



Coordinated Regional Climate Downscaling Experiment

The CORDEX vision is to advance and coordinate the science and application of regional climate downscaling through global partnerships.

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CORDEX data on ESGF

To find a table showing the CORDEX data available on the ESGF [click here](#).

You can also have a look at [GCM-RCM overview](#) for an overview of what simulations are available and how.

Domain	Model	Driving Model
WAS-44	HadRM3P	ECMWF-ERAINT
WAS-44	RCA4	CCCma-CanESM2
WAS-44	RCA4	CNRM-CERFACS-CNRM-CM5
WAS-44	RCA4	CSIRO-QCCCE-CSIRO-Mk3-6-0
WAS-44	RCA4	ECMWF-ERAINT
WAS-44	RCA4	ICHEC-EC-EARTH
WAS-44	RCA4	IPSL-IPSL-CM5A-MR
WAS-44	RCA4	MIROC-MIROC5
WAS-44	RCA4	MOHC-HadGEM2-ES
WAS-44	RCA4	MPI-M-MPI-ESM-LR
WAS-44	RCA4	NCC-NorESM1-M
WAS-44	RCA4	NOAA-GFDL-GFDL-ESM2M
WAS-44	REMO2009	MPI-M-MPI-ESM-LR
WAS-44	RegCM4-4	CCCma-CanESM2
WAS-44	RegCM4-4	CNRM-CERFACS-CNRM-CM5
WAS-44	RegCM4-4	CSIRO-QCCCE-CSIRO-Mk3-6-0
WAS-44	RegCM4-4	ECMWF-ERAINT
WAS-44	RegCM4-4	IPSL-IPSL-CM5A-LR
WAS-44	RegCM4-4	MPI-M-MPI-ESM-MR
WAS-44	RegCM4-4	NOAA-GFDL-GFDL-ESM2M

CORDEX DATA ACCESS

Data access

- How to access the data
- ESGF
- Impact Portals
- Regional Data Portals
- Individual institutes
- CORDEX RCM List
- CORDEX data on ESGF
- Bias-adjusted RCM data

Training sessions will be accessing these CORDEX South Asia domain (WAS-44) data available on ESGF CORDEX archive

CCCR-IITM ESGF Data Extraction Tool will be used to subset and select the CORDEX data over your region, and download the extracted data on your computer

1: Go to the website of IITM Pune (<http://cccr.tropmet.res.in/home/index.jsp>)



Centre for Climate Change Research

Indian Institute of Tropical Meteorology, Pune, India

1 <http://cccr.tropmet.res.in/home/index.jsp>

The screenshot shows the website's navigation bar with a green background. The 'Climate Data Portal' menu item is highlighted with a red circle '2'. A dropdown menu is open, showing 'Climate Data Portal', 'FTP Data Access', 'ESGF Data Node', and 'Data Extraction Tool'. The 'Data Extraction Tool' item is highlighted with a red circle '3' and a mouse cursor. The background of the website features a large photograph of a modern building with a sign that reads 'HPCC'.

2: Click on 'Climate Data Portal'

3: Click on Data extraction Tool

1: Now, go to IITM Pune website [http://cccr.tropmet.res.in/home/data_cccrdx.jsp] and click 'Users having ESGF OpenID, 'click here' link



- Overview
- Data Extraction Tools
- Climate Scenarios

Data Extraction Tool

This is a trial version of a Web Interface based on python under development by CCCR-IITM for users to explore and remotely access subsets (some variables in a particular region for a particular time slice) of authorised datasets available on ESGF in the framework of CORDEX South Asia simulations, and download the selected subset in CSV, Text or NetCDF data formats.

Data Extraction Tool Architecture



This data extraction tool needs access to ESGF with an Openid and CORDEX project registration.

Users having ESGF Openid, [click here](#) **1**

You will be taken to a new page where you can keep the ESGF OpenID link that you received during the registration:



Data Extraction Tool

ESGF OpenID **1**

ESGF Password **2**

Login

1: Keep your ESGF OpenID here

2: Enter your password here

You will be taken to a page from where you can download CORDEX datasets:

Example for selecting a dataset from ESGF CORDEX South Asia data archive

1. Select Domain: **WAS-44**
Institute: **SMHI**
RCM Model: **RCA4**
Driving Model: **CNRM-CERFACS-CNRM-CM5**
Experiment: **historical**
Variable: **tas**
Time Frequency: **day**

