

Investigation and Evaluation of the Effectiveness of Land Desertification Control in Yili Area, Xinjiang

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Abstract

At present, land desertification is still a serious ecological environment problem in China. Xinjiang is the administrative region with the largest desertified soil area in China and the most severe wind and sand damage. This paper chooses Yili area of Xinjiang as an example to study the situation of soil desertification prevention and control, and summarizes the control mode of soil desertification, and uses comparative analysis method to analyze its soil desertification prevention and ecological benefits. Propose the effectiveness of improving and controlling land desertification, and improve the level of land desertification control in Yili from the perspective of management and technology.

Keywords

Land; Desertification Control; Evaluation; Yili Area.

1. The Important Position of Yili Area in the National Ecological Pattern

Soil desertification refers to the natural phenomenon of aeolian activity and desertification landscape after the destruction of plant soil in dry, semi-dry and windy areas, or the loss of ground cover. Xinjiang is the region with the largest area of pebbled land in the country. According to the fifth national desertification soil and sandy observation results, the area of pebbled land in Urumqi is 747,100 square kilometers, accounting for 44.8% of the total land area of Urumqi. Seventh, it accounts for 43.41 percent of the country's gravelized land area. Affected by the natural environment and human factors, the area of gravelized land in Urumqi is still slowly expanding, with an average annual expansion of about 73.44 square kilometers. It is the only province in my country that is still expanding. However, the situation of cultivated land gravelization Still serious. As a key area for the development and construction of China's western development strategy in the 21st century, Xinjiang is the core area of the "Silk Road" economic belt.

The Yili River Valley is one of the important areas for the development and construction of cultivated land in my country. Because of its fragile ecological environment and special geographical location. Therefore, the study has a great impact on the economic development, ecological evolution and environmental changes in Yili area. Yili River Valley is one of the key areas where the country implements land development and improvement projects. Through agricultural development in recent years, most of the high-quality soil resources in the Ili Valley have been turned into farmland, while the undeveloped land in the Ili area generally has a relatively high slope, thin soil, sandy nature, and soil fertility. After being reclaimed, it is more likely to cause land desertification problems such as soil erosion, land gravel, and soil salinization. According to the research results, in the past 20 years, while the area of cultivated land in Yili area is relatively large, the saline-alkali land and sandy land that has been desertified have also increased significantly, and the phenomenon of water and soil erosion in some areas has also increased.

2. The Status Quo of Desertification in Yili Area

Surrounded by high mountains far away from the sea, Yili area still has a certain arid climate, which is a continental climate with a cold temperate zone of 0.5 arid. However, due to less rainfall and fragile natural environment, it has become one of the most serious desertification areas in Xinjiang. Through agricultural development in recent years, the Yili River Valley has a relatively good agricultural farming environment, and all the Xiongwu area has been turned into farmland. However, due to the undeveloped land in the Yili area, it generally has a relatively high slope, thin soil, sandy nature, and Low soil fertility and other characteristics can easily cause land degradation problems such as soil erosion, land gravel and land salinization after development. The degraded area of its natural pastures is 2,210,700 hm², accounting for 64.65% of the total natural pastures in the Yili Valley. These are the hazards brought about by desertification.

3. The Party and the State Attach Great Importance to Desertification Control

For a long time, the Party Central Committee and the State Council have always attached great importance to the cause of sand prevention and control in Xinjiang. In Xinjiang, they have successively implemented the construction of the three-north shelterbelt system, returning farmland to forest and grass, sand control and sand control around the Tarim Basin, returning grazing to grass, water and soil. Some important ecological construction projects and projects such as maintenance, national sand prevention and control demonstration park, and sandy land closure protection area. Especially since the 18th National Congress of the Communist Party of China, as my country has continuously strengthened the protection of sand prevention and control and closed environmental protection, the cause of sand prevention and control in Xinjiang has made significant progress. Significant improvement and good momentum of rapid social and economic development. The majority of Chinese sons and daughters will adhere to the principle of man's determination to conquer nature, with the spirit of long-term success and not being afraid of difficulties, innovate the practice of desert control, seek greenness and wealth in the yellow sand, and continue to write green legends in the land of China.

During the "14th Five-Year Plan" period, our country has entered a new journey of building a socialist modern China in an all-round way, and the first five years for our country to develop in an all-round way towards the great goal of the second millennium. The most critical five years of Xinjiang's development strategy. The whole Xinjiang is unswervingly guided by Xi Jinping's thought on the rule of law in the new era of party governance, implement Xi Jinping's thought on the rule of law and new ecological civilization construction, comprehensively and firmly establish the fundamental idea that green water and lush mountains are the scientific judgment of golden mountains, and fully and accurately implement the new The era Party Central Committee's Xinjiang governance work strategy firmly grasps the basic purpose of stable economic and social development and long-term stability, fully and efficiently promotes the development and construction of a new society, further fights the tough battle of environmental pollution prevention and control, continues to improve the quality of the ecological environment of the people, and strives to build "Beautiful Xinjiang" with blue sky, green water and clear water.

