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Land Degradation and Sustainable Development Goal 15 in Northwest China

Yuhao Fan

Introduction

Soil degradation is a common environmental problem, which has a persistent and serious impact on the earth's environment. China's arid northwest has been described as one of the world's most wind-eroded areas. Wind erosion is one of the main causes of soil degradation in northwest China. The temporal and spatial variations of wind erosion were determined in the revised wind erosion equation, and the potential driving factors and influencing factors of soil erosion were studied. The results show that the wind erosion decreased significantly from 1990 to 2013. Government-aided programs to combat desertification, as well as increased precipitation and lower wind speeds, may have contributed to these trends (Jiang et al., 2019).

The purpose of this paper is to analyze the issue of land degradation and what can be done to achieve Sustainable Development Goal 15. In this paper, the methods of land degradation prevention and control in Ningxia Province and Xinjiang Province in China are put forward. Although the Chinese government mainly adopts ecological control measures for soil degradation in northwest China and implements the policy of returning farmland to forest, local governments adopt different ecological control measures due to the actual situation of soil degradation and different local environment.

The Sustainable Development Goals

The United Nations Sustainable Development Goals (SDGs), the 17 global development goals set by the United Nations, will continue to guide global development efforts from 2015 to 2030 after the 2000-2015 Millennium Development Goals (MDGs) expire. On 25 September 2015, the United Nations Sustainable Development Summit was held at its headquarters in New

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York. The 193 member States of the United Nations formally adopted 17 Sustainable Development Goals at the summit. The Sustainable Development Goals (SDGS) aim to address the social, economic and environmental dimensions of development in an integrated way from 2015 to 2030 and shift to a sustainable development path (United Nations General Assembly, 2015).

SDG#15: Life on Land

The purpose of Goal 15, Life on Land, is to halt and reverse land degradation. My article reports on stopping and reversing land degradation as part of Sustainable Development Goal 15. According to the United Nations, about 1.6 billion people depend on forests for their livelihoods. Eighty percent of the animals, plants and insects on land also depend on forests. The world lost 3.3 million hectares of forest between 2010 and 2015 (United Nations, n.d.). 2.6 billion people depend directly on agriculture for their livelihoods, but 52 percent of agricultural land is moderately or severely affected by soil degradation. Arable land is being lost at about 30 to 35 times the historical average rate. Each year, 12 million hectares of land are lost to drought and desertification (23 hectares per minute). Such an area has the potential to produce 20 million tons of grain. Globally, 74% of the poor are directly affected by land degradation (United Nations, n.d.).

Findings and Discussion

Ningxia Province has followed the attitude of the Chinese government in addressing soil degradation and made more appropriate measures according to local conditions. The Ningxia provincial government's policy to combat land degradation is through vegetation restoration and sand stabilization measures. From 2012 to early 2020 land degradation had reversed, vegetation cover had increased by 28 percent and soil quality had improved. In order to make the program

work better, farmers were trained. The implementation of the project has also increased farmers' income. As land degradation is curbed, 3,396 tons of soil will be preserved each year. It also saved the lower Yellow River \$20 billion in sediment cleaning costs. The average number of sandy days per year has dropped from 12.4 to 9.1 (World Bank, 2021).

In Xinjiang Province, soil degradation has become more serious and environmental problems have caused the local government to develop a unique set of treatment plans. Due to its fragile ecological environment and human factors, soil degradation in Xinjiang is very serious. In the 1980s residents spent a quarter of their time in dust storms. As a result, according to the local government's index, continuous and large-scale afforestation has been carried out throughout Xinjiang, and green areas have been continuously expanded. Meanwhile, drip irrigation and the improvement of planting technology have made planting trees in Xinjiang less difficult than before. Since 2012, Xinjiang has brought 28.3756 million mu of desertified soil under control by relying on key national projects such as the Three Northern shelterbelts, returning farmland to forest and grassland, and preventing and controlling desertification around the Tarim Basin, achieving a "double reduction" of desertification and desertified land. The government has found that the desert crop has a stabilizing effect on soil and water. Because of that, ecological control measures also promote the employment of farmers (Yu et al., 2022).

Although Ningxia Province equality measures are not quite the same, they are going in the same direction. Both start with vegetation coverage to regulate factory activities. Moreover, vegetation projects not only effectively stabilize soil and water but also bring employment opportunities to farmers. For example, farmers can plant cash crops that stabilize soil and water, become forest rangers or plant trees. In contrast, the ecological environment of Xinjiang Province is relatively fragile due to the lack of water source. Therefore, the measures of Xinjiang

Province should take into account the water source and pay more attention to the protection of soil.

Conclusion

People living in northwest China used to face a very harsh climate. These problems are caused by serious land degradation. This is the focus of improvement in Sustainable Development Goal 15. Xinjiang and Ningxia provinces are examples of this. They have adopted a series of projects and measures to revegetate degraded land and benefit local farmers. There are some differences in the details, but they are all good ways of starting from a common point of view and adapting to local circumstances.

Soil degradation is still a serious problem. If left unchecked, it could lead to more species extinction and a serious threat to human life. Now, though, the problem of soil degradation in northwest China has been alleviated. Although the natural environment of people living in northwest China has been significantly improved, this is a long-term goal and local governments and people still need to be concerned about soil degradation and reducing the impact of human activities on the land. The plans for soil stabilization still need to be adhered to.

References

- Jiang, C., Liu, J., Zhang, H., Zhang, Z., & Wang, D. (2019). China's progress towards sustainable land degradation control: Insights from the northwest arid region. *Ecological Engineering*, 127, 75-87. <https://doi.org/10.1016/j.ecoleng.2018.11.014>
- United Nations. (n.d.). Goal 15: Why it matters. <https://www.un.org/sustainabledevelopment/whythe-sdgs-matter/>
- United Nations General Assembly. (2015, October 21). *Transforming our world: The 2030 agenda for sustainable development*. United Nations. <https://sdgs.un.org/2030agenda>
- World Bank (2021) Halting desertification in China. *World Bank Results Briefs*. <https://www.worldbank.org/en/results/2021/07/26/halting-desertification-in-china>
- Yu, X., Lei, J., & Gao, X. (2022). An over review of desertification in Xinjiang, Northwest China. *Journal of Arid Land*, 14, 1181–1195. <https://doi.org/10.1007/s40333-022-0077-x>