

USING VIETNAM'S CURRENT CONTINGENT OF SCIENTIFIC AND TECHNOLOGICAL INTELLECTUALS - REALITY AND SOLUTIONS

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Abstract -As a province in the Mekong Delta, Vinh Long located in the central location of the delta in the Lower Mekong River Basin. With many name changes, from May 05, 1992, the name Vinh Long has been used up to now. Vinh Long is known as the “Southern land of the talented”, the “sacred land of the talented”. After the liberation of the South and reunification of the country, Vinh Long intellectuals, including scientific and technological intellectuals, were continued to be respected by the revolutionary government, and thrived, making great contributions to the development of the province. In 2022, Vinh Long's population was 1,029,015 people, and labor force was 612,369 people, accounting for 59.5% of the population, of which scientific and technological intellectuals accounted for 5.42% (33,217 people). Number of scientific and technological intellectuals awarded bachelor, master to PhD degrees all increased. In addition, there is not much difference between male and female intellectuals in Vinh Long. Intellectuals aged from 30 years old to under 40 years old accounted for 38.22%, and intellectuals aged from 40 years old to under 50 years old accounted for 28.52%. In addition to the achieved results, Vinh Long's scientific and technological intellectuals also have many limitations such as: the number of scientific projects is not much; the implementation progress is still slow; in addition, intellectuals with PhD degrees are concentrated in universities. From the above facts, it is necessary to have solutions to develop scientific and technological intellectuals in Vinh Long province in the current period to effectively serve the local economic and social development.

Keywords: Scientific and technological intellectuals; Vinh Long; solutions to develop scientific and technological intellectuals.

INTRODUCTION

Vinh Long is a province lying in the Mekong Delta between the Tien and Hau rivers. The North and the Northeast border the provinces namely Tien Giang and Ben Tre; the North West and the East border Dong Thap province; the Southeast borders Tra Vinh province; the Southwest borders the provinces namely Hau Giang, Soc Trang and Can Tho City. Vinh Long province has 8 administrative units, including 6 districts (Binh Tan, Long Ho, Mang Thit, Tam Binh, Tra On, Vung Liem), Binh Minh town and Vinh Long city with 109 communes, wards and townships (94 communes, 5 towns and 10 wards).

Regarding the history of formation, in 1732, Vinh Long land was established by Nguyen Phuc Chu, the seventh Nguyen lord of the Cochinchina government, with its first name as Chau Dinh Vien, belonging to Long Ho palace. In 1779, it was renamed to Hoang Tran palace. During the period from 1780 to 1805, it was renamed to Vinh Tran, and from 1806 to 1832, Vinh Tran was changed to Tran Vinh Thanh. From 1832 to 1950, the name Vinh Long was formed. From 1951 to 1954, Vinh Long was converted to Vinh Tra province. From 1954 to 1975, Vinh Long province was re-established for the second time. From 1976 to May 1992, the province was named Cuu Long. Finally, from May 05, 1992, the name Vinh Long has been used up to now. The nearly 300-year journey from the ancient Long Ho palace to modern Vinh Long is a heroic historical period with many glorious feats of many generations here. During such long history, Vinh Long is not only a land rich in revolutionary traditions, but also known as the “Southern land of the talented”, the “sacred land of the talented”. Right at the beginning of the establishment of Long Ho Palace (the predecessor of modern Vinh Long), characters such as: Nguyen Van Ton, Nguyen Van Thoai, Chau Thi Vinh Te, etc., with their talents and virtues, have made certain contributions to the formation and development

of Vinh Long province. During the resistance war against the French colonialists and the American imperialists, many children of Vinh Long land have left bold marks in the nation's history such as: Truong Ngoc Que, Pham Hung, Vo Van Kiet, especially Hero of Labor, Professor, Academician Tran Dai Nghia - a patriotic revolutionary, a scientific and technological intellectual.

“Intellectuals are intellectual employees who have high levels of education in certain fields, and the ability to think independently, create, spread and enrich knowledge, and produce spiritual and material products that are valuable to society”[1]. From the concept of intellectuals, it is possible to define scientific and technological intellectuals as follows: “Scientific and technological intellectuals are intellectual employees who have high education and deep expertise in the field of science and technology, creative activities, spread and application of scientific and technological knowledge into practice, creating products of high value, and contributing to the promotion of the country's development and society's progress”[2]. Thus, scientific and technological intellectuals are not all intellectuals, but only those who operate in the field of science and technology.

