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A HISTORICAL EXAMINATION ON LAND DESERTIFICATION IN NORTH CHINA

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ABSTRACT: Desertification control has been facing severe situations in the interlocking area between cultivated land and grazing land in North China since the Qing Dynasty because of unreasonable land utilization. The paper analyzes the policies of all the previous governments to open up land, and examines the historical and geographical background and process by means of historical records. We consider that causes of the area of land desertification to extend are increase of farming migrants, the change of life style of Mongol and weather and land conditions. In order to control the spread of land desertification, we suggest the level of the government to make policies should be improved, the number of farming migrants should be controlled, the Government's general and specific polices should be actively publicized, and investment in agriculture should be increased.

KEY WORDS: farming migrants; life style of Mongol; weather and land conditions; land desertification; Qing Dynasty

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INTRODUCTION

According to historical records, there has existed e large-area desert in the northwest of China for a long ne, which formed in the geologic age and historical :riods, and continuously evolved because of climate ıanges and human activities. Although a certain nount of achievement has been obtained since the)50s, land desertification went on expanding quickly.)r desertification by wind erosion, the average expan-)n speed was 1560km^2 per year from the late 1950s to e middle 1970s (ZHU, 1985), 2100km^2 per year)m the middle 1970s to the late 1980s (ZHU *et al.*,)90) and 2460km^2 per year in the middle of 1990s (WANG *et al.*, 1999). Land desertification has resulted in a rapid decline in biomass production and land potential productivity, and even loss of land resources. According to estimation (ZHANG *et al.*, 1996), direct economic loss was about 54×10^9 yuan, but indirect one increased twofold to fourfold, even over tenfold (ZHANG *et al.*, 1994).

Faced with startling statistics and the trend of serious land desertification, we simply owe to human unreasonable activities resulting from fast increasing of population and backward mode of production and management, such as over-reclamation, over-grazing, unrestricted cutting, squandered water resources and indiscriminate mining, which is not proper. On the con-

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trary, it a scientific attitude that we must trace back to the process of man-land relationship in the desertified area, and study advantages and disadvantages of past governments' decision, so that we can understand objectively and precisely the cause of contradiction of man-land relationship in the desertified area, and provide a scientific basis for preventing and controlling the regional desertification. Therefore, we choose the interlocking area between cultivated land and grazing land to the east of Helan Mountains, one of two more serious desertified areas (Dong *et al.*, 1999), as a new task for study.

By means of examination and analysis, we find that the change of life style of herdsmen resulted from some polices (including carrying out the system of leagues and banners, delimiting areas to graze, and teaching herdsmen to exploit grassland in the early Qing Dynasty in Inner Mongolia), and many migrants of Hans resulting from general plans feudal governments carried out so as to develop and strengthen the boundary. These policies and migration made the regional man-land relationship sharper quickly, sped up the process of grassland degradation and sandy desertification, and showed the directive function of decision of governments and impact on the process of regional man-land relationship.

2 DISCUSSION

2.1 It Was a Leading Factor That Reclaiming Wasteland over an Extensive Area Caused by a Large Number of Farming Migrants Made Desertification Sharp in North China

In the early Qing Dynasty, the government set up 132 administrative organs to strengthen the boundary and supervise cultivation outside strategic passes, because there were a number of advantageous farming conditions, such as fertile land, favorable weather, convenient irrigation and scarce population (*Qingshengzu Shilu*, 1985a). Thus Hans were attracted to move. On the other hand , natural and man-made calamities in the late Ming Dynasty and the early Qing Dynasty, including frequent floods and drought and chaos caused by war in North China, and enclosure of land in the capital city and its environs on a large scale, led to a large number of impoverished peasants to move. In the late Kangxi Period, a new phase has been entered upon that thousands of farmers coming from Shandong Province went into business and farming in the south of Inner Mongolia (*Qingshengzu Shilu*, 1985b), and a larger number of farmers coming from the provinces of Zhili, Henan and Shanxi also went there to reclaim wasteland (LU, 1994).

In the early Yongzhen Period, Emperor Yongzhen issued the imperial edict that local official had to allow impoverished farmers to reclaim wasteland and didn't stop and blackmail them in order to let them make a living (*Qongshizong Shilu*, 1985c). Although the policy of blockade and no admittance was carried out, it was an irreversible trend for the poor to go to reclaim outside strategic passes in the Qianlong Period and Jiaqing Period (1736 – 1820). So the police of having the poor prosecuted became a mere scrap of paper. After Daoguang Period and Xianfeng Period (1821 – 1861), strengthening the boundary by means of migrants and casual reclamation for soldiers and peasants to make a living also stimulated migration from the northern provinces to Inner Mongolia. Now take Chengde Prefecture for example, farming population was 550 000 in 1781, increased by 780 000 in 1827, and increased by 2 820 000 in 1190. Migration process in Chakahar and Erdos was the same as Chengde Prefecture.

