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PROGRESS OF CHINESE REGIONAL GEOGRAPHY STUDIES IN RECENT TWENTY YEARS

ZHANG Jun-tao, LIU Feng, LI Zhe
(Institute of Geography, the Chinese Academy of Sciences, Beijing 100101, P. R. China)

ABSTRACT: Regional geography, embodying the regionality and integration, is the kernel of Geography. Since the 1980s, the Chinese geographers have extensively taken part in the social practical activities and made progress in physico-geographical regionalization, economic regionalization, territorial (regional) development planning, construction of special economic zone, and integrated research in the major areas of China. Through these works, the theories of regional geography have been richened and the capacity participating in the social practice promoted as well. In China, many regional researches had been conducted respectively from the aspects of regional physico-geography and regional economic geography, etc. According to the cases, this paper gives a review on the studies of regional geography during the latest two decades in China. It ought to be indicated that the natural and human components should be combined and the disciplines intersected and permeated, with the support of advanced technology. In order to serve the regional sustainable development, on the background of global change, this is an inevitable tendency for the development of the regional geography.

KEY WORDS: regional geography; regional physico-geography; regional economic geography; integrated research; geographical research

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Regional geography embodies the characteristics of regionality and integration of geography. Since the 1980s there are manifold regional geography studies in China, geography has been further developed in theories and practices. At the same time, the importance of regional geography studies was reflected in social practice activities. In this paper, the development of regional geography and the main achievements during the two decades in China are reviewed.

1 REGIONAL PHYSICO-GEOGRAPHY STUDIES

To meet the demand of the development of the national economic and social production activities, the research of regional physico-geography have been emphasized. Along with the research works, there has been a great development in the regional physico-geography. The major aspects of the study are discussed as follows.

In order to make a thorough recognization of the natural resources and the natural conditions of China, serve the national economy and the agricultural production, the physico-geographical regionalization which possess distinguished features have been launched.

ZHAO Song-qiao (1983) discussed the physical geographic region, characteristics, regional differentiation, and rational utilization of the land resources in China. XI Cheng-fan *et al*. (1984) divided China in to 3 areas, 14 physical zones, and 44 sectors. The

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Biography: ZHANG Jun-tao (1963-), male, Ph. D., candidate of Institute of Geography, the Chinese Academy of Sciences, has been egaged in integrated approach of physical geography, biogeography, regional environment and comprehensive exploitation.

natural features, agricultural status, productive potentiality, and the direction in each sector were explained. They evaluated the natural resources of agriculture, posed some problems in agriculture, and put forward some countermeasures for the land use and agricultural development. HUANG Bing-wei (1989) revised the physico-geographical regionalization of China in 1959, and simplified the hierarchic system of physico-geographic regionalization. He reaffirmed that the temperature and thermal units were two different concepts. On the basis of temperature conditions, the relevant natural phenomena and agriculture production, in the lowland area of the eastern China, 9 thermos-belts may be identified, which included cold temperate, middle temperate, warm temperate, northern subtropical, middle subtropical, southern subtropical, peripheral tropical, middle tropical and the equatorial tropical belts. The new version is convenient for comprehension, application and exchange. HUANG Bing-wei advocated that the type regionalization and area regionalization should be integrated in the national scale. It means to use the type regionalization in the high-ranking units and to apply the area regionalization in the lower units. LI Wan (1990) inquired into the basic theories of physico-geographical regionalization and introduced the physical regionalizations in the different scales, from the aspects of the regionalization and application. JIANG Zhong-xin (1990) discussed the physical geography. REN Mei-e (1992) differentiated the whole nation into 8 natural areas, 30 natural sub-areas, and 71 natural sectors, according to the basic characteristics, formation, evolution, and regional differentiation of the natural environment in China. The traits of 8 natural areas were elaborated respectively. The issues of the resources ecploitation and the environmental renovation had been discussed as well. ZHENG Du *et al*. have presented a discussion of the principles, theories, methods, indexes, and hierarchies in the physico-geographical regionalization. The typical case of physical regionalization in multi-scales has been analyzed.

A part from the national scale studies, regional studies in provinces of special economic zones were also conducted. These works emphatically investigated and analyzed the natural conditions and resources.

