyzers if they are capable of analyzing and making S&T policies in the most adequate way.

What is to do to know where we are and where we want to go in terms of S&T development? It turns out to be a whole process of works to monitor, supervise and evaluate S&T policies in the passed, present and future times. Here the challenges are the lack of a system of clear indicators for evaluation and we still base consideration on the side of sensing mindset. We are deviated not only in our mindset but also in our senses. They are values difficult to be measured. We have only senses that somewhere S&T policy makers remain “without senses” in their duties to make policies during many last years. The so-called “without senses” here is in fact the expression of bureaucratism in issuance of policies without background of practice and analysis of policies.

Resource for S&T development remains as potentials because during many last years, the S&T policies were “bureaucritized, administrialized and farmerized” so the potential have no nurturing and developing environment, particularly for potentials of S&T human resources. The brain drain is a huge challenge for S&T development of Vietnam.

Therefore, the S&T policy analysis is an extremely important work to start a procedure of setting up S&T policies which is also the ending point of this procedure. Perspectives and challenges for S&T development of Vietnam put down a difficult problem for S&T policy analysis that we have to have peoples full of capacities to foresee the perspectives and, as S&T policy makers, to produce policies with their heart and qualification. At the same time, they should be capable of finding challenges to face and be strong enough to overcome mediocre values and tiny and selfish benefits. S&T advances have no space for tiny and selfish thinking as well as for conservative and outdated policies, dogmatic and bureaucratic doctrines, corruption and individual benefits.

Finally, the perspectives of S&T development of Vietnam keep pace with the challenges risen by S&T policies. Policies can create a good environment, driving forces and legal frameworks for S&T development. Inversely, they could be a dead environment and huge barriers to S&T resources of Vietnam./.

REFERENCES

1. S&T Law, 2000.
2. Amended S&T Law, 2005.
3. Amended S&T Law, 2013.
4. Decision No. 677/QD-TTg dated 10 May 2011 by the Prime Minister for approval of the National Program of Technological Innovation, up to 2020.
5. Decision No. 418/QD-TTg dated 11 April 2012 by the Prime Minister for approval of S&T Development Strategies, 2011 - 2020 periods.