

METHOD FOR DETERMINING THE LIST OF PROVINCIAL SCIENCE AND TECHNOLOGY TASKS - LESSONS FROM NINH THUAN PROVINCE

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Summary:

Ninh Thuan is a province located in the Southern Central Coastal region, with a favorable geographical location and many advantages for marine economic development. However, up to now, the socio-economic development process has not been commensurate with its inherent potential. The Resolution of the 14th Provincial Party Congress has set the goal that by 2025, the province will reach a well-developed level within the region and across the country. To achieve that goal, developing science and technology is one of the important solutions, among which applying new methods to determine the list of science and technology tasks to support socio-economic development and create a solid foundation for implementing long-term scientific and technological development in phases to proactively determine and utilize ideas and resources of the province and central government and socialize the implementation is an extremely necessary issue. Based on the previous period's research, the author proposes some policy suggestions for determining the list of S&T tasks of Ninh Thuan province in the period 2022-2025.

Keywords: Innovation; S&T tasks; Ninh Thuan Province.

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1. Introduction

In the period from 2016 to 2022, the implementation of science and technology tasks in Ninh Thuan province achieved many positive results. Within province, 50 science and technology tasks have been implemented (10 national-level tasks, and 40 provincial-level tasks). These S&T tasks mainly focus on transferring and applying advanced technology to production processes and daily life to develop commodity products, specific products associated with processing, value chains, and brand building. S&T tasks during this period have had significant impacts on production capacity, improving product quality, and economic efficiency for many

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organizations, businesses, and manufacturing households,... across the province². However, some science and technology tasks have not achieved the required results, many implementation tasks still lack effective application; Some tasks are only effective on a small scale and have not been widely adopted; lack of leading scientists participating in research; and Investment by enterprises in technological innovation research remains low. Faced with the above situation, innovating the method of determining the list of science and technology tasks through the project **“Research and propose a collection of science and technology tasks for the period 2022-2025 to serve the implementation of socio-economic development orientations of Ninh Thuan province”** is prioritized for implementation with the goal: Research and build a theoretical and practical basis to identify fields, products, difficulties, shortcomings, and limitations... focus on prioritizing impact through science and technology tasks to promote socio-economic development of the Province.

2. Some basic terms

2.1. Method to identify prioritized areas, key products, and specific products that need to be focused on for development by using science and technology tasks

The method of identifying key products is carried out by applying a system of qualitative and quantitative criteria. The group of quantitative criteria selected is the proportion of the product; Product localization coefficient; Product growth rate; Product superiority coefficient; and Coefficient of comparative advantage;... The group of qualitative criteria includes: Market size; Supporting industry or service; Degree of spinover to other production fields; Safe and environmentally friendly; and Preferential policies of the State. Each province can then build a scoring scale and determine the maximum benchmark score for each criterion and thereby rank the importance of products (*Le Tat Khuong and others, 2017*).

In 2018, the Ministry of Agriculture and Rural Development issued a document guiding how to calculate and determine the selection of national key products in the agricultural sector based on 4 groups of criteria: economic, social, environmental, and prioritized development products. In practice, some provinces have used this method such as Ben Tre, Tien Giang, An Giang, Vinh Long,... to identify and list the key agricultural products.

To be able to select the fields and products (key, specific) prioritized for the development of a province/city, it is necessary to develop criteria as a basis for the selection. These criteria must first be based on major local policies, because policies to develop fields and products are always closely linked to socio-economic development, to industries and fields, and at the same time, to important driving forces that realize local development goals. This is the most important criterion in

² Report evaluating the results of 5 years of implementing Plan No. 46-KH/TU of the Provincial Party Committee implementing Resolution No. 05-NQ/TW of the 12th Party Central Committee on several major guidelines and policies aimed at continuing to innovate the growth model, improve growth quality, labor productivity, and competitiveness of the economy.

selecting fields and products that need to be prioritized for development and implemented through science and technology tasks.