2. Click "Search"

3. Confirm selected Search Constraints

4. Select Time Periods

The screenshot displays the ESGF Data Extraction Tool interface. On the left, a search form is shown with a 'search' button highlighted by a red arrow and a red circle with the number '2'. The search constraints are listed as: Project, Domain, Institute, RCM Model, Driving Model, Experiment, Variable, and Time Frequency, each with a checkbox. A red arrow points to the 'Institute' checkbox, which is marked with a red circle and the number '1'. Below the search form, there are options to 'Select all' and four time period ranges: '1951-01-01 to 1955-12-31', '1956-01-01 to 1960-12-31', and '1961-01-01 to 1965-12-31'. A red circle with the number '4' is placed next to the first time period range. The main area of the tool shows the search constraints: 'WAS-44 / SMHI / RCA4 / historical / CNRM-CERFACS-CNRM-CM5 / day / tas'. A red circle with the number '3' is placed above this text. Below the constraints, there are radio buttons for 'Subset' (selected) and 'Single Grid Point'. The 'Subset' section includes input fields for 'Northern Lat - Deg North' (40.894763), 'Western Lon-Deg East' (26.167067), 'Eastern Lat-Deg East' (115.53118), and 'Southern Lat-Deg North' (-12.96647). A 'subset' button is located below these fields. An 'Export-Data' button is at the bottom left. On the right, a map of South Asia is shown in 'Satellite' view, with a black rectangle indicating the selected geographic area. A red circle with the number '4' is placed above the map. The map includes a 'Map' button, a 'Satellite' button, a zoom in (+) button, a zoom out (-) button, and a person icon. The Google logo is visible at the bottom left of the map, and the text 'Imagery ©2020 NASA, TerraMetrics' is at the bottom right.

Example for subsetting the selected dataset over Kathmandu region and downloading from ESGF CORDEX South Asia data archive

1. Input Longitude & Latitude coordinates: 85.0°E-86.5°E; 27.0°N-28.5°N
2. Click "subset" & confirm the selected region on map
3. Click "Export Data"
4. Please wait for the data file to be processed & right click on the file name to download

Data Extraction Tool

Search Constraints: **WAS-44 / SMHI / RCA4 / historical / CNRM-CERFACS-CNRM-CM5 / day / tas**

Subset
 Single Grid Point

Northern Lat - Deg North: 28.5
Western Lon-Deg East: 85
Eastern Lat-Deg East: 86.5
Southern Lat-Deg North: 27

subset
Export-Data

Map Satellite

Rectangle moved.
New north-east corner: 28.5, 86.5
New south-west corner: 27, 85

Google
Imagery ©2020 NASA, TerraMetrics

Please wait. It will take few minutes...

PROCESSING

4

Download Files

jsanjay65_tas_WAS-44_CNRM-CERFACS-CNRM-CM5_RCA4_historical_day_28N-86E_27N-85E_19510101-20051231.nc file

Example for selecting a dataset from ESGF CORDEX South Asia data archive

1. Select Domain: **WAS-44**
Institute: **IITM**
RCM Model: **RegCM4-4**
Driving Model: **CCCma-CanESM2**
Experiment: **rcp85**
Variable: **pr**
Time Frequency: **day**

2. Click "Search"

3. Confirm selected Search Constraints

4. Select Time Periods

The screenshot displays the ESGF Data Extraction Tool interface. On the left, a search form is shown with a green header 'search'. The form includes checkboxes for 'Project', 'Domain', 'Institute', 'RCM Model', 'Driving Model', 'Experiment', 'Variable', and 'Time Frequency'. A red circle with the number '1' is placed over the 'RCM Model' checkbox, and a red circle with the number '2' is placed over the 'Search' button. Below the search form, there are checkboxes for 'files (19)', 'Select all', and three time period ranges: '2006-01-01 to 2010-12-31', '2011-01-01 to 2015-12-31', and '2016-01-01 to 2020-12-31'. A red circle with the number '4' is placed over the '2011-01-01 to 2015-12-31' checkbox.

The main area of the tool is titled 'Data Extraction Tool' in a green box. Below this, the search constraints are listed: 'Search Constraints: WAS-44 / IITM / RegCM4-4 / rcp85 / CCCma-CanESM2 / day / pr'. A red circle with the number '3' is placed over this text. The interface is divided into two main sections: a form on the left and a map on the right.

The form section includes radio buttons for 'Subset' (selected) and 'Single Grid Point'. It has input fields for 'Northern Lat - Deg North' (42.424869), 'Western Lon- Deg East' (20.792608), 'Eastern Lat- Deg East' (138.09681), and 'Southern Lat-Deg North' (-25.226146). A 'subset' button is located below these fields, and an 'Export-Data' button is at the bottom left of the form.

