

## **PROCEDURE OF SCIENCE AND TECHNOLOGY DEVELOPMENT PLANNING IN VIETNAM**

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### ***Abstract:***

*Planning procedure has an important role to assure the quality of plans for science and technology (S&T) development. The set-up of the procedure for S&T development planning in our country should be based on the renovation of actually valid regulations, conformity to the content and nature of S&T planning, relation between the issued S&T planning and S&T development strategies and facilitation of activities of participants in preparation of the procedure of S&T planning. In our country it is needed to focus attention of hard and soft planning on the set-up of procedure for S&T development. Hard planning for S&T development should follow the 5 steps: identifications of causes of S&T planning, draft of versions of S&T planning, selection of the best planning options, improvement of the selected option and issue of the plans.*

### **1. Background for procedure of science and technology planning in Vietnam**

#### ***1.1. Actual procedure of planning in Vietnam***

Actually Vietnam has regulations of procedure of policies making which are stipulated in Law for Issuing Regulatory Documents dated 12<sup>th</sup> November 1996, Law amending and revising of the Law for Issuing Regulatory Documents dated 16<sup>th</sup> December 2002 (and Resolution No. 161/2005/ND-CP dated 27<sup>th</sup> December 2005 by the Government providing detail rules and guidelines of implementation of Law of Issuing Regulatory Documents and the amended Law), Law of Issuing Regulatory Documents No 17/2008/QH12 dated 03<sup>rd</sup> June 2008. There exist also regulations for procedures of planning. Resolution No. 92/2006/ND-CP dated 07<sup>th</sup> September 2006 by the Government on the establishment, approval and management of planning for socio-economic development which covers the whole procedure of planning for socio-economic development of the whole country (Article 14), the procedure of planning for socio-economic development for regional level (Article 18), the procedure of planning for

socio-economic development for provincial level (Article 21), the procedure of planning for socio-economic development for district level (Article 24) and the procedure of planning for socio-economic development for branch/sector level (Article 28).

Through implementation process, the procedures exhibited limitations in some basic aspects, namely:

- Regulatory documents are not integrated, they did not take to account the relations between plans, the order of implementation and background for implementation [11, p. 21];
- Conditions are not ready for effective participation of other branches/sectors and social groups in setting up of documents/policies<sup>2</sup>;
- Long procedures with overlapping and repeated segments among agencies of Ministries, the Government and the National Assembly. The unclear separation between procedure of decision making of the drafting and technical preparation made the process complex;
- Lack of analysis and decision stage of policies in the legislative process leads to intricate procedures of policy and planning<sup>3</sup>.

The consequences of these limitations in the policy making procedure in our country is large waste of time and efforts while gaining low quality of issued policies and plans [7,8]<sup>4</sup>. Facing this situation there are requests to renovate actual procedure of policy making, namely:

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<sup>2</sup> It is a basic idea and it takes attention from many researchers. For example, Prof. Kenichi Ohno (Japan Economic Research Institute), in his speech at Vietnam Development Forum, noted that due to limited involvement of enterprises and close coordination between ministries, the procedure of policy making Vietnam becomes the unique one in the world. (<http://www.google.com.vn/#hl=vi&scient=psy>)

<sup>3</sup> Some points of view say that: "Our actual way, when starting the set-up of a law, is to set up a drafting board from relevant organizations and they start right the preparation of regulatory rules based on available knowledge or experiences they collect from works or foreign referenced knowledge. This way of preparation is said to be similar to "the running in front of a running car while holding a torch (to show the way)". This way hides potential risks and therefore we intentionally admit the policies decided overseas or dictated by incomplete and unsystematic knowledge of the Preparation Board members. The thing does not stop here. In fact with the "free right of creation" assigned to the preparation without being limited by previous policies, the preparation-in-charge organizations are easy to insert their local interests to these documents and make them legal regulations. In case of compulsory sharing of drafting exclusive rights, there are risks that the drafting host organization would gather mutual compromises for benefits or legislative solutions of their power. In this case, the products gather so many desires and attempts in a law which, during implementation phase, requires efforts of explanation form relevant agencies. The unclear situation of policies makes the process of gathering the opinions of people, which are expected to make contents of laws closer to and easier accepted by people, formal and expensive. It is really hard quiz for people to read long pages of policies with unclear content, while they do pay much attention for "State matters" which do not deal much with their daily life concerns".  
<http://ttbd.gov.vn/Home/Default.aspx?portalid=52&tabid=108&catid=515&distid=2190>.