2.2. Method for determining the list of S&T tasks

In Articles 25 to 32, Chapter IV - Law on Science and Technology 2013, there are detailed regulations on tasks-ordering proposals; approving and signing contracts; tasks-delivery method; selecting the organization and individual that are in charge of the science and technology tasks implementation, etc. To be more specific, the Ministry of Science and Technology has issued Circular No. 06/2023/TT-BKHCN to guide the process and procedures for identifying national and state budget funded science and technology tasks. To identify their annual list of S&T tasks, provinces/cities nationwide often manipulate the above Circular of the Ministry of Science and Technology. The commonly manipulated method is to use experts, organize multi-round consultation workshops/conferences, and through advisory committees to identify lists of S&T tasks. These procedures have been formalized and carried out according to the standardized regulations of state management agencies, ensuring the determination of tasks that meet the requirements of the actual socio-economic development of each province.

In the current method of determining the list of S&T tasks in Ninh Thuan province, there are many similarities, but also many differences, compared to the way other provinces are implementing it. Instead of announcing annual tasks-ordering, Ninh Thuan determines priority tasks from the Party's guidelines and policies, and/or to serve local practical needs.

2.3. Experience of some provinces in determining the list of S&T tasks

In the previous period, several provinces implemented a Strategy/Planning/Orientation for Science and Technology Development and were approved by the People's Committees of the provinces/cities, including a group of prioritized topics/projects for implementation every 5 years, for example Can Tho, Thua Thien Hue, Gia Lai, Lai Chau,... However, the inclusion of the list of topics/projects is mainly directional, and very few of the tasks set out in the strategy/planning are used to order science and technology individuals, and organizations. The reason is that the tasks are not new and lack clear goals, and content, and products... Another reason is that, every year there are more urgent tasks that appear and directly serve local industries. Therefore, every year provinces/cities still deploy notices inviting tasks-ordering proposals to identify new S&T tasks based on the needs of each locality for individuals or S&T organizations,...

In the period 2020-2022, some provinces such as Bac Giang, Lang Son, Quang Ninh,... have deployed the development of Science and Technology Programs at district and equivalent levels with full names of tasks, goals, content, and products to be achieved. The science and technology program at the district/town level is reviewed and approved by the District People's Council through a Resolution to provide a basis for state management agencies to implement. Each S&T task is

phased in each year, and funding is allocated for implementation. Particularly for Bac Giang province, the Department of Science and Technology also implemented the development of a research and technology development plan according to a 5-year roadmap. Accordingly, the Province has built a system of provincial-level S&T tasks for the 5 years with clear divisions for each year, with goals, content, and funding needs. This plan has been implemented since 2021, the 2021 phased tasks are organized to select the implementation units.

This gave a lesson for Ninh Thuan province to learn and make a breakthrough, be more proactive pace in deploying to identify a list of science and technology tasks, be more proactive in attracting funding resources, and other resources, and have the essential demand from industrial sectors and localities,... in the Province to deal with by science and technology. Besides, it also poses challenges in terms of changing needs of industries, localities, etc. in socio-economic development due to the rapid impact of science and technology.

3. Method for building a list of provincial-level science and technology tasks of Ninh Thuan province

3.1. Identifying prioritized fields and products (key, specific) to form a list of science and technology tasks

Currently, provinces/cities determine the list of S&T tasks based on priority focuses and strengths in industries and fields following the actual development and resources of the locality. For Ninh Thuan, this has many similarities but also differences and changes compared to national programs as well as other provinces/cities. Instead of choosing prioritized fields based on actual development needs, Ninh Thuan province diversifies options based on building a system of criteria to determine prioritized fields and products (key, specific) to be developed by science and technology tasks along the value chain. Thereby, criteria are determined for each field and product. Specifically:

