SPECIAL PROJECT PROGRESS REPORT

Progress Reports should be 2 to 10 pages in length, depending on importance of the project. All the following mandatory information needs to be provided.

Reporting year ……2019……

Project Title: HARMONIE Climate (HCLIM) Regional Downscaling Simulations for Ireland

Computer Project Account: spiemcgo……

Principal Investigator(s): ……Jonathan McGovern……

……Paul Nolan……

Affiliation: Met Eireann……

Name of ECMWF scientist(s) collaborating to the project (if applicable) Paul Nolan ICHEC

Laura Zubiate Met Eireann

Start date of the project: ……2019……

Expected end date: ……2021……

Computer resources allocated/used for the current year and the previous one (if applicable)
Please answer for all project resources

		Previous year		Current year	
		Allocated	Used	Allocated	Used
High Performance Computing Facility	(units)	0	0	22M	0
Data storage capacity	(Gbytes)	0	0	15,000	0

Summary of project objectives
(10 lines max)

This project aims to assess the future projections of Ireland and Europe by downscaling CMIP6 EC-Earth global climate data, using the climate mode of HARMONIE model (Bengtsson et al., 2017), HCLIM. Downscaling for Ireland has been carried out with the previous CMIP5 global data. These HCLIM simulations will serve to update the previous CMIP5 Ireland projections. A number of simulations – present and 21st Century – will be carried out. These will be validated against gridded E-OBS observations.

Summary of problems encountered (if any)
(20 lines max)

Testing HCLIM on cca initially, there were issues with port numbers. Allocation a new port number solved this. HCLIM is compatible with Era data. In order to downscale EC-Earth data though, EC-Earth data needs to be made compatible with HCLIM. There have been some issues making this compatible. I have been using working scripts to process the EC-Earth data and make it compatible with HCLIM.

The EC-Earth community have delayed the start of CMIP6 simulations later than previously expected, these will commence shortly. I have thus been focussing in 2019 preparing for this (monitoring, cmorisation...). I am keeping my account SBUs for the HCLIM work which will commence over the summer, and continue in the latter half of this year and 2020. I will focus on the HCLIM work then.

Summary of results of the current year (from July of previous year to June of current year)
This section should comprise 1 to 8 pages and can be replaced by a short summary plus an existing scientific report on the project

I got HCLIM set up and running on cca. Issues encountered included server, port number. A few 1 day tests with ERA data were carried out.

The goal of this project is to carry out downscaling of EC-Earth CMIP6 data using HCLIM. EC-Earth simulations have been delayed until June. I have thus so far in 2019 been working on EC-Earth, analysing and monitoring EC-Earth data for validation and preparing the data for downscaling with HCLIM. Certain EC-Earth preprocessing tools have been used for this.

In order to downscale EC-Earth data, EC-Earth data needs to be made compatible with HCLIM. I have been working on scripts used to get HCLIM compatible with this data.

The EC-Earth simulations have been delayed up to later than previously thought and thus have focused on preparing for this up to now (monitoring, cmorisation...). I am keeping my account SBUs for the HCLIM work which will commence over the summer, and continue in the latter half of this year and 2020. I will focus on the HCLIM work then.

List of publications/reports from the project with complete references
N/A

Summary of plans for the continuation of the project

(10 lines max)

CMIP6 simulations have been delayed until June, longer than previously thought, due to issues with the latest version of EC-Earth. In the first half of 2019 I have thus been working on EC-Earth, analysing EC-Earth data for validation & preparing the global data for downscaling with HCLIM.

In light of EC-Earth delays, work for this project will commence in the 2nd half of 2019. Experiments 1 and 2 will be performed in the second half of 2019, and envisaged that experiment 3 start end 2019, start 2020.