The map section shows a satellite view of South Asia with a black rectangular bounding box overlaid. The map includes a 'Map' and 'Satellite' tab, a 'Google' logo, and a 'Terms of Use' link. A red circle with the number '3' is also placed over the top of the map area.

Example for subsetting the selected dataset over Kathmandu region and downloading from ESGF CORDEX South Asia data archive

1. Input Longitude & Latitude coordinates: 85.0°E-86.5°E; 27.0°N-28.5°N
2. Click "subset" & confirm the selected region on map
3. Click "Export Data"
4. Please wait for the data file to be processed & right click on the file name to download

Data Extraction Tool

Search Constraints: WAS-44 / IITM / RegCM4-4 / rcp85 / CCCma-CanESM2 / day / pr

search

- Project
- Domain
- Institute
- RCM Model
- Driving Model
- Experiment
- Variable
- Time Frequency

files (19)

- Select all
- 2006-01-01 to 2010-12-31
- 2011-01-01 to 2015-12 Please wait. It will take few minutes...
- 2016-01-01 to 2020-12

Subset

Subset

Single Grid Point

Northern Lat - Deg North: 28.5

Western Lon - Deg East: 85

Eastern Lat - Deg East: 86.5

Southern Lat - Deg North: 27

Map **Satellite**

Rectangle moved.
New north-east corner: 28.5, 86.5
New south-west corner: 27, 85

Google

Imagery ©2020 NASA, TerraMetrics

Download Files

jsanjay65_pr_WAS-44_CCCma-CanESM2_RegCM4-4_rcp85_day_28N-86E_27N-85E_20060101-20991231.nc file

PROCESSING

Exercise: Using the ESGF Data Extraction Tool select each of the 16 CORDEX South Asia RCM simulations, subset over your region, and download:

CORDEX South Asia RCM	RCM description	Contributing CORDEX modelling center	Driving CMIP5 AOGCM (see details at https://verc.enes.org/data/enes-model-data/cmip5/resolution)	Contributing CMIP5 modelling center
IITM-RegCM4 (6 members)	The Abdus Salam International Centre for Theoretical Physics (ICTP) Regional Climatic Model Version 4 (RegCM4; Giorgi et al. 2012)	Centre for Climate Change Research (CCCR), Indian Institute of Tropical Meteorology (IITM), India	CCCma-CanESM2	Canadian Centre for Climate Modelling and Analysis (CCCma), Canada
			NOAA-GFDL-GFDL-ESM2M	National Oceanic and Atmospheric Administration (NOAA), Geophysical Fluid Dynamics Laboratory (GFDL), USA
			CNRM-CM5	Centre National de Recherches Meteorologiques (CNRM), France
			MPI-ESM-MR	Max Planck Institute for Meteorology (MPI-M), Germany
			IPSL-CM5A-LR	Institut Pierre-Simon Laplace (IPSL), France
			CSIRO-Mk3.6	Commonwealth Scientific and Industrial Research Organization (CSIRO), Australia
SMHI-RCA4 (10 members)	Rossby Centre Regional Atmospheric Model Version 4 (RCA4; Samuelsson et al. 2011)	Rossby Centre, Swedish Meteorological and Hydrological Institute (SMHI), Sweden	ICHEC-EC-EARTH	Irish Centre for High-End Computing (ICHEC), European Consortium (EC)
			MIROC-MIROC5	Model for Interdisciplinary Research On Climate (MIROC), Japan Agency for Marine-Earth Sci. & Tech., Japan
			NCC-NorESM1	Norwegian Climate Centre (NCC), Norway
			MOHC-HadGEM2-ES	Met Office Hadley Centre for Climate Change (MOHC), United Kingdom
			CCCma-CanESM2	CCCma, Canada
			NOAA-GFDL-GFDL-ESM2M	NOAA, GFDL, USA
			CNRM-CM5	CNRM, France
			MPI-ESM-LR	MPI-M, Germany
			IPSL-CM5A-MR	IPSL, France
			CSIRO-Mk3.6	CSIRO, Australia

Daily Variables:

- **tas** (surface air temperature)
- **pr** (precipitation rate)

RCM Ensemble Members:

- **IITM-RegCM4 (6)**
- **SMHI-RCA4 (10)**

Experiments & Time Periods:

- **Historical (1951 to 2005)**
- **RCP4.5 Scenario (2006 to 2099)**
- **RCP8.5 Scenario (2006 to 2099)**

--- End of documentation ---

Extract data from other capital cities

Location of the 3x3 grids for the analysis for capital cities given here

Please use these lat lon to extract data from your capital cities