In order to deal with the social contradictory and economical disputes taking place at any time between Hans and Mongol more effectively , the government set up the administrative units such as countries and prefectures which formed a jagged pattern with the former banners in the new agricultural area where Hans were distributed densely. Then two phenomena came into being with establishment of the administrative unites standing for different economic patterns. First, population of agriculture was more than that of animal husbandry, which led to developing the large-area grasslands. Second, because of influence of Hans economic activities, herdsmen continually changed the former life style and increased composition of agricultural econo-

my, and finally, established the economic pattern of agriculture, which gave impetus to and sped up the development and made contradiction of man-land relationship sharp.

What's more, after liberation in 1949, Chinese government organized farmers coming from Shandong, Henan and Hebei provinces which were small in area but densely populated, to move into Inner Mongolia being a scarcely populated area in a planned way, in order to reclaim wasteland and extend the area of cultivated land. At the same time, a larger number of farmers also moved there from the populous East spontaneously because of poverty. Therefore, the number of population in 1979 in Inner Mongolia was over twice as many as that of 30 years ago (QIU, 1981), and net migrants was about 286 080 000, and the population density changed from 10 – 15 persons per square kilometer in the early 1950s to 40 – 60 persons per square kilometer in 1980s (ZHU *et al.*, 1999). The increase of population brought great pressure to bear on land resources, and led to extending the area of degenerated grasslands, so the area of degenerated grasslands was18% in the early 1960s, but 30% in the early 1980s (GANG, 1992).

2.2 It Is a Guiding Factor That the Change of Life Style of Mongol Makes Desertification Sharp in North China

It is well known that the northern grassland was a place for nomadic people to go after water and grass and to live on livestock farming in the ancient time. Some nationalities such as Xiongnu, Xianbi, Tujue, Qidan, Xushen and Mongol had lived here for over 2000 years by way of nomadism. Generally speaking, nomadic people were apt to choose, adapt and go after lush pasture because of rash nomadic life style, and man-land relationship was a good circulatory system under the adjustment of nature, so resources of rangeland were plentiful.

However, great changes took place in the late Ming Dynasty and in the early Qing Dynasty. Manzu rising from the complicated national relationship was full of vitality at first during the struggles of uniting the tribes of Manzu and emphatically conquering and wiping out Khan of Mongolia. Nobles of Man nationality carried out the system of leagues and banners to administrate and rule the tribes of Mongolia, which was formed in Mongolia of South Desert including 27 banners at first and later 49 banners namely Inner Mongolia at the beginning of Kangxi Period (1662 – 1722). The system of the league and banner was a civil and military unity like 8 banners of Manzhou, and a perfect administrative system of military and politics. All banners regarded chiefs of tribes as leaders, each of which was in charge of military and politics of a banner and was also called Jashak of Mongolia in history.

In order to control and supervise Jashak, the Qing government worked out the policy that Jashak divided into parts had to take part in the league meeting presided over by the leader and vice leader of league elected. At the same time, the imperial commissioners or the officials of Li-fan-yuan specially appointed by the Qing government were present to clear the criminal cases, arrange and examine young men, inspect ordnance and troops and so on. 49 banners were divided into six parts to meet together, by which six assemble places were named Jirem, Ju Ud, Zsutu, Xilin Gol, Ulanqab and Ih Ju.

In addition to 49 banners of 6 leagues, Inner Mongolia in the Qing Dynasty included Ejin Turhut Banner, Alxa Erlut Banner in the west of Hetao and Xilut Kulun Banner. In the former two bannners, the Qing government did not set up leagues, and latter banner was a unity of religion and politics whose leader was a lama. Because of politics and history, the Qing government set up four administrative units named Qunmu like banners here near 8 banners, and the imperial government appointed officials to rule. In short, the system of the unity of military and politics was gradually set up in Inner Mongolia in the Qing Dynasty.

With the establishment of leagues and banners, the Qing government began to send his subjects to delimit boundary lines of the grazing area in 1634. In 1713, Emperor Kangxi delimited the boundary lines of the grazing area in Erdos (ZHAO, 1997). *Da Qing Huidian · Lifanyuan* says: " The boundary lines are

mountains and rivers or Erbo (namely hillock being made of stones)". The lines of all the banners, like administrative lines in Central Plains, were delimited according to the shape of mountains and rivers. This delimitation was written in the politic documents, so unnecessary details were not given. Before delimitation, legal lines did not exist, although habitual scopes of the grazing area had already taken shape. Therefore, formation of boundary lines was a turning point for nomadic people to change from the nomadic life style to the life style of herdsmen settlement.

