



IS-ENES2 DELIVERABLE (D -N°: 6.1)

Report on access rights for CMIP5 and CORDEX for commercial use

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0.5	3/6/2014	Draft	Circulated for review of scope and approach; citations and expansion of acronyms to be added.
1.0	23/10/2014	Final	Incorporating changes suggested by reviewers.

Abstract

Institutions submitting data to the CMIP5 archive can specify one of two licenses for use of their data, one of which prohibits commercial use of the data. This prohibition is also inherited by derived data products, unless an exemption is granted by a data supplier. The CORDEX regionally downscaled data can thus inherit restrictions imposed on CMIP5 data used to provide the large scale forcing. This deliverable summarises the status quo, based on correspondence with the relevant data providers and with Karl Taylor, who is leading the CMIP5 archive activity.

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Dissemination Level	
PU	Public
PP	Restricted to other programme participants including the Commission Services
RE	Restricted to a group specified by the partners of the IS-ENES2 project
CO	Confidential, only for partners of the IS-ENES2 project

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Executive Summary

There is increasing interest in exploiting climate research datasets for commercial use. This deliverable aims to clarify the extent and implications of restrictions on the use of data which have been imposed by some of the data providing institutions, or restrictions imposed by funding agencies which are passed on by the data providers.

The primary concern here is the climate model data provided for the CMIP5 archive and their impact on the regional climate projections in the CORDEX archive. The access conditions of the CORDEX data are indeed potentially influenced by the restrictions associated with CMIP5 data, which is used to drive these regional simulations.

Modelling groups submitting data to the CMIP5 archive must adopt one of two WGCM approved license conditions, one providing access with no restrictions on the use or one providing access only for non-commercial research. In 2013, although most of the institutions had no restrictions associated with their data, seven of them had imposed the usage restrictions. The implications of the CMIP5 license on CORDEX data derived with CMIP5 boundary conditions is not immediately clear from the terms of use themselves, but clarification obtained from Karl Taylor and Ron Stouffer indicates that the restrictions should, in the absence of explicit statements to the contrary from the data providers, be inherited by CORDEX simulations and other derived data products.

In the last 12 months the situation has improved significantly: 4 institutions have moved to drop usage restrictions, and a further one has indicated that they expect restrictions to be dropped this year.

One of the institutions currently imposing restrictions (NICAM) has only provided a limited amount of data for aqua-planet simulations which are of no interest outside the research community. One institution has retained restrictions and indicated that there is no prospect of these restrictions being dropped. They have, however, provided an exemption for dynamically downscaled data such as the CORDEX regional climate model simulations.

There are 3 institutions which have restrictions: MIROC, MRI, NICAM. MIROC have granted an exemption for dynamically downscaled data, but restrictions remain in place for statistically downscaled data. MRI are expecting to be able to relax the restrictions, but this has not been confirmed. NICAM do not have any data suitable for dynamical downscaling: their data is only relevant to those interested in the development of new numerical methods for climate simulations. There are 23 institutions allowing unrestricted access to their CMIP5 data.

1. Objectives

Background

The archives of climate model simulations and projections assembled by the Coupled Model Intercomparison Project, Phase 5 (CMIP5) and COordinated Regional climate Downscaling Experiment (CORDEX) are a major resource for research into climate change and the impacts of climate change. Both CMIP5 and CORDEX are activities of the World Climate Research Programme. There is also interest in using the projections in these archives to inform policy and decision making. The CMIP5 archive already has a major impact on mitigation policy through the IPCC Assessment Process: key conclusions of the WG 1 report are based on data from the CMIP5 archive. Adaptation policy, on the other hand, often requires analysis beyond that carried out by the climate science community. Scientific analysis of data to inform policy decisions is often conducted by commercial consultancies. This report aims to clarify the restrictions on data access for commercial purposes which have been imposed by some organisations.

2. Data access

Unrestricted vs. non-commercial

There are two categories of data: data published without restrictions on the use, and data published for “non-commercial research and educational use only”. The term “commercial use” does appear in the CORDEX terms of use document, but the critical phrase is “unrestricted use”. The term “commercial use” does not appear in the CMIP5 terms of use, and its introduction in the CORDEX terms of use was probably an over-sight.

