

Development of Geography in Vietnam : The Past, Present and Future

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In Vietnam, geographical knowledge has been applied in a long time. Three main stages can be identified by the viewpoint, method and the role of geography in the development of Vietnam through history.

This paper is based upon the analysis of academic papers, researches of Vietnamese geographers as well as foreign researchers. Furthermore, its information and data are from universities with faculty / department of geography ; Vietnam Geography Association, and other academic institutions.

With an intention to trace the development of geographical discipline in Vietnam, the objectives of this paper are : (1) to clarify the development of geographical discipline ; and (2) to give a future vision of Vietnamese geography as "An Integrated Geography" in the 21st century.

I Geography in the feudal Period – the Stage of Area Identification and Description

This stage covers a very long period. It started from the time of first government (Van Lang – Au Lac Government in the 7th Century B. C) to the latter half of the 18th century. This stage consists of 3 periods as follows : the period of area identification, the period of area description ; and the period of applying geography in ancient time.

(1) The period of area identification

Dong Son's culture in the Red River Delta followed three cultures : Phung Nguyen, Dong Dau and Go Mun (from the 2nd millennium to the 1st millennium BC). In this period, geographical knowledge was mainly area identification and there were only a few documents referring the uses of geographical knowledge in Vietnam.

(2) The period of recording and illustrating place names, historical geography, political geography of Vietnam by Chinese feudalism

This long period had lasted from the 2nd century, B. C (Trieu Dynasty) to the 15th century (Minh Dynasty). The records and illustrated documents of place names, historical geography and administrative geography were gathered and edited into a series of works not only by Chinese feudal courts (*Han thu* – bibliography of the Han Dynasty, *Tung thu* – bibliography of the Tung

Dynasty, *Duong thu* – bibliography of the Duong Dynasty, *Tong thu* – bibliography of the Tong Dynasty¹⁾, but also by Chinese mandarins that worked for Chinese feudal official system in Vietnam, or worked as Chinese King's envoys in independent feudal courts of Vietnam as well as some neighboring countries such as Cambodia, Laos, Chan Lap.

These documents, which were considered as rare and unique ancient bibliographies, were valuable with illustrations on place names, and included topics of culture, customs, historical geography, administrative geography, economic and social regions in Vietnam, inspite of their mistakes in compilation. These mistakes were, for example, many paragraphs were too summary, non – logical and patchy in nature, and some even contradicted with each other in meanings, and were difficult to comprehend.

The place name records and illustrations, administrative geography and historical geography of Chinese feudal court had been completed in the period of 13th Century to 15th Century, marked by a series of three books known as *An Nam Tuc Su*, *Minh Chi* and *An Nam Chi Nguyen*. *An Nam Tuc Su* was written by Tran Phu, who used to be an envoy of the Nguyen Dynasty, when he had been sent to Dai Viet Country. This book portrayed briefly the architecture, culture, and society of the Northern region from the border with China to the capital of Thang Long²⁾. Tran Phu held adverse attitude to the Tran Dynasty, so he was not interested in the geography of this place.

Vietnamese bibliographies has shortcomings, but can help explain the names of mountains, rivers, places, and boundaries of administration units, known as "Phu", "Chau", "Huyen"³⁾ – the position of citadel, as well as the characteristics of economy, society, culture, land use, and territory processes in expansion, of Dai Viet country from the early period of feudalism.

(3) The period of geographical research and development under Vietnam feudalism (15th–19th Century)

In this period, research and note recording existed concurrently, but they were completely independent with each other. They were : (1) carried out by the feudal court with the national historical office to preside over or in cooperation with the head mandarins of *Phu* (district), *Tra* (town), *Tinh* (province) ; (2) independent researches published by the people themselves, the majority of whom were laureates participated in the literary civil examination.

The works of the feudal mandarins and that of the scholars have more geographical value. The mandarins, or also known as "Doctors of Letters", with their primitive research tools, collected materials, went to field trips, looked up the ancient geographical reference materials and then wrote essays from accumulated works written in Chinese or in ancient Vietnamese scripts. The most valuable ones are *Du Dia Chi* – Geography of the Country by Nguyen Trai (1435–1439), *O Chau Can Luc* by Duong Van An (1555), *Phu Bien Tap Luc* by Le Quy Don (1776), *Nam Viet Chi* by Nguyen Bang Trung (18th Century), *Gia Dinh Thanh Thong Chi* by Trinh Hoai Duc⁴⁾ (1820–1822).

1) PHAN Huy Chu, *Lịch Triều Hiến Chương Loại Chí, Phần Dư Địa Chí*, Historical Publishing House, 1960 (Vietnamese).
2) Thang Long was the former name of Hanoi capital. This name is given to Hanoi since King Ly Thai To moved the capital from Hoa Lu (Ninh Binh Province) to Hanoi city. In Vietnamese, "Thang Long" means "Ascending Dragon".
3) "Phù", "Châu" or "Huyện" were district units in the ancient administrative system of Vietnam.
4) TRINH Hoai Duc, *Gia Định Thành Thông Chí*, Dong Nai Integrated Publishing House, 2006 (Vietnamese).

In fact, part of the above mentioned works are on geography and the rest are collection of poems, thoughts and essays of social, economic and cultural aspects. The authors had exerted their efforts to describe landforms, rivers and mountains, land and soil, flora and fauna of Dai Viet – the country in the feudal time. However, some descriptions were too simple, not related to the ancient geographical writings, and population data sources were not known. Moreover, analysis and comparison of geographical features were weak; only surface points were described, without any generalization.

The Vietnamese feudal courts compiled two kinds of geographical publications: (1) a series of regional maps and country map; (2) historical chronicles recording natural hazards, administrative units, and others. Nguyen Dynasty compiled a series of books that were praised as documents with great geographical value.

