ICIMOD

Santosh Nepal

Climate and Hydrology Group Lead, ICIMOD Training Coordinator 12 October 2020 Regional climate change projections:

Climate change analysis using CORDEX regional climate models over South Asia

WORKSHOP, TRAINING

Regional climate change projections: Climate change analysis using CORDEX regional climate models over South Asia

Programme overview

First training on 'Regional climate change projections'

Follow up trainings in 2020 and 2021 as a part of the **Institutional capacity building**

Focus on generating climate data and information Step towards

- Climate change impact assessment
- Understanding sectoral impacts
- Designing adaptation strategies





"If you can't measure it, you can't manage it" Peter Drucker

Why climate change data is important

It tells us future climate projections

To understand change in major climatic parameters (heat waves)

To understand impacts on different sectors (floods, drought)

To design adaptation plans against climate change impacts

Scientific knowledgebase



Programme agenda

Objective: To build underpinning knowledge and skills for analysing regional climate change projections using CORDEX regional climate model simulations

Date	Agenda	
Day 0, October	Setting up for the virtual training	
Day 1, 12 October	Opening and key presentations	
Day 2, 13 October	Climate change science and projections	
Day 3, 14 October	Introduction to CORDEX datasets and extraction	
Day 4, 19 October	CORDEX data analysis using R – Historic data analysis	
Day 5, 20 October	CORDEX data analysis using R – Future data analysis	
Day 6, 21 October	Regional climate data portal Reflection of the training and way forward	

Global Climate Model

Regional Climate Model (EURO-CORDEX)

Present challenges of climate change assessment

Global climate models – coarse resolution

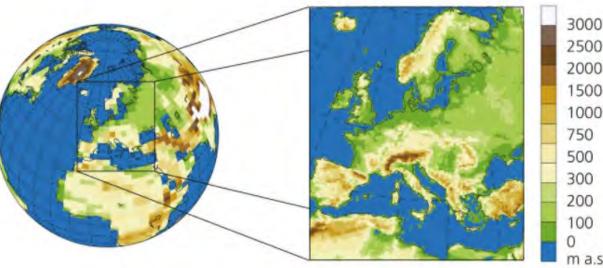
Downscaling generates high resolution climate datasets for impact assessment

Climate datasets are huge in size and require high computational facilities

Lack of datasets readily available for impact assessment

Lack of required skill and capacity





Challenges..

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4 climate variables (pr, tas, tasmax, tasmin)

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What you expect from this training

Climate change science and projections

Download the CORDEX data of your area of interest (Latitude and longitude)

Analyze data using **R** programming language

Analyse the data for **historic** period

Analyse the data for the **future** periods

Understand the change in the future periods

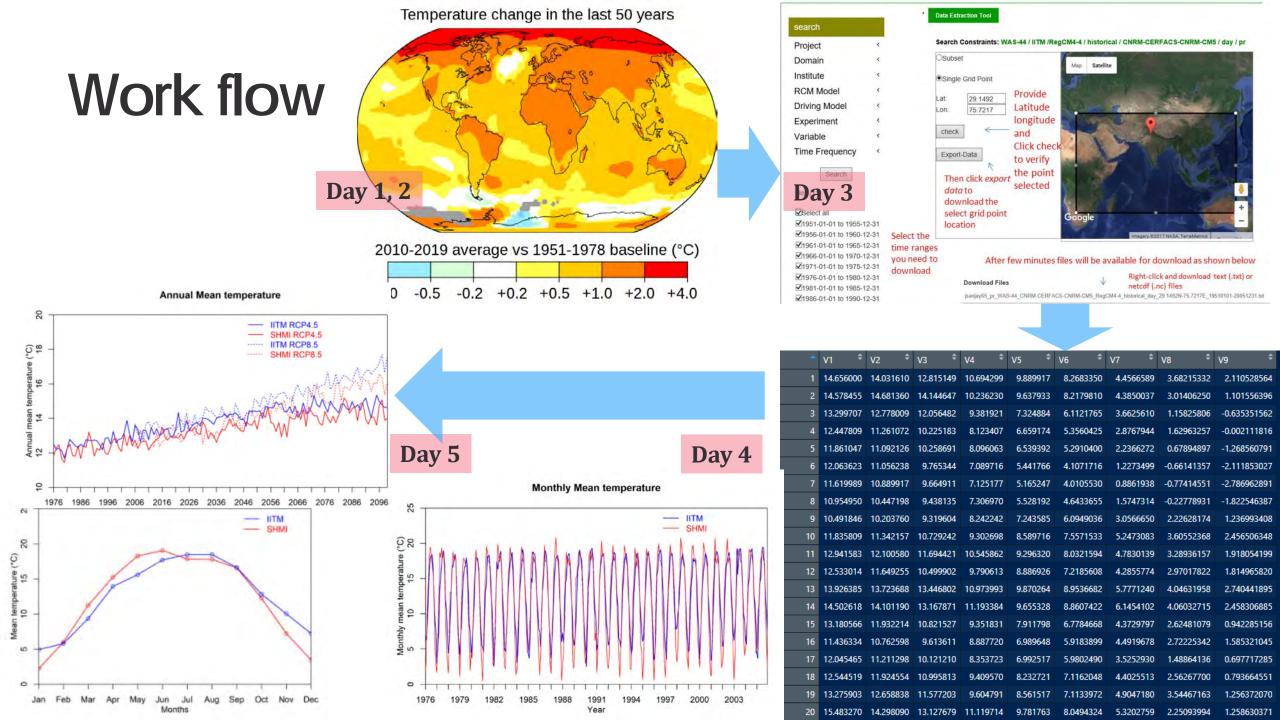
Temporal aggregation (monthly, yearly)

Statistical trend analysis (Mann Kendall and Sen slope)

Plot relevant maps

The script can be used for **other similar analysis** with a slight modification





Co-creating knowledgebase





Learning together

Working together

Building together

Institutional capacity building

Troubleshooting and follow up

Morning session: we will go through the session and record videos for different session .

Break : 2 hours extended break ; please try the exercise based on video tutorial and online documentation

Afternoon session: Follow up with technical exercise and solving the problem

The documentation and video tutorial would serve to continue the exercise with your own data

We would be happy to provide support even after the training

Training Coordinator



ICIMOD

Met Office

IITM- Pune



Resource persons ICIMOD



Saurav Pradhananga

Ghulam Rasul

Joseph Daron

Met Office

IITM - Pune

Santosh Nepal







Mir Abdul Matir











Arun Bhakta Shrestha

























Sudip Pradhan



Sandip Ingle

J Sanjay

Cathryn Fox



















Katy Richardson

Mahesh Ramadoss







Let's protect the pulse

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