<sup>4</sup>As it was noted in "Analysis of policies - important procedure of legislative process"  
<http://ttbd.gov.vn/Home/Default.aspx?portalid=52&tabid=108&catid=515&distid=2190>

- Building a mechanism of social counter-arguments for socio-economic planning which means the necessity to have more people and enterprises involved [10, p. 277];
- Necessity for Vietnam to start a new procedure of policy planning with the involvement of all the stakeholders including the Government, enterprises, users, foreigners, sponsors, scientists, experts. Sometimes enterprises or scientists can draw out a strategy to submit to the Government. Policies are not purely a State administrative document<sup>5</sup>;
- Necessity to renovate contents and ways of appraisals of development planning. First of all, it is necessary to re-identify the basic requirements out toward the appraisal of planning. It has to consider the compatibility to the national development strategies of development orientations of large regions and the quality (adequate scientific nature and feasibility) of planning. The content of appraisal should be the compatibility and reasonability of targets, works, key projects of national and regional development scale, the adequacy of implementing solutions, impacts to eco-environment and potential supports by population [6, p.12];
- Amendment and revision of Circulars guiding the planning works, and the clear list of sectors and products which require plans. These works also require the gathering of opinions of relevant agencies before final approval of these sectors [8, p.13];
- Study for building up a law for planning to unify the global rules of the order of setting-up, appraisal, approval, implementation management [8, p.14].

The set-up of the procedure of S&T development planning should take to account these tendencies.

## ***1.2. Relations involving the S&T development planning activities***

### *1.2.1. Specific nature of S&T planning*

The State planning activities deal with many various fields. In comparison to other fields the S&T planning has its own specific nature such as<sup>6</sup>:

- S&T development are basically of non-profit or indirectly benefit generating nature, differently for other economic fields of activities. S&T development requires long-term investments;

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<sup>5</sup> “Renovation of policy making procedure of Vietnam” <http://www.google.com.vn/#hl=vi&scient>

<sup>6</sup> It is possible to keep different points of view toward the nature of S&T activities. Here only some basic points are indicated. Other points with deeper analysis will be presented in later parts.

- Limited market mechanism in S&T fields requires more State's role of intervention;
- Difficulty of S&T development forecasting leads to high risks and requires adjustment measures (many problems in the cumulative S&T development need to be clarified, many trends in S&T development remain complex due to inter-dependency of sectors);
- S&T activities include various actual activities such as scientific research, technology development research, S&T services and other activities for S&T development;
- Demand of S&T planning is bound to development trends of S&T activities, namely:
  - + Increasing scale of numerous activities which require coordination;
  - + Being closely bound to socio-economic activities [2, p.55]<sup>7</sup>;
  - + Requirements and abilities of S&T forecast are increasingly clear.

#### *1.2.2. Relations between S&T Plan and S&T Development Strategies up to 2020*

The Prime-Minister signed Decision No. 418/QĐ-TTg dated 11 April 2012 approving S&T Development Strategies, 2011 - 2012 periods. This is the important document favorizing the set-up of the S&T Plan in the future.

S&T Development Strategies provided background for definition of some aspects in S&T Plan, namely the role of S&T Development Strategies as background for S&T Plan is seen through, first of all, the following aspects:

- Concepts, objectives, orientations and solutions presented by set-up S&T Development Strategies are background for contents of S&T Plan. This is some aspects which need to be grasped thoroughly in set-up S&T Plan;
- Objects and scopes which are presented in S&T Development Strategies are background for definition of objects and scopes S&T Plan;
- The time term of S&T Development Strategies is 10 years, from 2010 to 2020. This time period should be taken into consideration for S&T Plan;

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<sup>7</sup> In fact, in comparison to previous eras (Ancient Science, Classic Science and Temporary Science), the most important feature of the Temporary Science is the forecast capacities which is noted as: "The actual sciences are not close and novel, in their high speed of changing and huge capacity of thinking, raised the scientific mindset to a new and higher level where the scientific forecast plays the important role".

