A Big Earth Data Platform for Three Poles

**High-resolution projection dataset of agroclimatic indicators over Central Asia (1986-2005 and 2031-2050)**

1、Description

To understand the potential impact of projected climate changes on the vulnerable agriculture in Central Asia (CA) in the future, six agroclimatic indicators are calculated based on the 9km-resolution dynamical downscaled results of three different global climate models and a high-resolution projection dataset of agroclimatic indicators over CA is produced. These indicators are growing season length (GSL, days), biologically effective degree days (BEDD, ℃), frost days (FD, days), summer days (SU, days), warm spell duration index (WSDI, days), and tropical nights (TR, days). The periods are 1986-2005 and 2031-2050. The spatial resolution is 0.1°. As all the indicators except WSDI are defined with absolute temperature thresholds and particularly sensitive to the systematics biases in the model data, the quantile mapping (QM) method is applied to correct the simulated temperature. Results show the QM method largely reduces the biases in all the indicators. GSL, SU, WSDI, and TR will significantly increase over CA and FD will decrease. However, changes in BEDD are spatially heterogeneous, with the increases in northern CA and the mountainous areas and decreases in the southern and middle part of the plain areas. This dataset can be applied for assessing the future risks in the local agriculture for climate changes and will be beneficial to adaption and mitigation actions for food security in this region.

2、Keywords

Theme：Other
Discipline：Atmosphere
Places：Central Asia
Time：near-term future

3、Data details

1.Scale：None

2.Projection：WGS84

3.Filesize：132.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：58.0 | - |
| west：36.0 | - | east：94.0 |
| - | south：30.0 | - |

5、Time frame:None--None

6、Reference method

References to data:

QIU Yuan , QIU Yuan. High-resolution projection dataset of agroclimatic indicators over Central Asia (1986-2005 and 2031-2050). A Big Earth Data Platform for Three Poles, doi:10.11888/Atmos.tpdc.2719342022

References to articles:

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7、Supporting project information

Pan-Third Pole Environment Study for a Green Silk Road-A CAS Strategic Priority A Program
The General Project of the National Natural Science Foundation of China

8、Data resource provider

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