Dataset of Desertification Distribution in Mongolia in 2015 and 2020

Data Documentation

I. Dataset/atlas content features

i. Abstract

This dataset includes data on the degree of desertification in Mongolia for 2015 and 2020. This dataset was composed of 2 raster files. They are produced by the Institute of Geographical Sciences and Natural Resources Research of the Chinese Academy of Sciences. Based on Landsat8 data with 30m resolution, a combined geographic partitioning and feature space approach was used to complete the fine extraction of desertification in Mongolia in 2015 and 2020 with Google Earth Engine (GEE) platform, which Albedo-NDVI, Albedo-MSAVI, and Albedo-TGSI feature space models are used in high, medium-low, and very low vegetation cover areas of Mongolia, respectively. The dataset visually reflects the spatial distribution of land with different degrees of desertification in Mongolia, which can provide detailed and reliable data support for the delineation of key areas for desertification control and the formulation of restoration strategies in Mongolia, and is of great significance for the ecological environment and green sustainable development of the China-Mongolia-Russia Economic Corridor.

ii. Elements (content fields)

This dataset was named as “Dataset of Desertification Distribution in Mongolia in 2015 and 2020”, which included 2 data files. There are mainly 1 data name for different years and they are described as table 1.

Table 1 Description of data element content

Data name	Item (field)	Field name in Chinese	Field measure unit	Field code description	Remarks
Dataset of Desertification Distribution in Mongolia in 2015 and 2020					

iii. Temporal cover

2015 and 2020

iv. Spatial cover

41° 35′ -52° 09′ N, 87° 44′ -119° 56′ E.

II. Subject/industry scope of dataset/atlas

i. Subject scope

Earth science, remote sensing, etc.

ii. Industry scope

Geographical information services, remote sensing surveying and mapping services, etc.;

iii. Other classifications (optional)

III. Accuracy of dataset/atlas

i. Time frequency

Five-year period.

ii. Spatial reference, accuracy, and granularity

Spatial reference: GCS_WGS_1984；

Spatial resolution: 250 m.

IV. Dataset/atlas storage management

i. Data quantity

532MB

ii. Type format

TIF

iii. Update management

Irregular updating

V. Quality control of the dataset/atlas

i. Production mode

Using Google Earth Engine (GEE) platform, based on Landsat8 data with 30 m resolution, we used Albedo-NDVI, Albedo-MSAVI, and Albedo-TGSI feature space models in high, medium-low, and very low vegetation cover areas of Mongolia, respectively, using a combination of geographic zoning and feature space. The data set of desertification distribution in Mongolia in 2015 was completed to provide detailed data support for desertification control and ecological environment planning in Mongolia. The data processing environment mainly includes GEE cloud platform, ENVI, ArcGIS.

ii. Data sources (condition selection)

Landsat 8 images

iii. Methods of the data acquisition and processing (condition selection)

Acquisition method: Landsat 8 remote sensing data is a free and open dataset of GEE platform. The format is TIF, the spatial resolution is 30m, and the whole territory of Mongolia.

Processing method: Firstly, based on the GEE platform, the 2015 and 2020 Landsat 8 images were pre-processed by de-clouding, filling, mosaicking, cropping and other pre-processing operations to obtain high quality images of the whole territory of Mongolia in 2015 and 2020. Secondly, the NDVI, Albedo, MSAVI and TGSI feature spatial indexes required for different geographic divisions are also calculated on the GEE platform, and the Albedo-NDVI, Albedo-MSAVI and Albedo-TGSI feature spatial models adapted to different geographic divisions are constructed and calculated for different feature The desertification difference indices of different spatial models were calculated. Arcgis software is used to classify the desertification levels, and finally the desertification distribution under different geographic subdivisions are combined to obtain the desertification distribution dataset of the whole Mongolia in 2015 and 2020.

VI. Sharing and usage method of the dataset/atlas

i. Sharing methods and restrictions

Fully opened sharing

ii. Contact information of the sharing service (condition selection)

Online link address:

Contact Information for Service：

Name: Service group of Disaster Risk Reduction Knowledge Service System of IKCEST

Address：11A, Datun Road, Chaoyang District, Beijing, 100101, China, Institute of Geographic

Sciences and Natural Resources Research, CAS.

Zip Code：100101

E-mail: ikcest-drr@lreis.ac.cn

iii. Conditions and methods of usage

The dataset can be read by ArcGIS and ENVI software.

VII. Intellectual property rights of the dataset/atlas

i. Property rights (optional)

Intellectual property of the dataset belonged to Institute of Geographic Sciences and Natural Resources Research, CAS.

ii. Reference method of the dataset/atlas

Vegetation Phenology Data Set of Mongolia from 2001 to 2019. Disaster Risk Reduction Knowledge Service of International Knowledge Centre for Engineering Sciences and Technology (IKCEST) under the Auspices of UNESCO, 2022.09.30.

iii. Usage contacts of the datasets/atlas

Name: Service group of Disaster Risk Reduction Knowledge Service System of IKCEST

Address：11A, Datun Road, Chaoyang District, Beijing, 100101, China, Institute of Geographic Sciences and Natural Resources Research, CAS.

Zip Code：100101

E-mail: ikcest-drr@lreis.ac.cn

VIII. Others (optional)

In addition to the above, other information must also be explained.

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