After the liberation of the South and reunification of the country, Vinh Long's scientific and technological intellectuals were continued to be respected by the revolutionary government; therefore, this force is constantly growing and growing.

Regarding the quantity, along with industrialization and modernization, Vinh Long's scientific and technological intellectuals have grown rapidly in number (compared to the province's population and labor force) (See: Table 1)

Table 1. Quantity of scientific and technological intellectuals in Population and Working age in Vinh Long province.

Year	Quantity				
	Population	Working age	%	S&T Intellectuals	%
2012	1,033,577	630,454	61.0	18,353	2.91
2022	1,029,015	612,369	59.5	33,217	5.42

(Cre: Vinh Long Statistical Office, 2022)

The statistics show that, in 10 years, the population and labor force of Vinh Long province have decreased; in which the population decreased by 4,562 people, and the labor force in working age in Vinh Long decreased by 18,085 people.

If the population and labor force of Vinh Long province tends to decrease, the number of scientific and technological intellectuals tends to increase very clearly. For example, in 2012, the number of scientific and technological intellectuals in Vinh Long was 18,353 people (accounting for 1.77% of the population and 2.91% of the labor force); by 2022, Vinh Long had 33,217 people (accounting for 3.22% of the population and 5.42% of the labor force). Thus, from 2012 to 2022, scientific and technological intellectuals in Vinh Long increased by 14,864 people, up 1.81 times; Vinh Long added about 1,400 people every year on average. This is considered one of the great and outstanding achievements in building and developing intellectuals of the Party Committee, government and people of Vinh Long province.

Regarding quality, along with the increase in quantity, the quality of scientific and technological intellectuals in Vinh Long province has also been gradually improved.

Regarding professional qualifications, in recent years, the scientific and technological intellectuals in Vinh Long province with high levels of training from bachelor, master to PhD degrees has increased (See: Table 2).

Table 2: Number of scientific and technological intellectuals in Vinh Long province by level in the period 2012 - 2022.

Level	Year 2012		2022	
	Quantity	%	Quantity	%
Bachelor	17,808	97.04	31,257	94.1

Master	527	2.87	1,784	5.37
PhD	18	0.09	176	0.53
Total	18,353	100	33,217	100

(Cre: Vinh Long Statistical Office, 2022)

In Vinh Long, out of the total number of scientific and technological intellectuals, those with bachelor degrees accounts for the largest number and accounts for over 90%. In 2012 scientific and technological intellectuals with bachelor degrees were 17,808 people (accounting for 97.04%); in 2022, there were 31,257 people (accounting for 94.1%); in 10 years, the number of intellectuals with bachelor degrees increased by 13,449 people. Next are intellectuals with master degrees. In 2012, intellectuals with master degrees were 527 people (accounting for 2.87%); in 2022, there were 1,784 people (accounting for 5.37%); the number of intellectuals with master degrees increased by 1,257 people. The number of intellectuals with PhD degrees in 10 years also increased by 158 people; in which, in 2012, there were 18 people (accounting for 0.09%); in 2022, it was 176 people (accounting for 0.53%).

It is worth noting that, among the intellectuals with master and PhD degrees, there are some who have been sent to train abroad such as: England, France, Taiwan, Australia, etc. Among 1,960 masters and PhDs, there were 73 masters and 4 PhDs were trained abroad with more than 20 majors, and these intellectuals are currently working at agencies and bodies in the province. Thereby, it contributes to improve the quality of human resources and the operational efficiency of the state administrative apparatus of the province.

However, the scientific and technological intellectuals with high professional qualifications (PhD) are concentrated in universities. In 2022, among 176 PhDs in Vinh Long, there were 118 PhDs (67%) from universities (Vinh Long University of Technology Education, Mien Tay Construction University, Mekong University). The number of scientific and technological intellectuals with PhD degrees in state administrative agencies, the party block, etc. is quite small with 58 people. High-level intellectuals concentrate mainly at universities, while in this environment, they perform their main task of teaching, so they will not have much time to participate in the implementation of other duties with the locality.

Regarding intellectuals working at administrative agencies and non-business applications in Vinh Long province, the quality is also constantly increasing. In 2012, out of 13,271 intellectuals with bachelor degrees or higher, there were 04 people with PhD degrees, 237 people with master degrees and 13,030 people with bachelor degrees (Vinh Long Department of Home Affairs, 2012); by 2022, out of 18,615 people with bachelor degrees or higher, there were 58 PhDs, 1,292 masters and 17,265 bachelors (Vinh Long Department of Home Affairs, 2022).

