A Big Earth Data Platform for Three Poles

**Dataset of future land resources suitability in Central Asia (V1.0)**

1、Description

As a typical arid and semi-arid region, Central Asia is subject to varying degrees of hydrothermal constraints and environmental limitations for sustainable land and agricultural development. Analysis and prediction of land use potential is essential to guarantee regional food security and reduce the adverse effects of climate change. This dataset is oriented to the sustainable agricultural development of five Central Asian countries, and the potential evaluation of land use and agroecology from the perspective of land resource development and utilization potential is carried out with dry farming, irrigated agriculture, forestry, and grass-pastoralism as land use targets. The multi-objective land resource development and utilization evaluation factors include climate (heat and water resources), topography, irrigation and water extraction conditions, and soil conditions, which are greater than 10℃ cumulative temperature, average temperature in January, average temperature in July, precipitation, precipitation variation coefficient, elevation, slope, water extraction distance, groundwater level, soil organic matter, soil texture, soil acidity and alkalinity, among which the precipitation variation coefficient is based on The precipitation variation coefficient is based on precipitation conversion, and the slope information is extracted from the elevation data. Variable climate elements including future monthly-scale precipitation, mean temperature, maximum and minimum air temperature, and humidity are derived from bias-corrected and downscaled CMIP6's ACCESS-CM2, BCC-CSM2-MR, CanESM5, CAS-ESM2-0, CESM2-WACCM, EC-Earth3, GFDL-ESM4, KACE-1-0-G multi-model ensemble averaged data with experiments of r1i1p1f1. This data can provide a basis for future land resources development and utilization, agricultural development, etc. in the five Central Asian countries. The data can provide basic data support for the future development and utilization of land resources and agricultural development in five Central Asian countries.

2、Keywords

Theme：Development potential,Land Resources  
Discipline：Human-nature Relationship  
Places：Central Asia, Pan-third pole  
Time：2000-2050

3、Data details

1.Scale：None

2.Projection：

3.Filesize：670.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：56.0 | - |
| west：46.0 | - | east：88.0 |
| - | south：35.0 | - |

5、Time frame:1999-12-31 16:00:00+00:00--2050-12-30 16:00:00+00:00

6、Reference method

References to data:

ZHOU Hongfei, YAO Linlin . Dataset of future land resources suitability in Central Asia (V1.0). A Big Earth Data Platform for Three Poles, doi:10.11888/HumanNat.tpdc.2730322022

References to articles:

Yao, L.L., Zhou\*, H.F., Yan, Y.J., & Su, Y. (2022). Projection of suitability for the typical agro-ecological types in Central Asia under four SSP-RCP scenarios. European Journal of Agronomy, 126599.

7、Supporting project information

Pan-Third Pole Environment Study for a Green Silk Road-A CAS Strategic Priority A Program

8、Data resource provider

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