- Projected expenditure scale of the Plan is defined by 1.5% GDP by 2014 and higher than 2% GDP by 2020, where the State budgeted investment for S&T is not lower than 2% of the annual State budget. This source needs to be balanced well in S&T Plan.

At the same time, the contents of S&T Development Strategies should be further concretized in planning framework. The following aspects need to be concretized through S&T planning, namely<sup>8</sup>:

- Re-structuring and re-planning the S&T organization system focused on key fields prevented spread and overlapping and they are appropriate to the strategies of socio-economic development of the country, economical regions, branches and sectors;
- Focusing efforts on investment for the Vietnamese Academy of Science and Technology, Vietnamese Academy of Social Sciences to become national leading science organization of Vietnam and among ASEAN countries;
- Building in every key economic zone, at least, one strong S&T organization in conformity to advantages and potential of the zone. The organization should keep close contact with universities for training human resources and conducting S&T tasks...;
- Developing the system of organizations of technological transfer, technology and equipment markets;
- Setting up in every zone some models of links between S&T, education and training, production and business which are directed to exploitation of natural, historic, cultural and social advantages;
- Building the system of organizations and technical infrastructure for S&T activities in regions, such as R&D institutes, standard-measurement-quality centers, S&T advances application centers and etc...;
- Investing for enhancement of calibration and test capacities for standard-measurement-quality centers at central and local levels to meet requirement of regional and international integration;
- Building and developing networks of service centers for consulting, testifying, appraising, evaluating, exploiting and promoting IP assets...

Some aspects posed by the S&T Development Strategies are the requirements marked in the Resolution of the 6-th Conference of the XI-th

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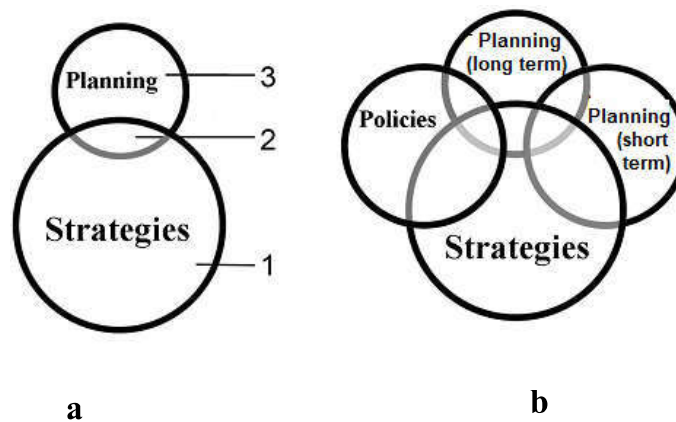
<sup>8</sup> Development planning is only a channel to concretize the S&T Strategies. In addition to it there exist also plans, technological road-maps, policies, programs, and S&T projects.

Party Session (Resolution No. 20-NQ/TW) on S&T development for industrialization, modernization in socialism oriented market economy and international integration, namely:

- Renovating, planning and re-arranging the system of S&T organizations and universities to assure the effective activities in conformity to objectives and orientations of S&T development tasks for every period. Building modern research centers as core elements for S&T research, development and application in priority fields. Developing and enhancing capacities of the system of S&T organizations to meet requirements of developing S&T market;
- Renovating the plan for human resources development, the mechanism and policies for use of S&T staff. The plan for development of human resources needs to be bound closely to the plan of socio-economic development and meet requirements of the country up to 2020 and vision to 2030;
- Concentrating resources to build and to put into effective operation of the three national high techs zones. Planning centralized high tech agriculture zones and information technology centers. Planning and developing modern research centers attached to national key laboratories and special laboratories;
- Promoting the development of S&T enterprises, supporting enterprises to set up R&D units, encouraging the establishment of FDI-supported R&D institutes and the establishment of Vietnam-based branches of foreign R&D institutes;
- Developing modern national S&T information and statistic infrastructure, establishing S&T museums.

