

*** Agricultural drought maps of China mainland ***

Authors:G. Wang, M. Kong

Corresponding author: M. Kong

Contact Information:

mykong@nhri.cn

Ministry of Water Resources of People's Republic of China - Nanjing Hydraulic Research Institute

Post Address: 210025 Nanjing China

General Introduction

This dataset contains two agricultural drought maps of China mainland which are modified from the pictures of a readily published Chinese book called China Water Atlas through ArcGIS.

One is the agricultural drought levels map which indicates the drought severity of different counties in China mainland, and it was determined by two indices: drought-related yield loss rate and drought frequency which were calculated from agricultural drought data, precipitation data and inflow data of different counties from 1990 to 2009 and some history drought data before 1990.

The other one is the agricultural drought seasons map of China mainland which shows the most often drought seasons of different counties. And it was determined by the drought frequencies of different seasons of different counties which are derived from China's History Droughts from 1949 to 2000 (Zhang et al., 2008). These maps are made public for publications and for other researchers to use this data in their own work.

The original Chinese maps were collected by G. Wang in Nanjing Hydraulic Research Institute, Ministry of Water Resources of People's Republic of China in 2020.

This research was funded by National Key Research and Development Program of China (Grant numbers 2016YFA0601703, 2016YFC0401005).

Methodological information

The uploaded maps were made through ArcGIS.

Data specific information

The definitions of different agricultural drought levels are listed in the following table:

Table 1 The definitions of different agricultural drought levels

Agricultural drought types	No drought	Mild drought	Moderate drought		Severe drought		Extreme drought
			Low frequency	High frequency	Low frequency	High frequency	
Drought-related yield loss rate	(0, 5%)	[5%,10%)	[10%,20%)		[20%,40%)		[40%,100%]
drought frequency	(20%, 100%]	(20%, 100%]	(20%, 30%]	(30%, 100%]	(20%, 30%]	(30%, 100%]	(20%, 100%]

Drought-related yield loss rate means the portion of drought-related yield loss in the preset

regular yield of a year. And drought frequency means the frequency of each drought types during the selected years . For instance, if no drought years happens most frequently in a region, then the drought type of this region is no drought.

The meanings of different drought seasons are as follows:

Spring drought or autumn drought areas: among all the drought events from 1949 to 2000, the average value of spring drought frequency and autumn drought frequency divided by the absolute value of their difference is less than 0.1;

Spring drought & Summer drought (mainly spring): the frequency of spring drought is the largest and the frequency of spring drought and summer drought happens together is larger than the half of spring drought frequency;

Spring drought: the frequency of spring drought is the largest and none of the former occasions is true.

The meanings of other levels are alike.