The meaning of “non-commercial research and educational use only” is explained as follows in the CMIP5 pages: "Results from non-commercial research are expected to be made generally available through open publication and must not be considered proprietary. Materials prepared for educational purposes cannot be sold. These restrictions may only be relaxed by permission of the individual modelling groups responsible for the simulations."

Inheritance of CMIP5 restrictions on use by CORDEX data.

The policy of the CMIP5 archive, expressed by Karl Taylor (personal communication) is that data restrictions expressed in the terms of use must be inherited by data products produced using the restricted data as inputs. That is, running the data through some arbitrary processing and calling that a research activity does not justify creating your own terms of use for the resultant data products.

This requirement to inherit restrictions can be relaxed if exemptions are granted by the data providers. The users who are creating secondary products could contact the data providers directly. To facilitate the process, IS-ENES2 has contacted providers of data relevant to decision making¹ about dynamically downscaled products with the aim of getting a blanket exemption for this class of processing. The request was initially sent to 4 groups, of which two groups have subsequently announced a relaxation of restrictions on use of their data, and a 3rd has indicated that a relaxation is expected during 2014.

¹ The NICAM group has not been contacted, they submitted data for a limited number of experiments with an aqua-planet model. These experiments support model development.

Status

The terms of use adopted by different modelling groups for CMIP5 are listed here: <http://cmip-pcmdi.llnl.gov/cmip5/availability.html>.

Modelling Group	Outlook and origins of restrictions	Exemptions granted by modelling groups.
MIROC	The restrictions are imposed by the funding agency. No change is expected.	Data downscaled using a regional climate model do not inherit the restrictions.
CMCC	Restricted in 2013, now unrestricted.	
CSIRO	Restricted in 2013, now unrestricted.	
MRI	Relaxation of restrictions expected during 2014.	
NICAM	Research only – very limited data (aqua-planet experiments only, no “historical” or RCP experiments),	
FIO	Restricted in 2013, now unrestricted.	
CNRM-CERFAC (CNRM-CM5-2 only)	Restricted in 2013, now unrestricted.	

Table 1: Modelling groups for which data usage restrictions were in place in 2013.

Obtaining exemptions for statistically downscaled products will require either that groups contact data providers individually or some generic description of methods which could be used to clarify the position for a range of methods. It is unlikely that exemptions will be granted for simple bias correction methods. In the absence of any clear definitions of generic classes of statistical downscaling methods, which would have to be provided by the community and the SAT, we can only proceed with the default position which is inheritance of restrictions. This will also apply to statistical downscaling of CORDEX regional model data if the groups providing the data impose restrictions.

Exemptions

The MIROC group have granted an exemption for data produced by Regional Climate Models driven by their CMIP5 data: output from such RCM experiments does not have to inherit the restrictions on use which apply to the input data. His exemption does not apply to statistically downscaled data. The range of techniques employed for statistical downscaling is so broad that it makes little sense to ask for an exemption. In the absence of any community agreement on definitions of methods, it will be up to individual groups or individuals to established whether their approach can be granted an exemption by contacting the MIROC modelling group directly.

3. Conclusions

The problems associated with restrictions of CMIP5 data are less severe than appeared in 2013, following relaxations in restrictions by several groups. The remaining ambiguity concerns use of MIROC data for statistical downscaling and the MRI data. Senior staff at MRI have expressed optimism that they will be able to relax restrictions, but this has not been confirmed.

The CORDEX archive is still under construction. Information about access policies imposed by groups providing CORDEX data will be made available through the data service pages of the ENES portal (www.enes.org/data).

4. Appendix 1: MIROC/MEXT Data Policy – translation from the Japanese.

In order to clarify the basis of restrictions imposed on the MIROC CMIP5 data, a translation of the relevant national data policy document was obtained (the original is available only in Japanese – a copy of the Japanese text was provided by Masahiro Watananabe).