Map-making started in 1467 at national scale. All the maps and diagrams were not done with the same image projection, so they were correct only at locations of the represented objects. In July 1467, the King ordered the mandarins of 12 *Thua Tuyen*⁵⁾ to survey topography of mountains, rivers and to collect legends told about their territories. Then, they drew maps, took notes and sent to *Ho Bo*⁶⁾ for making a series of geographical maps over the country.⁷⁾ In 1490, this work was completed in national scale (from Lang Son to Binh Dinh Province) with the remarks as follows: "In summer, April 4th, 1490, the geographical maps of the country included maps of 12 *Thua tuyen*, 52 *Phu*, 178 *Huyen* (suburban district), 50 *Chau*, 20 *Huong*, 36 *Phuong*, 6851 *Xa* (commune), 322 *Thon* (villages) in a total of 637 pages, 40 books, 40 *Dong*, 30 *Nguon*, 30 *Truong*⁸⁾. Actually, these maps and diagrams had represented only suburban district or *Chau* regions at the smallest spatial scale. Smaller administrative units had not been shown in these maps, but only noted in the reference materials. This series of maps remaining till now is called *Thien Ha Ban Do* (Map for All People) or *Hong Duc Ban Do* (Maps of King Hong Duc's Era). The objects inside these maps were topography of mountains, rivers, coastal lines, seaports, islands, and settlement centers of *Phu*, *Huyen*, and *Chau*.

Maps in the Nguyen Dynasty had been drawn more meticulously, in which locations were extractors compared to the maps under the control of King Hong Duc. The Nguyen Dynasty had carried out map compilation of *Tran* (town), province and country scales in the period of 1805–1839. *Dai Nam Nhat Thong Toan Do*⁹⁾ was assessed as the most concrete map of Vietnam in the feudal period.

The applied field of geomantic geography (geomancy) in the final stage of geographic studies of Vietnam feudalism should be mentioned. The famous geomantic geographers were Ta Ao and Luu Ba On with their great works such as: "*Ta Ao Esoteric Geography – ballad tunnel*", "*Entire geography*". These studies based on *Yin* and *Yan*, "the five basic elements that make up the earth", and "the Eight-Trigram Theory" to determine location in relation to environment. For geomancy,

natural elements are divided into 5 types: *Long* (dragon), *Huyet* (dangerous spots in human body), *Sa* (sand), *Thuy* (water) and *Phuong Huong* (direction). Geomancy was very popular among the noble and wealthy class throughout the Vietnam feudalism.

II Development of Geography in French Domination Period (1859–1954)

The French began to invade Vietnam from Gia Dinh Region to the North in 1859 and almost colonized this part of the country. In 1884, Patenotre Agreement forced the Nguyen Dynasty to admit the domination of French in Vietnam. Hereafter, fundamental investigations on geography and geology were held by the French in order to know and to exploit the domestic natural resources.

The French conducted geographical studies with concrete, professional strategies by modern research tools, unlike the previous studies in Vietnam's feudal period. The investigations, field surveys and integrated analyses were conducted by geodesy machines, topographic maps in various scales, and with the aid of aerial photographs.

(1) Regional study

Regional study was the main work conducted at the beginning of the French Colonization from the end 19th century to the beginning of the 20th Century. The purpose was to meet the need to understand the territory of the colony (the South of Vietnam) and the protectorate areas – the Central and the North,¹⁰⁾ so as to serve the administration and other colonial exploiting plans.

Regional researches were written as monographs by regions: the South (La Cochin chine) and the North (Le Tonkin). These monographs were distributed among provincial-level administrators, and published in small number in the period of 1900–1915, under the control of *La Société des Études Indochinoise*.

These monographs were normally divided into four chapters:

- Chapter 1 – Natural Resources: A general introduction of natural conditions and regional administrative system including geographical locations, area, transportation systems, hydrological systems, climate, weather, and other specific natural characteristics.
- Chapter 2 – The Economy: An introduction of local crops (seasonal, perennial and industrial crops), livestock and poultry, wild plants and animals, fisheries, industrial production, handicrafts, trading, mining, and etc.
- Chapter 3 – Historic and Political Geography: The history of reclaimed land, territory expansion and changes in the administrative system and boundaries.
- Chapter 4 – Statistics: Statistics of administrative units, such as population, settlements, houses, and schools, etc.

In terms of the contents and the documents referred, the monographs written by the French were more geographical. Geographical components were put in a clearer and more logical order.

10) In the period of 1859–1945, Indo-China was divided into 5 regions, such as: Laos, Cambodia, Cochinchine, Annam and Tonkin.

5) *Thua Tuyen* was administrative unit in the time of the Later Le dynasty, equivalent to province unit at present.

6) *Ho Bo* was the name of the Ministry of Finance and Economic in feudal government in ancient time.

7) NGUYEN Van Khanh, *Cơ Cấu Kinh Tế - Xã Hội Việt Nam Thời Thuộc Địa (1858–1945)*, (*Socio-Economic Structure of Vietnam (1858–1945)*), Publishing House of Vietnam National University in Hanoi, 2000) (Vietnamese).

8) *op. cit.*, footnote 5).

9) Vietnamese Institute of History, *Quốc Sử Quán Triều Nguyễn*, 1963, (Vietnamese).

Geographical features were described, and generalized scientifically. However, some criticized that their contribution and limitations were not much different from that of the local geographical documents in the Feudal Period.

(2) Specialized geographical research

Specialized geographical research was highly encouraged by the great research institute in Indo-China called as "Paleogeographical Indo-China Institute" or "BEFEO" in French abbreviation. "BEFEO" mainly carried out comprehensive researches on special subjects such as history, archaeology, culture, ancient literature, architecture, geography, etc., in Indo-China.

