Future scenarios data on crop yields

1. IDENTIFICATION INFORMATION

Name	Future scenarios data on crop yields
DOI	doi:10.20783/DIAS.529 [https://doi.org/10.20783/DIAS.529]
Metadata Identifier	I17SR_crop_yields20250514143822-DIAS20221121113753-en

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 : 2017-08-10

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 future climate and socioeconomy. The Shared Socioeconomic Pathways (SSP) 1, 2 and 3 are used as the assumptions on socioeconomy. Four different Representative Concentration Pathways (RCP) are used to account for the CO2 fertilization effect on yields. Future climate conditions are based on the bias-corrected CMIP5 GCM outputs. The data for maize, rice, wheat and soybean for the period 1961-2100 are available at the 0.5-degree resolution. Only spring wheat is consisdered. 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	2100-01-01
Temporal Characteristics	Annual

7.4 Geographic Bounding Box

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

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 > Data Integration and Analysis System	No_Dictionary

7.8 Online Resource

File download from DIAS : https://data.diasjp.net/dl/storages/filelist/dataset:529

7.9 Data Environmental Information

7.10 Distribution Information

name	version	specification
NetCDF	4	

8. DATA PROCESSING

8.1 Data Processing (1)

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

The I17SR crop yield dataset are generated by using the global gridded crop model CYGMA and high-yielding technology under SSP and bias-corrected CMIP5 GCM outputs.

8.1.2 Data Source

Data Source Citation Name	Description of derived parameters and processing techniques used

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

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.

" 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., Furuya, J., Shen, Z., Kim, W., Okada, M., Fujimori, S., Hasegawa, T., Nishimori, M. (2017) Responses of crop yield growth to global temperature and socioeconomic changes. Scientific Reports, 7, 7800. https://doi.org/10.1038/s41598-017-08214-4