Table 1. Criteria and prioritized fields and products being supported by S&T tasks

| Criteria | Prioritized fields and products |
|---|---|
| Prioritized fields | |
| <p>1. From an economic point of view</p> <ul style="list-style-type: none"> - First, has development potential, consistent with the priority orientation and needs of the industries (priority criteria). - Second, the State's investment interest in science and technology resources and development. - Third, the level of investment interest of businesses in technology development. <p>2. From societal points of view About</p> | <p>1. Economic field</p> <ul style="list-style-type: none"> - Tourism: Cultural tourism, community tourism. - Industry: Processing industry - manufacturing and preserving agricultural products; Logistics. - Agriculture: High technology associated with seed development; Biotechnology in pest control. - Environment and climate change: adapting to climate change, protecting, and using water resources. <p>2. Social field</p> <ul style="list-style-type: none"> - Culture: Preserve and promote cultural values of ethnic minorities, especially Cham culture. |

| Criteria | Prioritized fields and products |
|--|--|
| <ul style="list-style-type: none"> - First, the State rarely pays attention to investing in science and technology development (investment in research and development). - Second, the research and implementation results have implications for other priority areas. | <ul style="list-style-type: none"> - Education: Developing high-quality human resources. - Health, community health care: Pharmaceutical materials, preventive medicine. - S&T: Technology application and transfer; Support businesses to improve productivity and product quality; Intellectual Property; Innovative startup ecosystem and science and technology market. |
| Prioritized products | |
| <p><i>First</i>, the extent to which businesses are interested in investing in science and technology development and the production value chain.</p> <p><i>Second</i>, the level of state investment in science and technology.</p> <p><i>Third</i>, the product has export potential.</p> <p><i>Fourth</i>, the level of spillover spread (<i>good results, high applicability, replication, and spread to other priority products</i>).</p> | <p>Grapes, apples, garlic, asparagus, aloe vera, sheep, goats.</p> |

Source: Results of investigation and assessment by the research team, 2023

3.2. Process for determining a list of S&T tasks, prioritized for development by fields and products (key, specific)

Previously, the process of determining the list of 5-year and annual S&T tasks of Ninh Thuan was carried out through the following steps: Posting a selection notice with suggestions of prioritized areas for implementation in the socio-economic fields of the Province → The units, based on the goals to be achieved in the fields set by the Province and their strengths, start to write the proposal's suggestion The Province synthesizes and organizes the Provincial Science and Technology Council meetings for proposal suggestions to be approved by evaluating the appropriateness of the suggestions in accordance with chosen criteria → Determine the group of tasks, then determine the form of the task selection or in the form of direct assignment depending on the urgency and needs of the province, industry, and field → Organize task-implementing-units selection and performing the task implementation. This activity is deployed according to the annual plan from year to year.

In recent years, the determination of the list of S&T tasks has been carried out in the form of task ordering from the grassroots. In the first form, local departments and branches that need to solve outstanding problems, difficulties, and obstacles with science and technology solutions can coordinate with science and technology organizations (local/central) that are capable of solving these problems to formulate an order proposal. Or, in the second form, local departments and branches that need to resolve problems can send their issues, orders that need to be resolved by S&T solutions to the Department of Science and Technology. Then, the Department of Science and Technology coordinates with the Provincial Council of Science and Technology to organize the task proposal to approve the project's appropriate content

and post the science and technology task information to select the units which are capable of performing the tasks in the form of public selection.

In addition, the Department of Science and Technology directly consults and exchanges opinions with agencies and departments to identify and confirm the shortcomings, limitations, and needs for implementation in the coming period. From there, it meets and discusses with central/local science and technology organizations to identify medium-term (3-5 years) and long-term (10 years) key tasks. At the same time, there is an opportunity to discuss the remaining issues of research, application, and transfer of science and technology in key and specific fields and products of the Province in the coming period. This helps the parties find common ground and identify the province's key issues regarding science and technology in the coming time. Accordingly, after discussing and meeting, science and technology organizations will identify science and technology tasks (including names, goals, results to be achieved, and estimated costs) so that the Department of Science and Technology can synthesize and determine the research directions, and prioritized tasks based on scientific logics and practice (needs of departments and branches).

In addition, many times, urgent problems arise that need to be solved with science and technology tasks. The Department of Science and Technology of Ninh Thuan province handles them in two directions: Deploy the selection of science and technology tasks in a public form (if the Department's scientific and technological resources are still available for implementation); Second, the Department of Science and Technology coordinates with branches to propose competent authorities to implement science and technology tasks by mobilizing external resources (enterprises, credit institutions,...) to support urgent, and just arisen scientific and technological research activities.