ZHANG Rong-zu *et al*. (1982) comprehensively expounded the main features and the components, which formed the natural geographical environment in the Qinghai-Xizang Plateau. They also brought to light the role of regional differentiation in the plateau and illustrated them in an all-round way. Two books on the special economic zones have been written: The physical Geography of Arid Region in China by ZHAO Song-qiao *et al*. (1985), The Physico-geographical Regionalization of Xinjiang by XIG (Xinjiang Institute of Geography), the Chinese Academy of Sciences (1987). They gave a systematic description of the physico-geographical elements (geomorphology, climate, hydrograph features, vegetation, soils and animals, etc.), followed by a discussion of the natural conditions, resources and integrated research of the regional units. ZHENG Du (1987) probed into the features of regional differentiation in the Hengduan Mountains, the vertical natural zones, and the natural regionalization, etc. The role of natural zones and the features of plateau areas have been reflected.

The applied research, which uses the land type as the basis, has been developed in the regional physico-geography studies. LIU Yan-hua (1992) discussed the features of entirety and integration in plateau and mountain areas. He analyzed the land type, land structure, land division, land evolution, land productive potentialities, land planning, and land population bearing capacity. Meanwhile the relationship and the function among these systems have been studied. In physical regionalization using the methods of bottom-up, making use of the land-type-structure theories will have significance for developing the physical regionalization theories, opening the research methods, and establishing the regional management.

Since the Eighth Five-Year Plan period and the Ninth Five-Year Plan period, from the objective reality as well as the intersection of multi-discipline, the regional physical geographical studies have been launched more extensively in China. A series re-

searches of natural conditions and resources in the Huanghe (Yellow) River valley; the regional studies in northwest China; the studies on the formation and evolution, environmental changes and the ecosystem of the Qinghai-Xizang Plateau; the integrated research in the Changjiang (Yangtze) River basin; the environmental studies about the Huang-Huai-Hai Plain; the land use/land cover research in different scales and types, etc., have greatly propelled the development of rgional geography in China. The Chinese geographers have also progress in the marsh research. It was summerised in "The Progress of Marsh Research in China" (LU, 1998). On the background of global change, the earth system science, especially the territorial system science, has a close relationship with the regional sustainable development. Therefore it is essential to study and analyze synthetically the region, in which a further study on the physical geographical state was conducted. A study on the eco-geographic regional system of China and its application in global change, a focal item of National Natural Science Foundation of China, is undertaken by the Institute of Geography, the Chinese Academy of Sciences (CAS) (IG, 1998). It aims to use the new materials and methods, develop a new recognition about the natural geographical situation of China, a new regionalization, an up-to-date hierarchy, and then to serve the study on the global change and the regional sustainable development.

2 REGIONAL ECONOMIC GEOGRAPHY STUDIES

In 1978 China began to carry out the reform and opening policies, regional economic geography studies came into a new period. Chinese geographers have given a deep inquiry about the theories, methods, and the practice realms etc. There has been an enormous development of the profundity, the scope, and the achievements.

During this period, the major social practice activities, in which the economic geographical research participated were 1) an integrated exploitation and administration of territory and the macro-distribution of productive forces; 2) regional economy and regional economic development strategies, which focus on the regions and the cities; 3) agricultural regionalization and the rural development. In the middle 1980s, the national agricultural regionalization and the regional ones have given impetus to the integrated management and development of the rural areas. The purpose of the comprehensive investigation, which was organized by CAS, in the southwestern area, southern mountains and Xinjiang of China, was to provide policy-making schemes for the regional development.

The economic geography of China positively has engaged in economic regionalization, territorial renovation and the studies of regional development strategies and sustainable development. It is important for the economic development of multi-scaling regions. For example, LU Da-dao (1987) analyzed the strategic transform and the construction of part of southwestern area of China from the 1960s to the early 1970s in China, the economic uneven development from the 1970s to the early 1980s, and the validity of diverting the territorial exploitation focal point from the west to the east of China. In accordance with the propaganda, which stood for the strategic transform to the west of China, Lu Dadao posed that the national distribution of productive forces can not be greatly changed during the seventh Five-Year Plan period and the Eighth Five-Year Plan period. On the basis of "point-axis system", he put forward the top-grade development axis are the east coastal zones and the banks of the Changjiang River, which shaped as "T". The economic regionalization of China has been also conducted (YANG Shu-zhen 1990; YANG Wu-yang 1992; HU Xu-wei 1993; GUO Zhen-huai *et al.*, 1997).