Based on these researches, H. Maspéro summarized the eminent research entitled "Annam Colony in the Duong Dynasty" (BEFEO, 1910). The research studied local names, historical geography of Vietnam under the colonization of the Duong Dynasty by studying the ancient writings in China. H. Maspéro identified exactly some local names as well as the location of the ancient coast related to Than Phu Mouth and Dai An Mouth and etc. He also published the map of Annam colony, however, it was too vague because of the lack of information. To this, a French geographer remarked: "There were no indication of ancient local names for the area between Luoc River and the sea¹¹⁾".

The statistics of households and population quoted by H. Maspéro based on Chinese documents were in detail but suffered reliability because they indicated that the population decrease from the 1st century to the 8th century. He claimed that in the 1st Century under the Han Dynasty, the population of Vietnam was 92,440 households with 746,237 people. At the end of the 3rd century under the Ngo Dynasty, it decreased to 25,600 households; and at the beginning of the 18th century at 23,000 households with 85,000 people, and in the year of 1807 under the Duong Dynasty there were 28,000 households. Thus it is difficult to use these numbers as the reasons behind the population changes have not been revealed at all.

In addition to the research of place names and historical geography, there were some other books published such as "An Expeditionary of Ma Vien" by H. Maspéro, BEFEO 1918, and "Quang Binh Historical Geography under Government Annals" by L. Cacdere, BEFEO, 1902.

Parallel with these researches, archeological excavations and cave researches in Karst area in the North of Vietnam were conducted. To note, Karst cave researches were done by geologists and archeologists rather than geographers. While investigating, measuring and drawing geological maps for the Indo-China Geological Department, researchers including H. Mausuy, M. Colani, E. Saurin, J. Fromaget, carried out the researches, describing, measuring, drawing maps of hundreds of Karst caves and carried out archeological excavations in these caves in a larger area: Lang Son, Hoa Binh, Ha Tay, Ninh binh, Lai Chau, Son La, Thai Nguyen, Thanh Hoa and Nge An Province, etc..

Based on research practices and archeological excavations in 40 Karst caves from 1924-1926 in Bac Son (Lang Son) limestone, H. Mansuy and M. Colani identified a new stone-age culture - the

11) P. Gourou, *Người nông dân châu thổ Bắc Kỳ*, (Les Paysans du Delta Tonkinois), Youth Publishing House, 2003, p. 68 (Vietnamese).

Bac Son Stone Age Culture (Neolit) with discoveries a lot of stone artifacts, whittled and sharpened at one end.

From 1926 to 1930, M. Colani conducted research, measurement and drawing caves in the Limestone Mountains from Moc Chau, Ninh Binh, Hoa Binh to Thanh Hoa Province. She carried out archeological excavations in 54 caves. From the collected documents and objects, M. Colani identified the Hoa Binh Middle Stone Age Culture (Mesolin) which dated earlier than Bac Son Culture.

Documents describing these archeological caves with information of locations, forms, areas, altitude and other characters also included diagrams, level ground, vertical or horizontal sections of the cave mouths and cave-beds. These researches were then published in BEFEO's publications in 1926, and from 1930 to 1932.

(3) Applied Geographical Research

This research was encouraged at the end of the 19th Century when the French completed conquering the South of Vietnam. This research aimed at 4 main points:

- Choosing the right stretch of land for domestic industrial plants
- Building irrigation systems
- Identifying places for observatories to locate
- Choosing places for beach resorts on hill stations in the hot and humid climate

In order to stimulate the agricultural production in general and commercial-agricultural production in particular, the French increased the field areas of rice growing, tea plantations with the area of 1,000-4,000 hectare or more of each. In 1900, the area of all plantations in Vietnam was only 322,000 hectare but in 1930 this area increased to 1,025,600 hectare¹²⁾. On the other hand, the kinds of useful plants were studied and then transformed by the French, and commercial-agricultural production was applied. Some selected areas were suitable for growing new seeds with higher quality than for the local seeds. These new seeds included some kinds of rice from Siam, sugar canes from Dutch East Indies, British India, oranges from North Africa, Mediterranean, potato from French, some temperate vegetables such as cabbages, cauliflowers; especially the French also selected some areas to grow industrial plants for exporting such as rubber trees, coffee. The biggest success was to grow rubber trees in the South East on an area of 97,804 hectare, and coffee in Tay Nguyen with an area of 5,900 hectare in 1930.

The construction process of water control and irrigation system in the Northern and the Southern deltas was started by the French at the end of the 19th century. In the South, from 1880-1890, the French investigated and carried out dredging and extending the channels dug in the Nguyen Dynasty. From 1891, the project of digging channels by dredgers introduced by the French engineer Thevener was able to prevent the silt sedimentation on the channel beds. A lot of channels were completed in the period of 1906-1930: Cho Gao, Phung Hiep, Cai Lon, Ba Rin, and some big channels such as Rach Gia - Ha Tien (linking Tri Ton Channel with Giang Thanh Channel), Tri Ton Channel (linking Tri Ton Channel with Rach Gia - Ha Tien).

12) *op. cit.*, footnote 5).