Regarding production and business, in 2017, Vinh Long province had 2,026 enterprises (state-owned enterprises, non-state enterprises, FDI enterprises) with a total of 64,949 employees. In which, there were 5,124 employees (accounting for 7.89%) with college degrees or higher (2,264 people in college, accounting for 3.48%; 2,860 people in university, accounting for 4.4%). By 2022, Vinh Long had 3,224 enterprises with a total of 76,359 employees. In which, there were 7,826 employees (accounting for 10.2%) with college degrees or higher (3,212 people in college, accounting for 4.2%; 4,614 people in university, accounting for 6.04%). It can be seen that, for 5 years from 2017 to 2022, the level of scientific and technological intellectuals in Vinh Long has also undergone a certain change in enterprises. Employees with college degrees increased from 3.48% in 2017 to 4.2% in 2022; employees with bachelor degrees increased from 4.4% to 6.04% (Socio-economic Census, 2022, p.23-24)

Thus, in the years of renovation, especially since the implementation of Resolution No. 27-NQ/TW and the Action Plan No. 21-CTr/TU, of the Provincial Party Committee on the implementation of Resolution 27-NQ/TW of the Seventh Conference of the Party Central Committee, Term X on “Developing a contingent of intellectuals in the period of accelerating industrialization and modernization of the country” so far, scientific and technological intellectuals of Vinh Long province have increased not only in quantity but also in quality. Specifically, the force of intellectuals with academic titles and degrees has increased over the years from 03 associate

professors in 2012 to 16 associate professors in 2022. On the basis of being trained to improve professional qualifications, the province's scientific and technological intellectuals are constantly equipped with necessary skills, knowledge and experience; thereby it helps this contingent increasingly improve the quality and efficiency in the process of participating in the performance of their work tasks. The above results are of great importance and significance to the process of socio-economic development and the cause of industrialization and modernization in Vinh Long.

Regarding the performance of scientific and technological tasks, 05 contingents of scientific and technological intellectuals in Vinh Long have carried out or coordinated to carry out 162 scientific projects, on average, the province could implement about 32 projects per year. The number of scientific projects carried out has increased and decreased year by year. Out of the total number of projects carried out, there were mainly provincial and grassroots-level projects, and it has not had ministerial or state-level projects; in which grassroots-level projects accounted for a larger number than that of provincial-level scientific projects (See: Table 3).

Table 3: Number of scientific projects at provincial and grassroots-levels in the period of 2017 - 2021.

Number of projects	Year					
	2017	2018	2019	2020	2021	Total
Provincial level	6	16	6	3	13	44
Grassroots level	30	29	26	15	18	118

(Cre: Department of Science and Technology of Vinh Long province, 2022).

In Vinh Long, from 2017 to 2021, the province has carried out 162 scientific research projects; in which provincial scientific projects were 44 (accounting for 27.16%), grassroots scientific projects were 118 (accounting for 72.84%). During this period, Vinh Long province has not yet carried out a ministerial or state-level project. In particular, out of 44 provincial-level projects, 12 were carried out by contingent of scientific and technological intellectuals of Vinh Long (accounting for 27.27%); The remaining 32 projects were carried out by Vinh Long province in collaboration with individuals and bodies outside the province (accounting for 72.73%) such as: Can Tho University, Nong Lam University, Ho Chi Minh City University of Technology, etc. This partly reflects the capacity of the scientific and technological intellectuals to organize and implement scientific research projects. In Vinh Long, the scientific research capacity of scientific and technological intellectuals, especially in the implementation of provincial scientific projects, is still limited.

Regarding the implementation of scientific research projects, in particular grassroots-level scientific projects, it is not satisfactory. Out of 118 projects, 76 projects (64.41%) were completed and accepted on time, while 42 projects (accounting for 35.59%) were delayed. The reason for this situation is because the qualifications of the scientists involved in the implementation of the projects have certain limitations such as: professional qualifications; scientific level; capacity and experience in organizing and implementing the project; sense of responsibility, etc. It can be seen that the slow implementation of projects, and late completion and acceptance is a relatively common situation in scientific research activities in Vinh Long province today. This situation once again shows the capacity and qualifications of the individuals who carry out the project as well as the quality of the scientific and technological intellectuals in Vinh Long province.

Regarding the structure, the gender structure of scientific and technological intellectuals in Vinh Long generally does not have a big difference between male and female. Out of a total of 33,217 scientific and technological intellectuals, there were 16,961 male intellectuals, accounting for 51.06%, and 16,256 female intellectuals, accounting for 48.94%. This reflects the efforts of female to overcome difficulties and barriers, and rise up constantly, especially in the context that the society still has the ideology of "value men above women". However, the percentage of male intellectuals with postgraduate qualifications (master, PhD) is always higher than that of female

intellectuals (See: Table 4).