It is necessary to note that the relation between S&T Plan and S&T Development Strategies is a complex problem. First of all, there are some contents of S&T Development Strategies to play the background of S&T Plan but there are also some contents of S&T Development Strategies to play the role of planning. As Fig. 1a shows, the contents of Strategies (1) play the role of background for the contents of the Plan (3), and the Strategies and the Plan have also common contents (2).

Further, the S&T Development Strategies are implemented together with other S&T plans, programs, and policies. There exist possible some common contents between them (Fig. 1b).



**Figure 1:** Relation between the S&T Development Plan and the S&T Strategies

### 1.2.3. Contents and forms of S&T Development Plan

Globally, there exist close relations between contents and forms of planning and building steps of the Plan. They are links between objectives and implementation means. Therefore, the contents and form of planning will govern the procedure of planning on basis of relations between objectives and means.

The basic contents of S&T Plan include various components such as concepts, objectives, orientations and solutions. Here in this chain, the previous component is background for the following component and the following components develop the contents of the previous one. The relations between the components define research steps in a well defined order.

The models and the specifications of S&T Plan are different and they require different procedure of planning. The procedure of S&T Plan when there are already the S&T Development Strategies is different from the one when the latter was absent. Activities and participants in the latter case are more and more diversified and then require a procedure with more steps. The procedure of S&T Plan based on the central controlled model is different from the one based on the market driven model. Accordingly the first model is more simple and based mainly of the State wills.

Together with independent and separated forms of S&T Plan, there are independent and separated procedures. At the same time, the demand for integrated links between S&T development plans requires the mutual compatibility and the openness for coordination between procedures.

### ***1.3. Activities and participants of building S&T development plans***

#### *1.3.1. Diversity of activities of building S&T development plans*

There exist many activities to be developed in building S&T development plans. They are divided into three main types of activities, namely: scientific research activities, activities to create uniformity and consensus and activities to reflect the wills of S&T management authorities<sup>9</sup>:

- Scientific research activities: preparation of scientific arguments for S&T planning; studies of international concepts and experiences, balancing factors and etc;
- Activities to create uniformity and consensus: coordination of local and sector's documents and gathering of opinions of stakeholders;
- Activities to reflect the wills of S&T management authorities: References of issued Party and State documents for S&T development and strategies; consideration of alternatives of planning; collection of guidelines during planning process; approval of plans.

These activities support each other, but also hold conflicts. Therefore the concrete steps and procedures are required to get consensus (development of agreed concepts and settlement of possible conflicts). Procedures of S&T development plans are required to coordinate planning activities to provide:

- Conceptual and actual nature, full and compact assurance of quality and saving implementation;
- Full and in-time mobilization of relevant stakeholders for planning activities;
- Full agreement of numerous aspects: requirements and capacities of planning, scientific research (planning is a kind of scientific research) and drafting works (planning is a kind of policies to be issued).

#### *1.3.2. Diversity of participants of building S&T development plans*

On basis of multiple activities of S&T development plans, as noted above, there exist many participants in planning process, namely: scientific background (provided by scientists), consensus (provided by scientists, enterprises and S&T management agencies of various levels) and leaders' wills (provided by top State leaders).

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<sup>9</sup> Emphasizing that the co-existence of these activities is to fit the definition from the European Regional Planning Charter (called the Torremolinos Charter) adopted in 1983 by the European Summit of Regional Planning Ministers (CEMAT) which states "The planning, at the same time, is scientific principles and ruling policies and techniques...".



Though the objectives of S&T development plans are unified but involved participants hold their own visions and interests which create conflicts. These participants also contribute their roles in various stages of building S&T development plans.

The procedures we talk about here are the ones to set up planning documents and also the ones to create a consensus and the ones to settle conflicts between participants of plan setting processes.