3.3. Determining policies and allocating resources to carry out science and technology tasks

Based on the socio-economic development orientation, the 14th Provincial Party Congress determined that S&T and innovation are the main driving forces in improving productivity and quality of products and goods of the Province in the coming time. In terms of policy, the Department of Science and Technology advises the Provincial Party Standing Committee to issue Resolution No. 14/NQ-TU on “Science and Technology development, and promoting innovation in Ninh Thuan province until 2025” with 08 Science and Technology programs were shaped and the Provincial People's Council issued Resolution No. 36/NQ-HDND on “Science and Technology and promotion of innovation in Ninh Thuan province until 2025” to allocate enough financial resources to implement the S&T program. Accordingly, the Resolution has determined to allocate enough resources for the 08 S&T Programs in the Resolution to be implemented effectively with a minimum norm of 0.5% of the Province's regular budget expenditure, equivalent to 113.33 billion VND and a maximum level of 1% of the provincial regular budget expenditure, equivalent to 184.33 billion VND. Thereby, it can be seen that identifying and allocating resources in advance can help the Province authority be proactive in implementing urgent tasks and solving necessary local socio-economic problems.

3.4. Identifying a list of long-term S&T tasks, serving the province's socio-economic development until 2025

3.4.1. Legal basis for determining a list of long-term S&T tasks

To determine the list of S&T tasks suitable to the potential and resources of the Province by 2025, Ninh Thuan Province has closely followed the processes and procedures according to Circular No. 06/2023/TT-BKHCHN on the implementation process for identifying and approving science and technology tasks and applying them to the context of Ninh Thuan province to determine a number of issues of concern that can serve as a basis for identifying science and technology tasks. In addition, the Department of Science and Technology is still based on Decision No. 105/2014/QĐ-UBND dated December 29, 2014, of the Provincial People's Committee on managing Science and Technology tasks in Ninh Thuan Province.

In 2022, the Provincial People's Committee established the Project: “Building a List of Science and Technology Tasks until 2025”, thereby “taking the background from the local circumstances to determine specific science and technology tasks”. In other words, to identify science and technology tasks, the methodology can be summarized in the following steps:

Step 1: First of all, the Project organized an investigation and survey to collect information, and identify fields and products that need to be prioritized for development by using science and technology and the needs of industries and localities in Ninh. Thuan;

Step 2: Consult, connect, and convey the development needs of local fields and products to scientists and S&T organizations inside and outside the Province to determine S&T task names and necessary contents, which should have been deployed to address the given goals, and products, as well as the funding needs for each S&T task;

Step 3: Based on consultation and opinion exchange with science and technology organizations to gather and complete science and technology tasks in each specific field, then conduct seminars with scientists and managers, with the Provincial Science and Technology Council, and Steering Committee for the Program on Application of Science and Technology, Promotion of Innovation in Ninh Thuan Province for the period 2022-2025.

3.4.2. List of S&T tasks until 2025

Table 2. List of S&T tasks and expected budget for tasks implementation

| No | Names of S&T tasks | Number of projects | Proposed budget (bil. VND) | | | |
|----|--|--------------------|----------------------------|----------------|--------------|--------------|
| | | | Total Budget | Central budget | Local Budget | Other Budget |
| 1 | Program to improve S&T and innovation capacity | 22 | 266,500 | 14,000 | 43,900 | 207,400 |
| 2 | High-tech agriculture | 45 | 138,497 | 33,430 | 45,576 | 59,392 |