Table 4: Level structure by gender of scientific and technological intellectuals in Vinh Long in 2022.

Level	Gender			
	Male	%	Female	%
Bachelor	15,845	50.69	15,412	49.31
Master	978	54.82	806	45.18
PhD	135	76.7	41	23.3

(Cre: Vinh Long Statistical Office, 2022)

As for bachelor degree, there is not much difference between male and female intellectuals in Vinh Long. If the percentage of male with bachelor degree is 50.69%, then the percentage of female with bachelor degree accounts for 49.31%. As for the master degree, out of a total of 1,784 scientific and technological intellectuals having master degrees, there are 978 males, accounting for 54.82%, and 806 females, accounting for 45.18%. Particularly for the PhD degree, out of a total of 176 scientific and technological intellectuals with PhD degrees, there are only 41 female intellectuals (accounting for 23.3%), and 135 male intellectuals (accounting for 76.7%). Especially for scientific and technological intellectuals having associate professorship, Vinh Long province has no female intellectuals. This reflects that the development and participation of female intellectuals still have certain barriers as well as limitations in their self-advocacy.

In fact, the difference in qualifications will lead to a disparity in social status, the higher the level difference, the larger the status difference. This proves that there are still significant gaps between male and female intellectuals in Vinh Long in the process of rising to occupy the peak of knowledge. This is also one of the problems posed to Vinh Long province on the strategy of developing human resources in the field of science and technology in a method that harmonizes males and females.


Regarding the age structure, the scientific and technological intellectuals in Vinh Long cover many different age groups, and most of them were formed after the liberation of the South and reunification of the country, especially along with the implementation of socio-economic development policy in Vinh Long; therefore, the majority of scientific and technological intellectuals here have a relatively young average age (See: Table 5).

Table 5: Age structure of scientific and technological intellectuals in Vinh Long in 2022.

Age	Under 30 years old	From 30 years old to under 40 years old	From 40 years old to under 50 years old	From 50 years old	Total
Quantity	4,031	12,697	9,472	7,017	33,217
Ratio (%)	12.13	38.22	28.52	21.13	100

(Cre: Vinh Long Statistical Office, 2022).

According to the statistical results, among 4 age groups of scientific and technological intellectuals in Vinh Long, intellectuals aged under 30 accounted for 12.13%; intellectuals aged from 30 to under 40 years old accounted for 38.22%; intellectuals aged from 40 to under 50 years old accounted for 28.52%, and intellectuals aged 50 and older accounted for 21.13%. Thus, intellectuals aged from 30 to under 40 accounted for the highest proportion, followed by the age group of 40 to under 50. This is the age at which intellectuals can best promote their abilities and dedication to socio-economic development. These ages also ensure both continuous development and inheritance. Meanwhile, this age structure shows that scientific and technological intellectuals in Vinh Long have reached maturity in terms of professional qualifications, political theory and experience, readiness to serve the cause of socio-economic development as well as the cause of promoting industrialization and modernization in Vinh Long province. This is a favorable factor for Vinh Long scientific and technological intellectuals to rise up in continuing to study to improve their qualifications and promote their creativity. Besides, with their youth, they are also more active at work, easily acquire new things, knowledge and achievements of science and technology in the world into the



process of operation and work. They are those who directly participate in the administration and management of society, propose and advise at all levels and sectors in the formulation of undertakings and policies in socio-economic development, and are also the main force in training human resources and talents for Vinh Long.

CONTENTS

The longevity of a nation lies in the talent of each individual in the national community. Deeply aware of the importance of intellectuals, in the 15th century, Than Nhan Trung highlighted the importance of talent with the immortal saying: “Talented and moral people are the core of the nation”. Document of 13th National Congress clearly stated: “Build a growing and growing contingent of intellectuals who have high quality and satisfy the requirements of the country’s development in the new situation. There is a mechanism to promote democracy, creative freedom and uphold ethics and responsibility in scientific research. Prioritize investment in the development of infrastructure, working environment, research and innovation of intellectuals. Appreciate and adequately treat Vietnamese talents, scientists and technicians with high professional qualifications at home and abroad, especially leading scientists in the industry, scientists capable of presiding over particularly important scientific and technological tasks. Truly respect and facilitate to improve the effectiveness of consulting and criticism activities of experts and intellectuals”[3]. During his lifetime, President Ho Chi Minh also paid special attention to the intellectuals, he also clearly pointed out the responsibility of the intellectuals in the national democratic revolution: “Your pens are also sharp weapons in the cause of serving the Fatherland and the people, protecting the regime and the people’s lives and interests, exposing, criticizing and eradicating the wrongs damaging the revolutionary cause, and the interests of the society and of the people, to which cultural and intellectual people must do as heroic soldiers in the resistance war to regain the right to unification and independence for the Fatherland”[4].