If the planning is based purely only broadcasts of potential trends it would not be too complex (in particular in context of strong development of computing sciences). The complexity comes from elements of social nature which get involved into planning. It is possible to compare this process to the analysis of urban planning made by Truong Quang Thao: "The planning of a Moon travel is easier than the planning of a big urban area. Excuse me, it is not my "idea" but the one of Peter Hall who said: "Many people pretend that the development of high speed and hyper speed computing tools would make the planning easier because many things are "automated" for planning works. In fact, the automation eases some boring works of detailed computational jobs but it cannot assist much for responsibility to take decisions. The most difficulty is the cybernation is easy to apply to send people to the Moon, rather than to do space planning. In first sight, this would be deemed senseless because everyone pretends that the sending of a human to space is the most complex work. But please do not confuse the nature of complexity. The Moon flight is not easy, of course, which requires a series of complex technical problems. There are two aspects to turn it more simply. First of all, the objective is identified clearly: the end to achieve is to send a human to the Moon. Secondly, the problems to solve are of physical nature which are possible to recognize and to govern, rather than problems of human behaviour. The planning work we are talking about is more difficult. First of all, the main basic objectives are not understood properly which contain so many components, namely economic growth, balanced income distribution, reduction of unemployment, enhancement and regulation of non-standard economic sectors, mobility of population, control of traffic jams, stabilization of health care centers, reduction of stress, settlement of river pollution, healthy entertainment environment, improvement of life of poor people and etc. The list should be taken endless. Secondly, the processes to be treated are the human or social ones which are not easy to interpret. Social laws behind phenomena are more difficult to be identified than the physical ones. Everyone who was working with sociology, psychology, social humanity, economics are well familiarized with these difficulties" [5].

The process of S&T development planning is to create the favorable environment to attract the large and in-time participation of stakeholders, to create gradually the consensus and to settle conflicts between them. Differently from natural and scientific processes, the planning process is of social nature [1]<sup>10</sup>.

### *1.3.3. Compatible relations between activities, stakeholders and procedures of S&T development planning*

The above mentioned activities and stakeholders require certain compatible procedures because:

- Activities and stakeholders should be taken in time and are mutual pre-conditions;
- Volume and type of activities and stakeholders will imply the number of steps of procedure of S&T development planning;
- Various forms of combination of activities and stakeholders require different planning procedures.

They are impacts which should be taken into consideration to identify the procedures of concrete S&T development plans in well identified contexts and to identify the specific procedures of S&T development plans suitable for specific fields.

### *1.4. Concrete concepts*

Globally, there exist different planning procedures due to different visions and concepts which are very specific. For example, in England, there are some authors who propose different planning procedures, namely:

- Brian Mc Loughlin's concept: Draft of global objectives (identification of objectives) → Study of schedule of activities with support of modeling → Evaluation of solutions through assessment of values/costs/benefits → Actions through public investment or control of private investment;
- George Chadwick's concept: Identification of problems → Draft of objectives → Forecast of objectives → Evaluation of forecasts → Evaluation of options → Evaluation of implementation;
- Alan Wilson's concept: Definition of system models → Draft of problems → Identification of planning techniques → Draft of planning

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<sup>10</sup> It is possible to agree with the interpretation: "As planning actors, we have no right to stand apart from our society. Novelists and artists could be free to imagine their utopian worlds or to use their artistic tolls to operate on their topics. Fundamental scientists could ignore political and social contexts when manipulating exact values of their fields. Since the planning is basically a social process, we need to come again and again to identify our role and to define clearly our products in context of a society complex, changing and vague ..."

projects → Evaluation of project → Identification of objectives → Actions of implementation.

Therefore the definition of planning procedures must be based on actual analysis and arguments. This is the problem treatment concept which is background for identification of the above mentioned planning procedures.

## **2. Proposal for procedure of science and technology national development planning**

### ***2.1. Concept of procedure for S&T development planning***

First of all it is necessary to have clear concepts of S&T development planning. They are positioned on the following aspects, namely S&T development planning is:

- Arrangement of works in a certain unified framework. The works are to be completed to unify the planning contents and the planning methods;
- Arrangement of works in a reasonable order to provide the quality and the effectiveness of planning;
- Organization of planning works is based on well defined principles.

