



# Crop yields under historical and non-warming counterfactual climate conditions

## 1. IDENTIFICATION INFORMATION

Name	Crop yields under historical and non-warming counterfactual climate conditions
DOI	doi:10.20783/DIAS.545 [ <a href="https://doi.org/10.20783/DIAS.545">https://doi.org/10.20783/DIAS.545</a> ]
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## 2. CONTACT

### 2.1 CONTACT on DATASET

Name	Toshichika Iizumi
Organization	Institute for Agro-Environmental Sciences, National Agriculture and Food Research Organization
Address	3-1-3 Kannondai, Tsukuba, Ibaraki, 305-8604, Japan
TEL	029-838-8201
E-mail	iizumi.toshichika765@naro.go.jp

### 2.2 CONTACT on PROJECT

#### 2.2.1 Data Integration and Analysis System

Name	DIAS Office
Organization	Japan Agency for Marine-Earth Science and Technology
Address	3173-25, Showa-Cho, Kanazawa-ku, Yokohama-shi, Kanagawa, 236-0001, Japan
E-mail	dias-office@diasjp.net

## 3. DOCUMENT AUTHOR

Name	Toshichika Iizumi
Organization	Institute for Agro-Environmental Sciences, National Agriculture and Food Research Organization
E-mail	iizumi.toshichika765@naro.go.jp

## 4. DATASET CREATOR

Name	Toshichika Iizumi
Organization	Institute for Agro-Environmental Sciences, National Agriculture and Food Research Organization
E-mail	iizumi.toshichika765@naro.go.jp

## 5. DATE OF THIS DOCUMENT

2025-05-14

## 6. DATE OF DATASET

publication : 2018-07-23

## 7. DATASET OVERVIEW

### 7.1 Abstract

The grid-cell yield data available in this dataset are estimated using the global gridded crop model CYGMA and the assumptions on historical and non-warming climate conditions. The CO<sub>2</sub> fertilization is considered when simulating yields under the historical climate condition. The climate inputs to the CYGMA model were derived from the historical and non-warming counterfactual climate simulations using the MRI-AGCM3.2 and used after bias-correction. The data for maize, rice, wheat and soybean for the period 1961-2010 are available at the 0.5-degree resolution. The unit of yield data is tonnes per hectare. Only spring wheat is considered. The yield data are available for each of irrigated and rainfed conditions. Also the yield data are available for areas where currently cultivation is not conducted. This allows users to calculate national average yield using user's own irrigation scenarios.

### 7.2 Topic Category(ISO19139)

farming

### 7.3 Temporal Extent

Begin Date	1961-01-01
End Date	2010-01-01
Temporal Characteristics	Annual

### 7.4 Geographic Bounding Box

North latitude bound	90
West longitude bound	-180
Eastbound longitude	180
South latitude bound	-90

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## 7.5 Grid

Dimension Name	Dimension Size (slice number of the dimension)	Resolution Unit
column	720	0.5 (deg)
row	360	0.5 (deg)
vertical	1	1 (level)

## 7.6 Geographic Description

## 7.7 Keywords

### 7.7.1 Keywords on Dataset

Keyword Type	Keyword	Keyword thesaurus Name
theme	Agriculture > Agricultural Plant Science > Crop/Plant Yields	GCMD_science

### 7.7.2 Keywords on Project

#### 7.7.2.1 Data Integration and Analysis System

Keyword Type	Keyword	Keyword thesaurus Name
theme	DIAS &gt; Data Integration and Analysis System	No_Dictionary

## 7.8 Online Resource

File download : <https://data.diasjp.net/dl/storages/filelist/dataset:544>

## 7.9 Data Environmental Information

## 7.10 Distribution Information

name	version	specification
NetCDF	4	

# 8. DATA PROCESSING

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## 8.1 Data Processing (1)

### 8.1.1 General Explanation of the data producer's knowledge about the lineage of a dataset

Yields under irrigated and rainfed conditions were computed and then averaged using the extent of irrigated and rainfed areas as the weights.

### 8.1.2 Data Source

Data Source Citation Name	Description of derived parameters and processing techniques used
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## 9. DATA REMARKS

## 10. DATA POLICY

### 10.1 Data Policy by the Data Provider

If data are used, the relevant reference(s) or dataset DOI should be cited. For the reference(s), see the References section.

### 10.2 Data Policy by the Project

#### 10.2.1 Data Integration and Analysis System

If data provider does not have data policy, DIAS Terms of Service (<https://diasjp.net/en/terms/>) and DIAS Privacy Policy (<https://diasjp.net/en/privacy/>) apply.

If there is a conflict between DIAS Terms of Service and data provider's policy, the data provider's policy shall prevail.

## 11. LICENSE



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## 12. DATA SOURCE ACKNOWLEDGEMENT

### 12.1 Acknowledge the Data Provider

No acknowledgement is required.

### 12.2 Acknowledge the Project

#### 12.2.1 Data Integration and Analysis System

If you plan to use this dataset for a conference presentation, paper, journal article, or report etc., please include acknowledgments referred to following examples. If the data provider describes examples of acknowledgments, include them as well.

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” In this study, [Name of Dataset] provided by [Name of Data Provider] was utilized. This dataset was also collected and provided under the Data Integration and Analysis System (DIAS), which was developed and operated by a project supported by the Ministry of Education, Culture, Sports, Science and Technology. ”

## 13. REFERENCES

Iizumi, T., Shiogama, H., Imada, Y., Hanasaki, N., Takikawa, H., Nishimori, M. (2018) Crop production losses associated with anthropogenic climate change for 1981–2010 compared with preindustrial levels. *International Journal of Climatology*, 38, 5405–5417. <https://doi.org/10.1002/joc.5818>