In the Northern delta, the French also carried out researches and discussions on whether or not to continue to build dikes. As the projects of damming up the Duong River by building the Vinh Yen spillway for floods, and building Phung spillway for floods in the Day River were not successful, the French learnt from the experiences of Nguyen Kings, and started to construct dikes more permanently. M. Peytavin proposed 11 methods of controlling the water in the Northern delta, among these the outstanding ones are:

- Recovering the forests at river sources.
- Building dams at the sources of the rivers
- Building distributary water dams in the Central region like spillways or siphon dams
- Sharing the flow of water from the Da River to the Ma River
- Improving irrigation systems by utilizing the silts from the Red River (Hon River)

All the researches and discussions on dams and dikes in these periods were mentioned in the book *"The North Dike Systems"* by Y. Gauthier in 1933. In the period of 1902-1945, a lot of irrigation systems were built to improve the water control process in the Northern Delta. Among which, the most outstanding works were: Kep Irrigation System which directed the water from the Thuong River to irrigate a large area stretching from Bac Giang to Thai Nguyen Province, the Lieu Son System which brought water from the Cau River to fields in Bac Giang, Thai Nguyen and Vinh Phuc Provinces; building pumping stations and silt irrigation system in Son Tay; South-North Thai Binh system, An Duong-Kinh Thanh system (Hai Duong, Hai Phong Provinces), Ngo Dong, North Nam Dinh, East Nam Dinh, Bai Thuong (Thanh Hoa Province) system in the Central, Do Luong (Nghe An Province), Dong Cam (Ha Tinh Province).

In order to locate geographical change forecasting stations, the French surveyed to find out places for measuring tides and water levels in whole Vietnam. These are the Central Meteorological Station in Ha Noi, Phu Lieu Astrological and Meteorological Station in Hai Phong Province, Hon Dau Oceanographic Pot in Hai Phong Province. As a result, Vietnam started to have observatory records of basic geographical changes in the beginning of the 20th century.

A lot of successes achieved by applied the geographical research in the French occupation were made in selecting holiday resorts in the hot and humid climate condition in Vietnam.

Most of the resorts on the sea beaches and in the mountains that French discovered at the beginning of the 20th century, were based on effective application of climate and territory studies, some examples in the mountains are Sa Pa (Lao Cai Province), Tam Dao (Vinh Yen Province), Ba Vi (Ha Tay Province), and so on. In applied geographical research, A. Yersin contributed most, he himself discovered Da Lat City as a beautiful hill station in 1893.

(4) Researches in Human Geography

Human and rural geographic studies were an attractive and new approach in the 1930s and 1940s in Vietnam. French human geographic researchers focused on studying the relationships between geographical features and farmers, their families, agriculture, and ways of exploiting lands, agricultural systems, civilizations, and village culture, etc.

The two most outstanding researchers of this field were C. Robequain and P. Gourou. C. Robequain's book of *"Le Thanh Hoa"*¹³⁾, published by BEFEO in 1929, and *"Indo-China under*

French Colonists", published in Paris in 1935, described clearly human geographical features related to methods of agricultural production in the Northern delta. He gave two comments which were new, precise and valuable even in today's point of view.

(a) The method of agricultural production and lifestyle of the peasants in Tonkin delta depended and lived in harmony with nature. They did not make a living by conquering or controlling the nature.

(b) The peasant civilization of Vietnam was a vegetative civilization. People lived on cultivated products, and poultry and livestock were the additional food.

Gourou also spent a lot of time doing researches in Vietnam and in Indo-china. His most famous books were *"Les Paysans du Delta Tonkinois"*¹⁴⁾ in 1936 and *"Utilisation du Sol en Indochine Française"*¹⁵⁾ in 1940. The first book was highly praised and considered to be an excellent work of French geography on Vietnam. This book contains 666 pages in French, divided into three sections: physical environment, rural residents, and the peasants' ways of earning a living in Tonkin delta. It is well illustrated with diagrams, drawings, pictures and aerial photographs.¹⁶⁾ Even today, there has not been any study on Tonkin delta that could match its detail, precision, comprehensiveness and multi-dimension.

Gourou's book *"Peasants in Tonkin Delta,"* with three sections and 11 chapters, provides 65 diagrams, specialized geographical maps in different scale. Noma recently analyzed and evaluated his research methods such as thematic maps and inserted photographs in different scales.¹⁷⁾ This is a good and rare collection of diagrams and maps of Vietnam geography up to the year 1936.

From 1945 to 1954, the time when the French completely retreated from Vietnam, there was no significant research on geography done in both the South and North regions. Researchers either summed up or gave limited supplementary ideas to those written before, or just published small studies in some magazines in Saigon, Hanoi or Paris.

III Development of Modern Geography: A Critical View

The modern geographical ideas have been shaped by different periods of socio-economic development. Two periods can be found: (1) the period of 1954-1975 when the Northern Vietnam was restoring socio-economic development and suffering from the threat of American Army's bombing. The second period is from 1975 to now, after reunification and independence (*Thong nhat dat nuoc*), the whole Vietnam begun to rebuild the nation and develop its economy.

(1) Vietnamese geography in 1954-1975: establishing modern geography as a discipline

In general, the development of geography in Vietnam first began in geography education at

13) C. Robequain, *Le Thanh Hoa*, BEFEO, 1929, (French).

14) *op. cit.*, footnote 11).

15) P. Gourou, *Utilisation du Sol en Indochine Française*, Paris, 1940, (French).

16) Given in details as Reference Material No. 1 at the end of article.

17) Noma, H., Rural Space in Vietnam and Implication of "Rice Culture": Pierre Gourou's "Peasants in Tonkin Delta" Revisited, *Essays and Studies by the Members of the Faculty of Letters, Kansai University*, 2003, pp. 145-172. (J)

universities, and then at scientific research institutes. At the early years of this period there was only a few geographers who graduated in French schools, so only geography was established as a small section in the Faculty of History-geography of Hanoi Pedagogic University (1956-1962) and in the Hanoi University (1956-1965). In 1962 the first faculty of geography was established at Hanoi Pedagogic University. The founders of the Faculty, the geographers with excellent French capability, graduated from the French schools were Prof. Nguyen Duc Chinh, Prof. Hoang Thieu Son, Prof. Tran Dinh Gian, and Prof. Le Ba Thao, who were founders of Association of Vietnam Geographers.

The training in geography at Hanoi Pedagogic University and in geography-history at Hanoi University was only limited to a two- or three-year course. After graduation the students obtained their jobs mainly in high schools, some of them went to universities, academic institutions and other economic or politic sectors.

