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## Data Article

## Long-term climate data description in Ethiopia



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## ABSTRACT

This article presents long-term analyzed rainfall and temperature data obtained from the National Metrological Agency (NMA) of Ethiopia. Using tables and graphic trends of analysis, the article shows the low and declining level of average annual rainfall as well as the high inter-annual fluctuations for 18 weather stations located in different agro-climatic zones of the country. The high variation of annual maximum and minimum temperature has been similarly observed for decades in the stations. Ethiopia's average annual temperature has risen between 1955 and 2015 by 1.65 °C. The country's agricultural production depends heavily on local temperature and rainfall. The evidence is clear that a slight change in such climatic elements negatively affects the food security condition of both producers and consumers. Although data from the Central Statistical Agency (CSA) show that major cereal crop production has increased at the national level, partly due to the increasing application of fertilizers and modern seeds, Ethiopia's food security condition is deteriorating due to global climatic events caused droughts and rain failure. The rate of food price inflation is thus often higher than the general consumer price inflation rate.

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## Specification Table

Subject area	Environmental studies
More specific subject area	Climate change
Type of data	Figures and tables

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How data was acquired	Climate data were obtained following formal application procedure to the authority. Different year agricultural sample survey and the consumer price index data available at the CSA of Ethiopia were used.
Data format	Analyzed
Data source location	18 weather stations: <i>Addis Ababa; Arba Minch; Axum; Bahir Dar; Beshoftu; Combolcha; Debre Markos; Dire Dawa; Gode; Gondar; Gore; Hawassa; Jimma; Mekele; Methara; Neghele; Nekemte; and Robe.</i>
Experimental factors	Data used in this article were obtained from the NMA and CSA of Ethiopia.
Experimental features	Tables and graphic trends of analysis were employed.
Data accessibility	The data are with this article.

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### Value of the data

- Gives information on the changing condition of climatic elements' impact on production and food prices.
  - Can be reproduced by researchers and experts working in the field.
  - Useful to identify vulnerable communities and social groups to the effects of climate change risk for interventions.
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## 1. Data

The figures and tables of rainfall and temperature were analyzed based on the data obtained from 18 weather stations located in different agro-climatic zones of Ethiopia. Fig. 1 is the location map of metrological stations. The declining and low level of average annual rainfall overtime as well as high inter-annual fluctuation for 18 weather stations are presented in Figs. 2–20. Information on temperature are presented in Tables. Table 1 shows the average annual temperature of Ethiopia (1980–2016). The mean annual temperature of Ethiopia is presented in Table 2. The following tables (Tables 3–19) present the variation of mean annual maximum and minimum temperatures of the weather stations. In Figs. 21 and 22 area cultivated under improved seeds, local seeds and use of fertilizers and types of fertilizers for cereals crop only are presented. The last two Figs. 23 and 24 demonstrate the progressive increase in agricultural production such as cereals, oil seeds and pulses and the consumer price index respectively.

## 2. Methods and materials

The unprocessed long-term elements of climate such as rainfall and temperature data obtain from the National Metrological Agency (NMA) of Ethiopia were analyzed using tables and graphic trends of analysis. Annual rainfall and mean annual temperature of 18 representative weather stations were computed in order to calculate the country's mean annual rainfall and the inter-annual fluctuations and average annual temperature. The article used different year agricultural sample survey reports of Central Statistical Agency (CSA) of Ethiopia. Based on the data, the trends of major cereals crop production, area cultivated under improved seeds, local seeds, types of fertilizer and applied areas and the consumer price index in Ethiopia were calculated and presented. The author used Microsoft EXCEL software to analyze the data and present the result in graphs and tables.

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