The planning procedures are found in a sequence of interlinked activities: Problems to be planned → Planning methods → Planning activities → Planning procedures. In this sequence, the planning procedures get impacted from preceding activities and, at the same time, complete them and then make them closer to the targets of actual S&T plans.

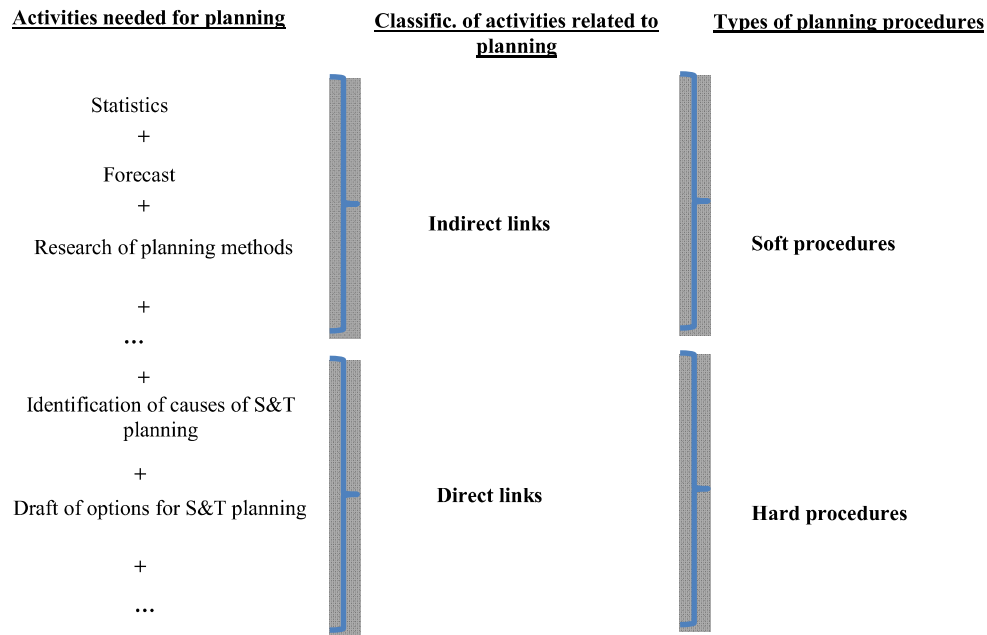
The role of the procedures of S&T planning is seen through the fact that, even in case of just identification of problems to be planned and just selection of planning methods, the procedures of S&T planning could not produce good results without having proper planning procedures. Similarly to other organizational processes, different planning processes could lead to largely different final products.

As the question “What to do?” is put to the planning works and the question “By which means” is put to the planning methods, the question “How to do” is put to the planning procedures. The latter would give answer to the questions *how* to formulate the problems and *which tools/methods* to use for settlement.

### ***2.2. Hard procedures and soft procedures in S&T development planning***

There exist a lot of planning-related activities. They have causal independences and the final results of planning depend on their interlinked activities. They may be classified as direct and indirect links. Soft

(planning) procedures are related to indirect activities and the hard (planning) procedures are related to direct activities (Fig. 2).



**Figure 2:** Classification of hard and soft procedures in S&T planning

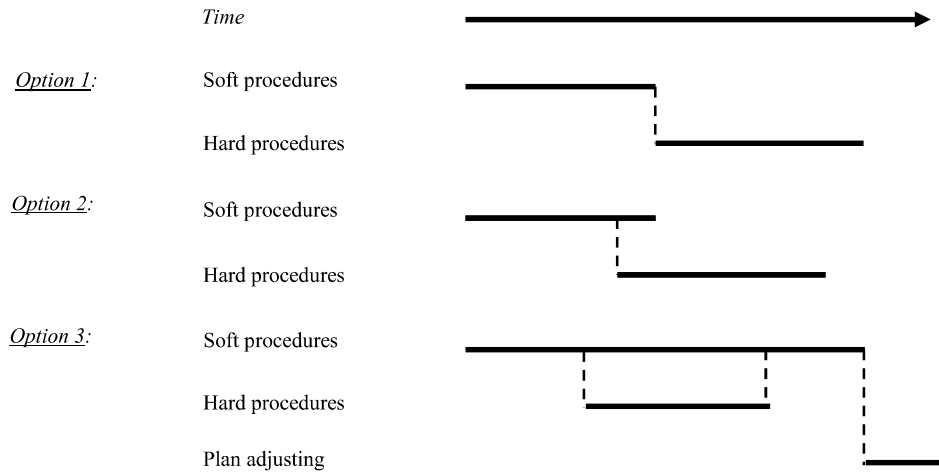
In addition to hard planning it is required to turn attention to soft planning since the latter exists and create considerable differences in planning.