4. Relevant Governance Achievements in Yili Area

4.1. Governance Effectiveness of Yili Area

①. Construct flood diversion enclosure and conservation areas. Flood diversion and conservation projects shall be implemented on the frontiers of wind and sand, Gobi sandy land

and the wastelands of the three beaches (alkaline beach, river beach, and sandy beach), sealing off protected areas, repairing the growing natural desert vegetation mainly including *Populus euphratica* and red willow, consolidating and Expand the oasis. At the same time, it forms the first protective barrier to protect the farmland on the southern edge, thus effectively preventing the sand from migrating southward.

②. Build a large ring oasis windbreak and sand fixation system at the same time. Around the oasis and at the connection with the desert, establish a windbreak and sand-fixing system with trees, shrubs and grasses, strip nets, multi-type afforestation, and multi-type organic use. The planned primary forest area is 600km (300km of 50-100m wide primary forest has been completed). At the same time, a 10-15 km long sandy vegetation protection belt will be built on the outside of the primary forest belt. And formed a second green barrier with a windbreak and sand-fixing dry forest belt inside and a grass-shrub protection belt outside.

③. A farmland shelterbelt network with narrow forest belts and small grids has been formed. On the more than 1,000 strip fields in the southern margin (a strip field is 150-250 mu), a standardized farmland protection forest network has been built.

④. After updating the original shelterbelt base, plant one or two rows of economic trees, such as walnuts, apricots, almonds, red dates, etc., which can increase the benefits of the economic forest belt. Or choose to build a grape corridor on the field mechanized channel at the southernmost edge of the farmland forest network.

4.2. Restoration of Ecological Environment in Yili Area

Since the "14th Five-Year Plan", the Zhilin and Grassland Department of Ili has won 10 wetland protection and restoration projects in the Ili River Basin, with a total investment of 62.34 million yuan. After the project is fully completed, more than 10,000 mu of degraded wetlands will be restored, and the land will be desertified and shrunk. The problems of degradation and degradation have been effectively curbed, and the biodiversity of wetlands has been effectively restored. At the same time, through the further improvement of wetland management and protection infrastructure and equipment, the ability of wetland management and protection has been strengthened. In recent years, Ili Prefecture has increased the intensity of wetland protection and restoration, and the land desertification in the Ili River Basin has improved, and the wetland ecosystem has been greatly improved.

4.3. Mitigation of Desertification Degree

The Xinjiang region insists on equal emphasis on the governance and utilization of natural resources, closely links desertification prevention and control with poverty alleviation and development, actively coordinates the implementation of comprehensive management of water, forest, field, lake and grass systems, vigorously promotes advanced technologies for desertification prevention and control, and continuously explores desertification control. The new method of desertification, continuous promotion of desertification and comprehensive control of desertification, continuous net reduction of desertification and sandification area, significant reduction of the degree of damage to desertification and sandification, and significant progress in sand prevention, desert control, and rational use of sand have been made. In terms of prevention and control measures, the Xinjiang government has gradually increased the management of closed and protected areas of desert vegetation. At present, a total of 43 closed and protected areas have been set up in the whole region, with an effective area of more than 8.09 million trees. At the same time, the grassland-based livestock policy was comprehensively implemented, a total of 150 million mu of grassland was banned from grazing, and the number of grassland and livestock was balanced by 540.9 million mu, and the majority of farmers and herdsmen were gradually changed in the way of raising livestock through subsidies and incentives; at the same time Actively innovate the rural comprehensive

management model, demonstrate and popularize agricultural innovation technologies such as diverting floods and dropping seeds, Haloxylon inoculation with Cistanche, no-irrigation afforestation, and engineering sand control; organize and implement the construction of a national desertification land comprehensive management project. There are nine desert parks, with a total of 27 parks, with a planned total area of 2.879 million mu, and a total of 3.304 million mu of artificial afforestation and 4.16787 million mu of closed mountains (sand) for afforestation in the "Three Norths" area, Converting 4.222 million mu of farmland to forest, 1.015 million mu of farmland to grassland, and 4.8095 million mu of pasture to grassland, effectively slowing down the development trend of gravel land in the country.

According to the data of the Forest and Grassland Resources Management Bureau of the Autonomous Region, as of now, more than 13.26 billion yuan has been invested in various major projects such as desertification prevention and control in Xinjiang. Monitoring data show that the area of desertification and desertification farmland in Xinjiang has achieved "double reduction." ", effectively guaranteeing the sustainable and healthy development of social and economic construction in Xinjiang.

5. Conclusion

The serious aggravation of land gravel in Xinjiang has been difficult to fundamentally change, and land gravel is still the most serious environmental protection problem in Xinjiang. With the strong support of all sectors of society, we will follow the principle of "comprehensive protection, key restoration and governance", insist on adapting measures to local conditions, suitable for greening, and overall consideration of the environmental load-bearing status of resources. If it is appropriate to be barren, it will be barren, fully protect the original desert natural ecosystem and forest and tree resources in severe sandy areas, and increase the protection of severely arid prairie source areas, severe sandstorm source areas, severely gravel prairie areas, and severe soils. The ecological restoration of eroded areas and the treatment of severely gravelized land will use scientific greening ideas throughout the entire process of prevention and management, and coordinate the promotion of environmental protection and restoration of the integration of water, forests, fields, lakes, grasslands and sand across the country.

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