Some books or articles on the object of study, theoretical basis and the brief research contents have been published, such as *A Study on the Discipline of Regional Economic Geography* (CHEN, 1985), *A Study on the Basic Theories of Regional Economic Geography* (CHEN, 1987), *The Principles of Regional Economic Geography* (CHEN, 1991), and *A Retrospect and Prospect on the Development of Re-*

gional Economic Geography by CHEN Cai, *et al*. In the domains of practice and application, the exploitation of the territorial resources, the industrial distribution and the studies on the open and cooperated regional economy have been enhanced. The representative books are as follows: *The General Discussion of Agricultural Geography in China* (Institute of Geography, CAS, 1980); *An Introduction to Economic Geography of China* (SUN Jing-zhi, *et al*. 1983); *A Series of Economic Geography of China*, in thirty-one volumes, each volume is devoted to a region (SUN Jing-zhi, *et al*. 1986 – 1992); *A Study on the Regional Development of China* (YANG Kai-zhong, 1989); *Territory Exploitation, Renovation and Planning* (1990) and *Economic Geography of China* (1998) by WU Chuan-jun *et al*; *Industrial Geography of China* (LI Wen-yan, 1990); *Theories and Practices on the Distribution of Industry in China* (LU Da-dao, 1990); *A Study on the Economic Regionalization of China* (YANG Shu-zhen *et al*., 1990); *Industrial Distribution of China* (ZHOU Shu-lian, 1991); *A Study on the Industrial Distribution of China in 2000* (FANG Lei, 1993); *Regional Development and the Space Structure* (LU Da-dao, 1995); *The Urban Geography of China* (GU Chao-lin *et al*., 1998). In higher education, Economic Geography of China and Economic Geography of the World etc have been published. Along with the development of economic geographical theories, there are more and more books published.

During the course of change from the planned economy to the market economy, a new mechanism for the regional economic growth emerged. Such being the case, the main realms of the regional economic geography turned into regional sustainable development. The overall decision studies have replaced the individual ones of the agriculture, industries and the cities. For the sake of the economy, eco-environmental construction and the subject, the regional analysis and the regional modes have been strengthening.

When making researches into the regional sustainable development, the economic geography emphasizes the regional economic development. It aims at the numeral relation of the economic growth and the eco-environment, which will be revealed by the systematic analysis and the courses simulation of the distinct regional economic growth and the eco-environmental evolution.

The studies of the regional economic growth lay particular emphasis on the relationship among the population, resources, and environmental development (PRED). It will explore regional basic strategies for the economic growth, structure change, resources exploitation, protection, and eco-environmental administration. The channels to set up a social-economic system, which saves on resources, have been studies as well.

3 THE OTHER REGIONAL GEOGRAPHY STUDIES

3.1 National Resources Survey and Agricultural Regionalization

Under the leadership of Commission for Integrated Survey of Natural Resources, CAS, there has been an overall investigation of the natural resources in China. It is convenient for the regional study, because of the data accumulation. On the basis of investigations, a series of books about the regional geography have been published. For example, the Eighth Five-Year Plan period the key item "Bringing Huanghe River under Control and Exploiting the Water Resource" has provided lots of the scientific basis and policy-making support for the renovation and exploitation of the Huanghe River basin. In 1990 – 1991, a series of books on the physico-environmental conditions of the Loess Plateau published by the Loess Plateau Integrated Survey Teams, CAS. In 1994 – 1996, "*A Series of Natural Resources of China*" was published, which as given a comprehensive research of the natural resources in China and posed strategies for rational exploitation.

The geographers have taken part in the regional economic development and environmental management. The desertification control, river utilization, tropical crops planting, and coastal zone develop-

ment, etc. are the major realms. Moreover, the Huang-Huai-Hai Plain, the Changjiang River basin, the Sanjiang plain, Hainan Island, and Jing(Beijing)-Jin(Tianjin)-Tang(Tangshan) area have been studied as the priority areas.

Since the 1980s, the multi-scaling agricultural regionalization and the land use planning have provided the scientific basis for recognizing the natural resources in different regions, planning the agricultural development and using the land resources rationally. *The Theories and Practices of Agricultural Regionalization of China* (ZHOU Li-san *et al.*, 1993) and *The Land Use of China* (WU Chuan-jun *et al.*, 1994) are representative books, which have deeply probed into the national scale land use and agricultural regionalization, given a scientific guidance for the regional economic development and agricultural production distribution.