There are three options in relation to the balances between the hard procedures and soft procedures, namely:

*Option 1:* Completing first soft procedures before starting hard procedures.

*Option 2:* Conducting hard procedures even when soft procedures are not completed. Soft and hard procedures are sandwiched.

*Option 3:* Soft procedures prepare pre-conditions for hard procedures and plan adjusting works.



**Figure 3:** Options to combine soft and hard planning procedures

Three options can be applied in our country.

In case of good preparation of indirect related activities it is possible to start hard procedures on basis of completed soft procedures.

In case of lacking some pre-conditions from soft procedures and impossible delay of kick-off of S&T development planning, it is possible to start hard procedures while continuing soft procedures to cover the lacked components.

In case of extending and multiple activities it is possible to start early hard procedures and then take attention for plan adjusting works. Here soft procedures set pre-conditions for plan adjusting works.

It is necessary to have careful assessment of activities indirectly related to S&T development plans to get right selections for every component as well as actual planning scope. In Vietnam, in particular, activities related indirectly to S&T planning remain limited and required to be added [8, p.14; 9, p.12]<sup>11</sup>.

### **2.3. Hard procedures in S&T development planning**

Hard procedures of S&T development planning contain the following 5 steps:

<sup>11</sup> There were assessments and proposals such as: “ Industrial statistic works are still conducted by the old way left from the time of central controlled economic management without in-time changes. The set of planning tools including technical guidelines and GIS, SWOT, Cluster statistical analysis, target tree, partner analysis and etc. were not improved, trained and used as other countries do. Basic research works of planning did not get attention. Difficult problems such as development forecast or analysis of investment efficiency were not settled adequately”; “System of evaluation indicators for planning quality needed”; and etc.

*Step 1: Definition of causes of S&T planning for*

- Convincing S&T management agencies and society about the necessity of S&T plans;
- Causes of existence of S&T planning works have to include:
  - + Urgent matters of S&T planning and S&T development and socio-economic development;
  - + Complexity of S&T planning;
  - + Opportunity matters of S&T plans to be issued;
  - + Solvability of problems by S&T planning;
  - + Results and effectiveness of S&T planning works in comparison to management requirements.

*Step 2: Draft versions for S&T planning*

- Set-up of options of S&T planning to be submitted to the State agencies for eventual use for S&T management;
- Notification of strong-weak points, opportunities-challenges of every draft version.

*Step 3: Selection of the best planning options*

- Identification of the optimal S&T planning option among draft versions;
- Comparison to indicators of a good S&T planning option for selection of these options. The check should be done also for scientific basic concepts used for planning versions;
- This step should not be contained only by setting-up stages but extended to plan implementing actors. The purpose is to provide the objectivity and the consensus of relevant stakeholders such as branches, local government agencies, scientists and etc.

*Step 4: Completion of the selected planning options*

- The option selected from draft versions can meet only basic requirements of a S&T plan. It needs to be amended and improved on basis of requirements of S&T management agencies and those actors impacted by the S&T plan;
- Consultation is needed from relevant individuals and organizations for completion of the S&T planning option.