| No | Names of S&T tasks | Number of projects | Proposed budget (bil. VND) | | | |
|---|---|--------------------|----------------------------|-------------------------------|----------------------------------|--------------------------------|
| | | | Total Budget | Central budget | Local Budget | Other Budget |
| 3 | Industry, tourism, and environmental protection | 43 | 118,660 | 40,700 | 46,269 | 31,790 |
| 4 | Social sciences and humanities | 14 | 45,689 | 15,200 | 24,489 | 5,500 |
| 5 | Productivity, quality | 13 | 50,860 | 0,000 | 27,860 | 24,000 |
| 6 | Intellectual Property | 22 | 62,610 | 10,200 | 30,310 | 21,100 |
| 7 | Innovative start-up | 13 | 24,460 | 0,000 | 18,960 | 5,500 |
| 8 | Developing the S&T market | 07 | 59,700 | 0,000 | 9,700 | 50,000 |
| | Total | 179 | 766,976 | 113,530 | 247,064 | 404,682 |
| Financial policy according to Resolution No. 36/NQ-HDND | | | | Max 163,8 (min 94,3) | Max 184,33 (min 113,33) | Max 431,5 (min 231,5) |

Source: Research results of the Project, 2023

The difference in determining the list of S&T tasks of Ninh Thuan province compared to most other provinces/cities is that the tasks are long-term, developing key/specific products along the value chain, and resources for implementation have been allocated right from the time the idea about S&T tasks was proposed; proactively solve key issues in socio-economic development and in accordance with the reality and needs of the Province. As preliminary results, the Project has selected 179/251 proposed S&T tasks that need to be implemented by 2025 associated with key/particular fields and products prioritized for implementation, accompanied by expected funding need to be arranged³.

3.4. Lessons learned in applying a new method of determining the list of S&T tasks for Ninh Thuan province

Based on analytical data on the current status of implementation, identify science and technology tasks, and programs according to Decision No. 105/2014/QĐ-UBND dated December 29, 2014 of the Provincial People's Committee on the management of Provincial Science and Technology tasks and applying to the context of Ninh Thuan province, it is possible to identify several issues of concern, as a basis for determining the S&T tasks of Ninh Thuan province soon, specifically as follows:

First, building science and technology tasks needs to be closely linked to long-term science and technology development strategies, and plans (Resolution of the Provincial Party Congress; Decision No. 458/QĐ-UBND dated December 30, 2020 of the Provincial People's Committee on the Socio-Economic Development Plan of Ninh Thuan province and plans, strategies and programs of sectors and fields);

³ The number of tasks and resources continues to be reviewed before being submitted to the People's Council and Provincial People's Committee for promulgation.

Second, build science and technology tasks focusing on developing key and specific products that the province will focus on investing in the coming period. At the same time, identify science and technology tasks along the value chain to achieve optimal efficiency. To achieve this goal, the Ninh Thuan Department of Science and Technology needs to develop a new approach of directly consulting and exchanging with agencies, departments, etc. in the Province to identify shortcomings, limitations, challenges and needs to be implemented in the coming period. Since then, meetings and discussions with science and technology organizations have been launched to develop key tasks according to the medium-term plan (3-5 years) and 10-year vision. Accordingly, the consultation will help the Department of Science and Technology understand the difficulties, problems, suggestions, and exchanges of organizations and individuals operating in the field of Science and Technology. This helps identify key issues and research directions and priority tasks based on scientific logic and practical reality (domestic and foreign experience, and practical needs of departments, and sectors) of the Province on Science and Technology in the coming time.

Third, attach importance to building science and technology programs to formulate the science and technology tasks in a systematic chain. At the same time, it helps to take advantage of large funding sources from the program approach. Besides, research objects are also more diverse and richer;

Fourth, consider evaluating the effectiveness of research conducted by organizations/individuals to improve management efficiency, increase the responsibility of organizations/individuals and improve the effectiveness of research (bound with Decision No. 105/2014/QĐ-UBND).

4. Conclusion

Building a list of provincial-level S&T tasks not only defines the quantity, genre, etc. in general, but also requires selecting tasks that target key issues, and go ahead and pave the way to serve socio-economic development in the long term period. The solutions in assembling the list of Ninh Thuan province have shown significant differences between the processes of assembling the list of S&T tasks in other provinces. Success in innovation and development of science and technology depends on creating a position and force. Rightly choosing the key issues that need to be researched and urgently resolved in socio-economic development will create many advantages while resources spending for that remain unchanged. These are meaningful things for us to escape stagnation and have a strong change in the development of science, technology, and innovation./.

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