3.2 The Studies on the Coastal Open Zones

The construction of the coastal open area has started a new field for the regional geography. Special economic zones were established firstly in Guangdong and Fujian provinces. The geographers have made a greater contribution to the development of the special economic zones. For instance, they participated in the drawing up of the overall plan of the Shenzhen City, and they made a comprehensive investigation on the four special economic zones and discussed some issue about the concept, place and the developed scale of the special cities etc. Many books have been published, such as *Studies on the Special Economic Zones of China* (ZHONG *et al.*, 1983); *The Natural Resources and the Economic Exploitation of Shenzhen City* (GIG, 1986); *Special Economic Zones in China* (XU *et al.*, 1990); Recently, the institute of geography, CAS, the departments of geography in universities and other institutions have done a lot of work in different regions. The areas of Jing-Jin-Tang, Southern Fujian Province, Pudong opening district and the economic opened region of Shandong Peninsula etc. have been researched from different aspects. *The Regional Geography of Jing-Jin-Tang* (IG, 1988), *The Industrial Development and Distribution Around Bohai Area of China* (ZHAO Ling-xun *et al.*, 1992), and *The Strategic Study on the Sustainable Development Around Bohai Area of China* (LU Da-dao *et al.*, 1995) are the representative books.

In order to bring along the national economic development and to join the world economy, there is a further study on the coastal opening areas, especially in the Changjiang River Delta, around Bohai area, and central-southern areas of Liaoning province. The specific problems in these areas have been studied as well. Such as the industrial distribution, *Infrastructures and Urban Development in Changjiang River Delta; The Water and Soil Resources and the Regional Development in Changjiang River Delta* by SHE Zhi-xiang *et al.* (1995, 1997) have been published. HU Xu-wei *et al.* (1998) has presented the research on the space gathering and spreading of coastal concentrated urban areas.

3.3 The Studies of World Geography

The fundamental studies of world geography include the continental geography, the national geography, and the branch geography of the world. Apart from the research of geographical phenomenon within a region, the studies on the relation of the different regions have been reinforced. It consists of the comparison of China with the foreign countries, of different type regions and special topics; the studies on the international cooperation and exploitation in broader areas, the international investment environment, the unification of the world economy, world trade, and the geographical research of multi-national companies, etc. All these not only enrich the contents of the world geographical research but also provide a condition for deepening the theories. In general, owing to the limitation of the prerequisite, the world geographical study is a frail section of regional geography.

3.4 The Regional Studies of Human Geography

Since the 1980s the geographers of China have made a deeper analysis of the regional human phenomenon from different aspects. For example, in study of the historical human geography, the geography of historical property, historical population, historical transportation and historical civilization etc. have been comprised.

The study on regional human geography deliberated how to use and remold the natural conditions according to the laws of the nature and the social economy. Meanwhile, it studies the issues of the different racial and cultural regions.

It pays close attention to the relationship of marland in multi-scaling regions, inquires into the theories about the forming process, structure, and the developing trend of the relation of manland. The interaction of marland, the mechanism of transformation and exchange of the matter, and the ways and countermeasures which are use to adjust the structure and the function of the marland relationship. Study on the Evaluating System of Marsh society and Economy (CUI *et al.*, 1997) has discussed how to evaluate the social-economic state in a special area. The models on the sustainable development, control, and the population bearing capacity of multi-scaling regions have been researched. From the above, the theories, methods, and the practice capacities of the regional human geography have been perfected and strengthened.

3.5 The Application of Remote Sensing and GIS to Regional Geographical Studies

Along with the development of the science and the technology, new technologies and methods are applied in the regional geographical studies extensively, which have been promoting the development of the regional geographical studies.

Remote sensing (RS) are being utilized in the studies of regional geography. For instance, in a city, the land use/land cover change, vegetation cover, urban traffic, heat island effect, and urban planning, etc. are studied with the RS. The areas of the land types and the soil erosion in different intensity of the Loess Plateau have been provided in quantity using the RS. Now, many fields of the regional geographical studies need the RS. In 1998, by using the RS, the effect of the flood disaster in Changjiang basin was observed successfully.

The geographical information system (GIS), as a new technology, has been developed greatly since the 1960s. It is significant in the studies of the regional geography. With the GIS, data can be collected, renewed and integrated well. Through the models, statistical analysis and temporal spatial complex analysis in a region can be done. These methods have improved the profundity, accuracy and the efficiency in the studies of regional geography.

The technical progress of Global Positional System(GPS), Multi-media system(ICON) and the Information Highway has given impetus to the development of the regional geographical studies.