Continuing to concretize the tasks and solutions mentioned in Resolution No. 27-NQ/TW of 2008 of the Central Committee of the Party on building a contingent of intellectuals in the period of accelerating industrialization and modernization of the country. Gradually put the Documents of the Party Congress of Vinh Long province in the period (2020-2025) into life [5-6]. It is thought that some specific solutions need to be implemented as follows:

Firstly, Vinh Long province should honor typical intellectuals and scientists who have made positive contributions to development. Create a working environment that really promotes democracy and encourages intellectuals to be creative in research and production, and equity in academia, research, creativity, and application of science, especially social science. Develop a contingent of intellectuals requiring synchronous solutions in the development of industries related to the operating environment of intellectuals such as education and training; science and technology; culture and arts. In which, in addition to the democratic working environment, it needs to increase investment in funding, modern facilities and equipment for scientific and technological non-business units that well serve the needs of research, application, and transfer of scientific and technological knowledge for production and life; invest in modern equipment and machinery, practice laboratories, etc.

Secondly, Vinh Long province should focus on improving the capacity of enterprises in terms of acquiring and mastering new technologies, participating in advanced production chains, supply chains, value chains, especially small and medium enterprises. Mobilize all resources for the development of scientific and technological forces, especially from enterprises.

Thirdly, promote research in social sciences and humanities, political theory, applied research in science and technology, in order to have a good scientific basis for the cause of innovation, economic and social development in Vinh Long province. Strengthen the application and transfer of scientific and technological forces, especially high technologies for industrial and agricultural production, support innovation, creativity and application of scientific and technological forces in trial production projects; vigorously apply scientific and technological progress to serve production and life.



Fourthly, step up activities to measure the quality of intellectual property to ensure the interests of consumers and businesses. Develop action plans with specific standards for the application and development of science and technology innovation in activities at all levels and branches of the province. Effectively implement: “Intellectual property strategy to 2023” in Vinh Long province. Develop and improve the operational efficiency of the province's innovation system and startup ecosystem, connect startup ecosystems in the Mekong Delta.

Fifthly, implement measures to support the formation and development of innovative enterprises; promote research and application of high technology; approach the industrial revolution 4.0; and support the traceability of key products and goods of the province for export. Focus on developing and implementing projects and programs on science and technology development, supporting national innovative startups, improving productivity and quality of products and goods of enterprises in Vinh Long province.

Sixthly, develop a plan for cooperation in science and technology development with domestic provinces and cities for international cooperation in the field of scientific research, transfer of research results into production, assessment of the development level of enterprises, technology appraisal of investment projects, sharing of scientific and technological information, consulting and training activities on intellectual property, management system and productivity and quality tools.

Seventh, strengthen human resource training and invest in developing scientific and technological potentials. Promote and improve the efficiency of analysis and testing activities; analysis and testing services, consulting services, environmental impact assessment; consulting application of advanced quality management system; testing and calibration of measuring instruments, etc., intensifying research, applying and transferring technology, creating new products and technologies following market demand, serving the economic and social development of Vinh Long province.

CONCLUSION

Vinh Long is known as the “Southern land of the talented”, the “sacred land of the talented”. After the liberation of the South and reunification of the country, Vinh Long scientific and technological intellectuals were continued to be respected by the revolutionary government. Today, the contingent of scientific and technological intellectuals in Vinh Long province has increased in quantity and developed in quality. The age structure has been rejuvenated, there is no difference in gender, etc., and the contribution to scientific research activities through the implementation of scientific research projects at provincial and grassroots levels is increasing. The contingent of scientific and technological intellectuals has applied and transferred science and technology, especially high technology to support industrial and agricultural production, and support innovation for the development of the province. It can be seen as the role and position of intellectuals in the development of Vietnam in general and Vinh Long province in particular. In order to successfully implement the Resolution of the Party Congress of Vinh Long province in the period (2020-2025) into practice, it is necessary to synchronously implement solutions and need the consensus of the authorities as well as the people of Vinh Long province.

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