The Soviet geography school influenced geography education and research in the North Vietnam. Especially Hanoi University established the Faculty of Geography and Geology including the Department of Geomorphology-Physical Geography in 1966. Among the founders of the department was Prof. Dr. Nguyen Quang My (now President of Association of Vietnamese Geographers), geomorphologists graduated in Moscow National University, former Soviet Union. The undergraduate curriculum on geography at the Faculty of Geography-Geology in Hanoi National University, and the Faculty of Geography in Hanoi Pedagogic University were created according to the structure of Soviet geography school.

The geographical researches in North Vietnam actually began from early 1970s by using the methods of geographical study obtained from the former Soviet Union universities.

At the same time with universities, Geography Section in the Research Department of the National Committee for Science and Technology (recently known as Ministry of Science and Technology) was established.

(2) Period of 1975 up to Today

a. Sub-Period of 1975-1986

It was the peak time of geographical research in natural and socio-economic conditions for economic development of all regions (South, Central, and North) of Vietnam. The Soviet geography school and their concepts and methodology had great influence on geographical training and research in Vietnam.

Institutions and university faculties / departments were established to extend and increase geographical education and research for the 3 regions of the country. Some of them were Faculty / Department of Geography at Hue University, University of Ho Chi Minh City; Center for Geography of Natural Resources (now, Institute of Geography) within Vietnam National Academy of Natural Sciences and Technology; Center for Human Geography within Vietnam National Academy of Social Science and Humanity.

During this period, many projects were conducted at different spatial scales (national, provincial) to investigate natural and socioeconomic conditions for regional development at the Central Highland, the South East, the Mekong River delta and the South Central regions.

b. Sub-Period from 1986 up to today: Integrated and comprehensive geographical researches

The main characteristics of this sub-period are integrated and comprehensive geographical researches and innovation of research methods. Geographical researches focused mainly on natural resource assessment, efficient use of natural resources, natural hazards, environmental protection at regional, local and community scales, and sustainable development.

Vietnamese geographers were given opportunities to study abroad and to exchange experiences with overseas experts. As a result, Vietnamese geography school has gradually transformed itself. Its concept and methodology became integrated and mixed with the former Soviet geography school, the European and other schools.

In education, curricula became more comprehensive with many modern subjects satisfied for practices. Remote sensing and GIS are utilized more and more in geography studies; Environmental geography are paid attention in studying at different scales, and recently they develop as independent part of the geographical sciences.

Human geography has become a field of focus in researches and training (VNU Hanoi, Hue University, Hanoi Pedagogy University, etc.).

Among many research results, the project on Territorial Organization of the Red River Delta (1986-1995) by Prof. Le Ba Thao is worthy to be mentioned here. This project result has contributed to industrialization and urbanization of Vietnam.

IV History of Geography Education at University Level from 1954

We summarize the brief history of geography education in the following chronological outline.

In 1956, the section of geography was established in the Faculty of Geography-History in Hanoi Pedagogic University. In 1962, the first Faculty of Geography was established in Hanoi Pedagogy

Table 1. Geography faculty of some major universities

University / College	Faculty	Teaching staffs	Departments & Laboratories
Vietnam National University in Hanoi (University of Science)	Geography	27	1. Landscape Ecology and Environment 2. Human Geography & Ecological Economics 3. Geomorphology and Marine Geography 4. Cartography and Remote sensing 5. Land Administration 6. Centre for GIS and Remote sensing 7. Center of Land Administration Study 8. Center for Rural-Urban planning and Development Studies 9. Center for Hazard Study
Vietnam National University in Ho Chi Minh City (University of Social Science and Humanity)	Geography	23	1. Environmental Geography 2. Economic Geography & Regional Development 3. Tourism Geography 4. Population Geography 5. GIS Laboratory
Hue University (University of Science)	Geography-Geology	10	1. Geography
Hanoi National Pedagogic University	Geography	35	1. Physical Geography 2. Socio-economic Geography 3. Cartography 4. Methodology of Geography Teaching

University by the geographers from the French school : Prof. Nguyen Duc Chinh, Hoang Thieu Son, Tran Dinh Gian, and Prof. Le Ba Thao.

In 1966, Geography Department was established in the Faculty of Geography-Geology in Hanoi University. The founders and staff of this Geography Department were geographers trained by the Soviet / Russian School.

The Faculty of Geography in Thai Nguyen Pedagogy University was also established in 1966. During the period of 1966-1975 in the North of Vietnam there were only 3 universities (Hanoi University, Hanoi and Thai Nguyen Pedagogic University) that have had Department / Faculty of Geography.

After 1975, new geography faculties / departments were established in all universities and colleges in the whole country of Vietnam. The new comers are : Faculty of Geography, University of Ho Chi Minh City (South Vietnam) ; Department of Geography, Faculty of Geography-Geology in University of Hue (Central Vietnam) ; and other Teachers colleges in almost all provinces.

In 1996, the Faculty of Geography in Vietnam National University, Hanoi became an independent unit from the former Faculty of Geography-geology in Hanoi University.

