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The Study on Ecological Treatment of Saline Lands to Mitigate the Effects of Climate Change

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The soil water and salt movement is influenced strongly by the frequent droughts, floods and climate change. Additionally, as continued population growth, large-scale reclaiming of arable land and long-term unreasonable irrigation, saline land is increasing at the rate of 1,000,000∼15,000,000 mu each year all over the world. In the tradition management, " drainage as the main " measure has series of problem, which appears greater project, more occupation of land, harmful for water saving and downstream pollution. To response the global climate change, it has become the common understanding, which promote energy-saving and environment protection, reflect the current model, explore the ecological management model. In this paper, we take severe saline land—Lubotan in Shaanxi Province as an example. Through nearly 10 years harnessing practice and observing to meteorology, hydrology, soil indicators of climate, we analyze the influence of climate change to soil salinity movement at different seasons and years, then put forward and apply a new model of saline land harnessing to mitigate the Effects of Climate Change and self-rehabilitate entironment. This model will be changed "drainage" to "storage", through the establishment engineering of " storage as the main ", taken comprehensive measures of " project - biology – agriculture ", we are changing saline land into arable land. Adapted to natural changes of climate, rainfall, irrigation backwater, groundwater level, reduced human intervention to achieve system dynamic equilibrium. During the ten years, the salt of plough horizon has reduced from 0.74% to 0.20%, organic matter has increased from 0.7% to 0.92%, various indicators of soil is begining to go better. At the same time, reduced the water for irrigation, drainage pollution and investment costs. Through the model, reformed severe saline land 18,900 mu, increased new cultivated land 16,500 mu, comprehensive efficient significant, ensured the coordinated development of " water – biology - environment " in the region. Model application and promotion can treat saline-alkali and add cultivated land effectively, at the same time, ease the pressure for urban construction land, promote energy saving and emission reducting and ecological restoration, so we can construct a resource-saving and environment-friendly society, realize sustainable development of the population, resources and environment.