*Step 5. Decision for issuing the plans*

- It is a step to legalize a plan after completion of the above steps;

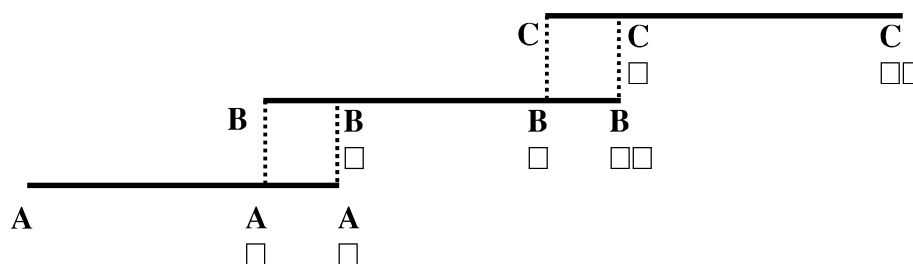
- When the decision of a S&T plan is issued it gets the public legal power then attracts participation of State agencies of various levels, scientist communities and large population.

**Table 1.** Summary of steps of S&T development planning procedures in Vietnam

Steps	Objects	Contents	Activities	Results
1. Definition of reasons	Actual reality. Unreadiness of management agencies and impacted actors of the S&T plan	Notification of necessity and solvability by the S&T planning.	Scientific research activities.	Approved to conduct the S&T planning.
2. Draft of S&T planning versions	Data and materials.	Analysis of different S&T planning versions.	Scientific research activities.	Set-up of proposed S&T plan versions
3. Selection of the best options	Existence of various S&T planning models for selection	Selection is based on indicators of a good S&T plan, and checks/assessments of basic scientific concepts used for setting-up S&T planning versions. Extension of participants to create the consensus between stakeholders during selection process.	Activities to create the agreement and consensus. Activities to express the wills of management authority levels.	Identification of the optimal S&T planning model among the draft versions.
4. Completion of the selected option.	The selected option needs to be amended and completed on basis of requirements from various stakeholders	Consultations from relevant individuals and organizations for improvement of the selected version.	Research activities. Activities to create the agreement and consensus.	Improved S&T plan option.
5. Decision for issuing S&T plans	The plan gathers a full basis for decision of feasibility and effectiveness of the S&T plan.	Legalization of the S&T plans.	Activities to express the wills of management authority levels.	The plan gets the public institutional/legal power.

The above presented procedures are presented from the most global vision. These procedures can be concretized and sub-devised. Even the implementation of planning methods follows certain procedures.

Remarkably, different steps can be overlapped. As shown by Fig. 3, Step 1 (A-A'') and Step 2 (B-B'') have overlapping segments of A'-A'' and B-B'; Step 2 (B-B'') and Step 3 (C-C'') have overlapping segments of B''-B''' and C-C'.



**Figure 4:** Steps with overlapping segments

#### REFERENCE

1. David Golschalk. (1974) *Planning in America: Learning from Turbulence*. Editor: "American Institute of Planners", Washington D.C.
2. Le Huu Nghia, Pham Duy Hai. (1998). *Scientific mindset during science-technology revolution period*. Hanoi: National Political Publishing House.
3. Ministry of Science and Technology, National Center of S&T Information. (2002) *World's Science and Technologies: Experiences and strategic orientations*.
4. Nguyen Tien Dung. (2007) *Lectures of Development Planning*. Hanoi: National Economics University.
5. Truong Quang Thao. (2007) *Counter-arguments around planning concepts/The presentation for "Urban and Rural Planning Forum", Session "Construction planning in context of market economy and international integration trends in Vietnam"*. Hai Phong, November 2007.
6. Ngo Doan Vinh. (2011) *Discussion on innovation of mindset and actions toward development planning in Vietnam*. Economy and Forecast Review, No. 10.
7. Tran Hong Quang. (2011) *Territorial development planning works: Actual situation and some proposals for innovation*. Economy and Forecast Review, No. 11.
8. Duong Trong Hien. (2011) *Actual situation of planning works and some solutions for future time*. Economy and Forecast Review, No. 15.
9. Hoang Sy Dong. (2011) *Some problems toward industrial zone planning works in Vietnam*. Economy and Forecast Review, No. 18.



10. Institute for Development Strategies, Ministry of Planning and Investment. (2011). *Scientific background for regional development in context of international integration in Vietnam*. Hanoi: The gioi Publishers.
11. Ministry of Planning and Investment. (2012). *Report on situation assessment of planning works and summary remarks on legal enforcement of planning*.