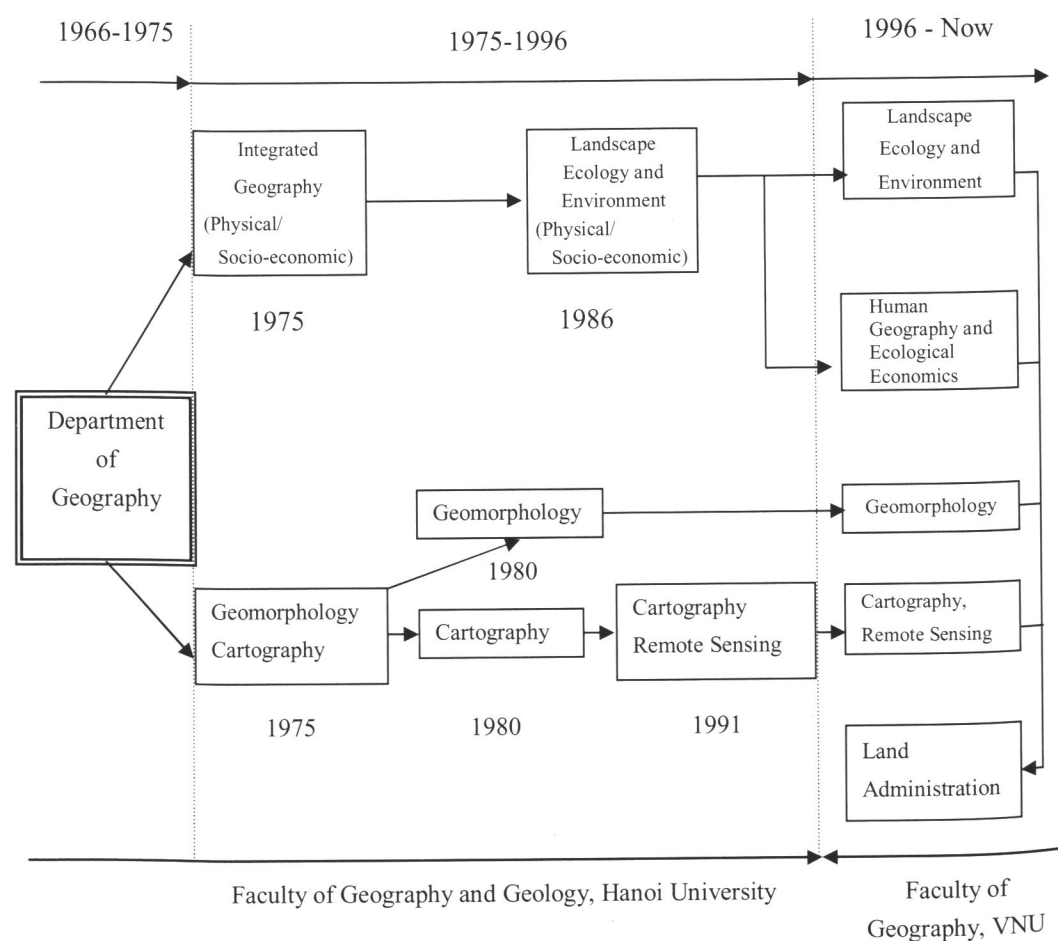


Figure 1. Transition of the Faculty of Geography in Vietnam National University, Hanoi

Some points about the faculties of geography at universities in Vietnam are noted below :

(1) There are two strong faculties in Vietnam : Faculty of Geography in VNU, Hanoi, which has great research achievement, and Faculty of Geography in Hanoi National Pedagogy University which has good teacher education program.

(2) Faculties of geography at Universities in Vietnam can be divided into two groups :

–Faculties of Geography at Universities of Basic Sciences : VNU Hanoi, VNU Ho Chi Minh city, Hue University ; and

–Faculties of Geography of Pedagogy Universities / Colleges : Hanoi, Thai Nguyen, Hue, Ho Chi Minh City.

More comprehensive physical and environmental geography is provided at Faculties of geography in VNU, Hanoi, and Hue University. And that more developed human geography is provided at Faculties of Geography in University of Ho Chi Minh City, Hanoi National Pedagogy University.

(3) Most faculties have established their own center / laboratory of remote sensing and GIS ; the strongest among them is the Faculty of Geography at VNU Hanoi. Figure 1 shows the development of Faculty of Geography at Vietnam National University at Hanoi.

The present faculty in VNU at Hanoi has five departments and two research programs. The faculty trains scholars at bachelor, master and doctoral levels for both Geography and Land Administration. In research activity there are fields like Evaluation of landscape ecological conditions for land use planning and environmental protection ; Integrated physical and social-economic geographical studies for regional and rural development ; Tourism and ecotourism planning ; Urban study ; Hazards study and Remote sensing applications, Cadastral technology, and GIS for geography study.

V Vietnam Geographers' Association and Geographical Institutional Network

(1) Establishment of Vietnam Geographers' Association and its role

The Association of Vietnam Geographers (AVG), and was established in 1988. Prof. Le Ba Thao was the first president and he remained in this position until 2000. Then, Prof. Nguyen Quang My succeeded as president from 2000 till now. The AVG has 27 component organizations with 484 members in total. The National Conference of AVG takes place every five years.

(2) Institute of Geography, Vietnam National Academy of Science and Technology

The Institute of Geography has 120 staff members in all branches divided into Hanoi and in Ho Chi Minh City branches. This institute conducts research studies on almost all aspects of natural resources, environment and natural hazards in land and sea.

VI Human Geography as a "New" Discipline

As this paper has described earlier, physical geography has been more developed than human

geography in Vietnam. To work with Vietnam economic strategy, geographical sciences have an orientation on education and research. However, in geography education at university level it is necessary to establish and develop a department of human geography in all major universities and to consider a balanced set of knowledge of both human and physical geography within the course structure and syllabus. Geographical technology including remote sensing and GIS must be mastered by students, especially for graduate students.

Recently, the term "Integrated Geography" is becoming popular in Vietnam. It concerns the following aspects:

1. Intergrated geographical study including all major aspects of physical, human and environmental geography and sustainable development;
2. Regional, local and community level of study;
3. Rational use of resources, hazards and environmental protection;
4. Urban and rural geography (social and cultural aspects);
5. Geographical technology application and modeling.