In the recent years, the integrated research of the region has been strengthened. When we want to know well a regional trait, the natural and human components of a region should be integrated. Li Chunfen stressed that the study of the relation of areas should be strengthened. The Relation of Areas, the Forward Position in the Near Future of Regional Geography has been published in *Acta Geographica Sinica* (LI Chun-fen, 1995). Huang Bingwei emphasizes the importance of the earth system science study in China, especially the study of the territorial system science. By the theoretical and practical research, there will be a scientific foundation to serve the regional planning and the regional sustainable development. Lately, a study on the territorial system science and the regional sustainable development, a major item of CAS, has been launched in the Institute of Geography, CAS. The integrated research, as the above, will further promote the development of the regional geographical studies.

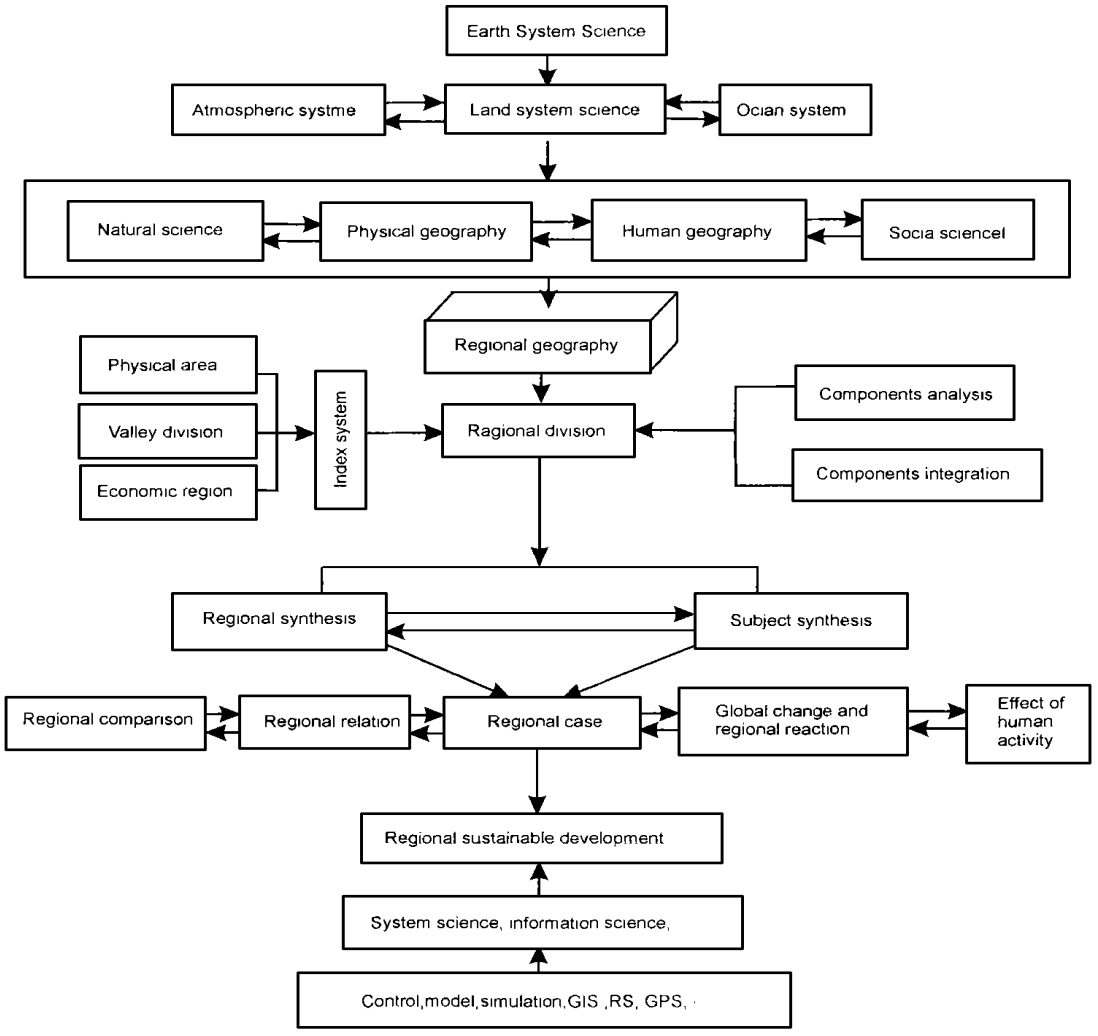

Fig. 1 The frame of modern regional geographical studies (by courtesy of YANG Qinr ye *et al.*, 1996)

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