Therefore, rigorous regulations and laws have been gradually formed and perfected to delimit the boundary to administrate and develop land resources, which was almost identical with the organization system of administration and regulations of administrative divisions in the agricultural area. In contrast with the ancient nomadic life style, it was an unbelievable phenomenon that a series of relatively fixed herdsmen settlements came into being in the seats of administrative organs at different levels, and the system of leagues and banners has been adopted from the late Qing Dynasty to today.

The change in nomadic life style was due to the foundation of system of leagues and banners in the early Qing Dynasty, and the change in grassland resources were more frequently and more intensively than ever, which result in imbalance of grassland resources and ecological environment to some extents. However, the aim that the Qing Dynasty set up and carried out the system was to divide and rule the unusually intrepid Mongol, and to guard against collaboration of Hans and Mongol.

In fact, feudal nobles of Mongol put forward suggestion to develop farming so as to change the straitened circumstances of herdsmen in 1698 (*Qingshengzu Shilu*, 1985d), when Qing Dynasty sent officials to teach herdsmen how to farm in the winter, and issued the imperial edict that farming had to be developed in the suitable area so as to make herdsman keep alive (ZHAO, 1977). Accordingly, the government began to develop agriculture in the Xar Moron River valley, Erdos and Qahar in Kangxi Period (1662 – 1722). Then, Kangxi's imperial edict was an important mark of the change of life style and of making use of grasslands from choice, adoption and dependence to active utilization, directional development and artificial transformation, though the proportion of farming in the national economy as a whole was lower. Therefore, It was obvious that disruption of ecology environment was beyond description in contrast to the life style of herdsmen's settlement. Of course, regional differences of production conditions and agricultural development also led to differences of agricultural composition, of ecological environment, of contradiction of man-land relationship, and the process of desertification.

In conclusion, the change of life style gradually brought about two basic facts as follows. First, emergence and development of herdsmen settlement caused a host of fixed settlements spreading all over the grassland. Second, population of Mongolia multiplied rapidly. According to historical records such as Manwen Laodang and Baqi Tongzhi, all the population in Inner Mongolia was about 400 000 – 500 000 in the early Qing Dynasty, but population increased by about 650 000 from the mid of Jiaqing Period (1796 – 1820) to the late Qing Dynasty, so the population growth rate in Inneer Mongolia was about 6‰ from the early Qing Dynasty to the early Jiaqing. Although multiplication of population was checked because of conscription in Xianfeng Period and Tongzhi Period (1851 – 1874), and rebellion of Huizu and migration in Tongzhi and Guangxu Period (1862 – 1908), yet population retained the scale of over 600 000, which showed the change actively influenced and gave impetus to the multiplication. After the 1950s, policies of encouraging settle-down and developing farming and livestock husbandry sped up the multiplication. With population increasing quickly and agricultural composition being high gradually, environmental pressure caused by exploiting the grassland and transforming ecological environment was a guiding factor of desertification.

2.3 Weather and Land Conditions Are Basic Factors to Speed up Desertificatiion after Reclamation

As good weather and soil conditions in the interlocking area between cultivated land and grazing land,

the common people have made the process of development quick, continuous and irreversible, especially on the initiative of central and local governments since the early Qing Dynasty over hundreds of years. But feudal governments of past ages had a superficial and unilateral knowledge on natural environment and resources, which led to migration on the large scale and blind development.

Then, that the large-area grassland was transformed into cultivated lands destroyed vegetation, and made croplands uncovered over half of a year, when it exactly rained scarcely, was arid and cold, blew regularly and strongly, eroded strongly by wind. But the synchronism was not expected or neglected completely by past policymakers and developers, and was also a regular factor resulting in desertification, especially in the forest and grassland.

3 CONCLUSION

In short, causes of land desertification are increase of farming migrants, the change of life style of Mongol and weather and land conditions. Because desertification is getting more and more serious gradually, and the bearing capacity of grassland is getting lower and lower gradually, we put forward some proposals as follows.

Firstly, the police-making body should examine and summarize general and specific policies in the past, and shouldn't have immediate interests in mind.

Secondly, the local government should control the number of migrants and transforms partial cultivated land into grazing grounds in the planned way so as to make the number of agricultural population to be suitable for the land bearing capacity.

Lastly, the local government should actively publicize the government's general and specific policies to raise the level of understanding of local people, and should invest a great deal in agriculture to make local people to be lifted out of poverty and backwardness.

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