In comparison with the human geography researchers in Japan, Vietnamese human geographers are inclined to read the interrelationships among physical element. In this connection, they call their research interest as "man-made landscape", such as artificial topography, tourism management, and national parks. On the contrary, even physical geographers in Vietnam, besides the geomorphology proper, made much contribution to the human agency-interfered objects by using GIS techniques or etc.¹⁸⁾

VI Conclusion

The development of Vietnamese Geography School can be summarized as follows:

- Geography is one of the disciplines with the longest history in academic research in Vietnam.
- The Chinese Geography School affected strongly the ancient geography studies in Vietnam for a very long period.
- The French Geography School has more influence on the development of Vietnamese geography until 1960s. This is the practice of fundamental and descriptive geography.
- The mixed Soviet-Vietnam Geography School (1960-1986) had greater influence in the North and the Central regions of Vietnam than in the South. Basic Investigation Studies were carried out at regional scale.
- Modern Vietnamese Geography is divided into two sections: physical geography with the Soviet Union approaches, of which the concept and methodology has developed and predominated over the geographical studies in Vietnam. Human geography, in other words, the socio-economic geography, is a relatively "new" discipline and has become more and more popular in academic research as well as university education.

Reference Material No. 1: Sections of the book "Peasants in Tonkin Delta" by P. Gourou

- Section 1- Physical environment: This section describes the natural conditions of Tonkin delta. P. Gourou presents three main points narrated in three separate chapters: territory, climate, natural resources and possible disasters. Based on researches of the multi-dimension relationships of natural factors and their components, he drew three comprehensive and new conclusions. These conclusions still have their value even today.

(1) The border of the Tonkin delta or the Red River delta was basically drawn according to the standard height 25 m from to the sea level in the map with a scale of 1:100,000. This border was the same as that of silt sediment at quaternary era in Indo-China seismological maps with a scale of 1:500,000 (Indo-China Seismology Department, Hanoi map) and the area of the delta around 15,000 km². There has not been any research which is persuasive enough to change this border for nearly one century.

(2) The process forming Tonkin delta was divided into two periods, which made up two different deltas lying one on the other. The older delta was dated back to Raj Monasteri, the Ice age Worim, the time of ancient people Neanderthal an Mamus. The older delta was eroded and some areas were destroyed in the Ice age after Worim. It was replaced by the new layer of delta, which was formed in the age of Flandri with a lot of silt sediments. Gourou left some doubt for this conclusion. The doubt refers to the depths and locations of drills in Hai Phong and Hanoi, of which, the drill in Phung Dam (Day River dam) in Ha Tay was 40-50 meters, and a class of yellow cobbles was found at shallower depth at 20 meters.

(3) The whole delta is the harmony and unity of nature and humanity: "it can be divided into small sections according to territorial aspect, or according to cultivating crops of villages, population, and technology. However, these differences were difficult to categorize into natural divisions. The delta is an area without special features in which its parts conform to one another in terms of geography, territory, humanity, economy". It can be concluded that "the same nature and unity of people supporting one another make up the unified country and sustain the unified and hard-working ethnic".

- Section 2 - Rural population: The contents of this section are divided into five chapters describing history of immigration into the delta, population characters, and basic features of villages, and houses. In addition to special and detailed contents of people and houses in the delta, Gourou made two interesting conclusions:

(1) Fear for overpopulation, and as a result, people get densely populated in the delta than what it can afford was somehow limited. In 1936, Gourou's estimate for population density in this area was 430 persons/km². When applying annual natural increase rate 1.5%, the density would be 860 persons/km² in the period of 1984-2001, and 13,000 persons/km² in 2001. "Such situation seems to be unbelievable and impossible for a delta which can hardly feed 430 people/km². How can it meet the demand of food for twice the size of its capacity?" In fact, the population in the Red River Delta was 17,157 people/km² in 2000, which was much bigger than Gourou's estimate. Fortunately, the estimated famine did not happen, because Vietnam had

18) NOMA, H., "Education and research circumstances of Faculty of Geography, Vietnam National University", Hanoi, *SHISEN* (Journal of History and Geography, Kansai University), 99, 2004, p. 50. (J)

instant and effective solutions to increase agricultural production. However, the problem of overpopulation and congested population density is still as urgent as that of 70 years ago.

(2) Villages in the delta had special administration systems that were clearly independent. They were assured under the control of their country whether the feudal or the colonial system. "Village is a self-administered unit which can solve all conflicts among its residents; it collects tax for the state. The state does not interfere into the citizens' living but only with the committees. As long as the committees follow their duties to the country they can keep their control. Though village life looks boring and poor cover, in reality it is very active and varied". Truly, Gourou recognized the power of villages – remained behind the hedges of bamboos from the beginning of country's foundation and protected it – in its history so that no outside force could interfere.

– Section 3 – The peasants' ways of lives in the North.

This section is divided into three chapters describing the peasants' ways of earning a living in the Northern delta: agricultural production, village industry, and trading. His comments are very thoughtful and interesting. Many urgent issues mentioned by Gourou at the time are still hot-burning issues today. For example, the issue of land division in the delta (the whole delta consists of 16 millions pieces of land. Bac Ninh province has 1.5 million pieces which is much more than that of Mekong delta), the problem is to create jobs for over 60,000 unemployed people every year. The matter of distributing equitably and maintaining a stable civilization in the delta in harmony with material resources, beauty, and nature in seventy years ago was wonderful. Gourou warned us that "people do not only need a rich material life but also the ancient civilization, traditions that provided them the balance of spirit and society. The advance of the society merely on material aspect would drag it back in chaos".

Development of Geography in Vietnam: The Past, Present and Future

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The objectives of this paper are to review the history of the Vietnam geography from pre-modern geographical knowledge and identification to the present situation of Vietnam geography with special reference to the change of its field, method, technique, academic institution, and university level education.

