Global dataset of historical yield of major crops (version 1.2)

1. IDENTIFICATION INFORMATION

Name	Global dataset of historical yield of major crops (version 1.2)
Edition	version 1.2
DOI	doi:10.20783/DIAS.528 [https://doi.org/10.20783/DIAS.528]
Metadata Identifier	GDHY_v1_220250514144810-DIAS20221121113753-en

2. CONTACT

2.1 CONTACT on DATASET

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2.2 CONTACT on PROJECT

2.2.1 Data Integration and Analysis System

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5. DATE OF THIS DOCUMENT

2025-05-14

6. DATE OF DATASET

creation : 2017-11-07

7. DATASET OVERVIEW

7.1 Abstract

The Global Dataset of Historical Yield (GDHY_v1_2) offers annual time series data of 0.5-degree grid-cell yield estimates of major crops worldwide. The crops considered in this dataset are maize, rice, wheat and soybean. The unit of yield data is t/ha. The grd-cell yield data were estimated using the satellite-derived crop-specific vegetation index and FAO-reported country yield statistics. Maize and rice have the data for each of two growing seasons (major/secondary). "Winter" and "spring" are used as the growing season categories for wheat. Only "major" growing season is available for soybean. These growing season categories are based on Sacks et al. (2010, DOI: 10.1111/j.1466-8238.2010.00551.x). The geographic distribution of harvested area changes with time in reality, but we used the time-constant data in 2000 (Monfreda et al., 208, doi:10.1029/2007GB002947). Many missing values are found in the first (1981) and last (2011) years because grid-cell yields are not estimated for these years when growing season spans two calendar years.

An updated version of this dataset is available at:

https://doi.org/10.20783/DIAS.564

7.2 Topic Category(ISO19139)

farming

7.3 Temporal Extent

Begin Date	1981-01-01
End Date	2011-01-01
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:528

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 grid-cell yield estimates available in this dataset are a hybrid of satellite-derived crop-specific vegetation index and FAO-reported country yield statistics.

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., Yokozawa, M., Sakurai, G., Travasso, M. I., Romanenkov, V., Oettli, P., Newby, T., Ishigooka, Y., Furuya, J. (2014) Historical changes in global yields: major cereal and legume crops from 1982 to 2006. Global Ecology and Biogeography, 23, 346 357. https://doi.org/10.1111/geb.12120

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