As pre-modern Vietnam geography was strongly influenced by Chinese regional geography. Useful geographical knowledge was accumulated to contribute national land problems and local administration system, and furthermore, the relevant maps were also made. But the style of regional geography was not exceeded a traditional Chinese form.

In the period of French domination, conventional four—classification method were generally used: physical setting, economy, historical/political geography, and statistics. As for academic researches, toponymy and historical geography initiated by H. Maspéro in Paleogeographical Indo-China Institute were noticed. In the field of physical geography, Karst geomorphology and cave study were progressed by the archaeologist or the geologist. As for applied geography, the location study of industrial crop, irrigation systems, appropriate place for meteorological observing stations, and hill stations or beach resorts for French people were studied.

In 1930s, the influence of the French human geography became remarkable. C. Robequain and P. Gourou played an active role in the regional geography of northern part Vietnam, or land use research. Although the Gourou's "Les Peasans du Delta Tonkinis" (1936) were the immortal achievements with exhaustive use of aerial-photos or detailed topographical maps, however, unfortunately it had been forgotten for a long time after World War II in the Vietnam geography.

As for modern geography, the period of 1954 to 1975 became a epoch. It is under the overwhelming influence of the Soviet geography which makes the Moscow University the peak, and geology and topography took the lead. Many of the first generation was occupied by students studied in Communist bloc countries. Unification of north-south Vietnam was attained in 1975, and specific studies in Mekong Delta or the central part were conducted.

Economic opening policy "doi moi" started in 1986, new academic trends of Anglo-Saxon geography has been introduced gradually, however, the pace was not so speedy. In the mean while, remote sensing or the technique of GIS raised the status of geography from a national development point.

The major stream of geography in university is leaded by Hanoi University, Hanoi University of Education, Ho Chi Minh City University. They are characteristic respectively: the first is physical geography, geology, geomorphology, landscape ecology, and land management; the latter two are economic geography, human geography. Both have the special new trend in the tourism or applied studies using GIS, remote sensing, etc., and application.

The Association of Vietnam Geographers was established in 1988 initiated by Hanoi University. Five-interval academic meeting is held, but there are no periodicals until now. Otherwise, a researcher in Institute of Geography, Vietnam National Academy of Science and Technology plays an important role in the field of natural resources, environment and natural disasters.

Human geography is beginning to have power in the basis of the name of "Integrated Geography" in Vietnam in recent years. It covers man-made landscape, small- and meso-scale community studies, and urban or rural geography. On the other hand, the geography made much of physical environment, planning and policy making, and socio-economic geography of the Soviet geography style is also important.

Key words: Vietnam geography, Pierre Gourou, Tonkin delta, French geography, Soviet geography, GIS

ベトナム地理学の発達—過去・現在・未来—

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本稿の目的は、ベトナム地理学の歴史を前近代の地理的知識の発達から現在の状況まで、その専門分野や方法・手法の変遷と制度や大学での地理学の教育から概観を試みることである。

前近代は中国の地誌の影響を受け、国家の土地問題や地方行政制度に有用な地理的知識が蓄積され、それらに関連した地図も作成されたが、地誌の体裁は中国の伝統的な形式を超えるものではなかった。

フランス植民地時代には旧来の地誌の形式を踏襲した自然、経済、歴史・政治地理、統計の4分法が用いられた。マスベロらによる古文書研究所での地名や歴史地理は注目される。自然地理学ではカルスト地形や洞窟学が考古学者や地質学者によって発達した。応用的な地理学分野としては工芸作物の適地利用、灌漑システム、気象観測所の適地調査、フランス人のためのヒルステーション立地などが研究された。

1930年代になるとフランスの人文地理学の影響が顕著となり、ロブカンやグルーが北部ベトナムの地誌や土地利用研究で活躍した。とりわけグルーの『トンキンデルタの農民』(1936)は空中写真や詳細な地形図を駆使した不滅の業績であるが、第二次世界大戦以後のベトナム地理学では長く忘れられた存在であった。

現代の地理学は1954年から75年までが一つの画期となる。モスクワ大学を頂点とするソビエト地理学の圧倒的な影響下にあつて、地質学、地形学が中心となった。ベトナムの戦後第一世代の多くがこの時期に共産圏諸国の留学生によって占められた。1975年に南北ベトナムの統一が達成されたが、メコンデルタや中部の研究に特色が見いだされる。

1986年以降のドイモイによる経済開放によって、アングロサクソン系地理学のさまざまな手法や概念が英語メディアを通じて徐々に入ってきたが、その歩みは遅々たるものだった。その間に、リモートセンシングやGISの手法による地域計画が国家事業の観点から重要な役割をにない、地理学の地位を高めた。

大学における地理学はハノイ大学(現在はベトナム国家大学ハノイ校)の地質学・自然地理学を中心に、景観生態学や地形学、土地管理などの分野が中心の学部と、ハノイ教育大学、ホーチミン大学における経済地理、人文地理学中心のものに大別される。いずれもGIS、リモートセンシングなどを用いたツーリズムや応用地理学的な分野に特色を持つ。

ベトナムの地理学会は1988年に設立され、ハノイ大学を中心として5年ごと大会を開催しているが、定期刊行物はない。ほかにベトナム国立科学技術アカデミーにも研究者がいて、天然資源、環境、災害が主要テーマとなっている。

近年は「総合地理学」の名のもとに、人文地理学がベトナムでようやく力を持ち始めている。その対象とするのは人間が作った人文景観や中・小地域でのコミュニティ、都市・農村地理学で、現代ベトナム地理学の台風の目となろうとしている。その一方で、政策・計画や自然地理学と社会経

済地理学を重視したソ連流の人文地理学も並存し重要視されている。

キーワード：ベトナム地理学、ピエール・グルー、トンキンデルタ、フランス地理学、ソ連地理学、GIS