DATA RELEASE POLICY OF INNOVATIVE PROGRAM OF CLIMATE CHANGE PROJECTION FOR THE 21ST CENTURY

Office for the Promotion of Global Environmental Science and Technology,
Research and Development Bureau, Ministry of Education, Culture, Sports, Science and Technology

1. Introduction

The Innovative Program of Climate Change Projection for the 21st Century (hereinafter ‘Innovative Program’) aims to present scientific information of greater accuracy and reliability via projection studies on global warming and other climate change issues. This is helpful both for preparing the IPCC Fifth Assessment Report and also for considering effective and efficient policies and planning actions to control and adapt to global warming.

It is therefore vital that the outcomes of the Innovative Program, the latest climate change projection studies, are provided promptly and used widely. Nevertheless, given that these outcomes have been compiled from the accumulated expertise of research institutions, universities and other organisations contracted by the Ministry of Education, Culture, Sports, Science and Technology, they have public value and should be handled as intellectual property.

Therefore, here we set out the basic policy on the use of data compiled from the studies of the Innovative Program and the disclosure and provision thereof and based on this policy aim to promote their proper use in studies and publicity campaigns to promote and raise awareness of such matters as impact assessments and adaptation measures.

2. Definition of data

Data in the policy comprises that compiled from studies of the Innovative Program, and refers specifically to simulation data, graphics (including moving images, still images and photographs), drawings and other information obtained from surveys and studies and records thereof.

3. Purpose of use of data

In consideration of the original purpose of the Innovative Program, use of the data shall be permitted in the case of purposes such as the following: To contribute to the preparation of the IPCC Fifth Assessment Report; to assess the impact of climate change and examine adaptation measures etc. or other research and development that will help to advance global science and tackle environmental issues on a global and regional level; and to serve to promote and raise awareness of the respective underlying scientific knowledge. Use for profit-making purposes shall not be permitted.

4. Timing of data release start

The data shall be released promptly after the quality checks by the compiler of the data and the individual compilation of the study outcomes have been completed.

5. Method of obtaining data

Data users shall submit an application for data use to the person responsible for providing data from the research institution that compiled it, stating such matters as the purpose of use, contact information and data requested. A decision on the use shall be given accordingly.

The details shall follow the ‘Procedures for providing impact assessments and adaptation studies of climate model experiment outputs in ‘The Innovative Program of Climate Change Projection for the 21st Century’’.

6. Data use fees

The data is available free of charge except for the costs of data-copying media and other additional actual costs incurred.

7. Rights to data

The Ministry of Education, Culture, Sports, Science and Technology (MEXT) and the research institution that compiled the data (hereinafter ‘MEXT etc.’) shall own the copyright and all other intellectual property rights to the data.

8. Considerations for data use

- Data users shall not use the data for purposes other than the original intent.
- Data users shall not distribute the data to third parties without the agreement of the person responsible for its provision.
- In public announcements of data-based outcomes, the name of MEXT etc. shall be given as the data source and it shall be indicated that the outcomes are based on the Innovative Program. In conjunction, the outcomes shall be reported to the person responsible for providing the data.
- MEXT etc. shall not be responsible for data-based findings provided by data users.

5. Glossary

CMCC: Centro Euro-Mediterraneo per I Cambiamenti Climatici

CMIP5: Coupled Model Intercomparison Project Phase 5

CNRM-CERFACS; Centre National de Recherches Meteorologiques / Centre European de Recherche et Formation Avancees en Calcul Scientifique

CORDEX: Coordinated Regional Climate Downscaling Experiment

CSIRO: Commonwealth Scientific and Industrial Research Organisation, Australia

FIO: The First Institute of Oceanography, State Ocean Administration, China

IPCC: Intergovernmental Panel on Climate Change

MEXT: Ministry of Education, Culture, Sports, Science and Technology, Japan.

MIROC: Japan Agency for Marine-Earth Science and Technology, Atmosphere and Ocean Research Institute (The University of Tokyo), and National Institute for Environmental Studies

MRI: Meteorological Research Institute (Japan)

NICAM: Nonhydrostatic Icosahedral Atmospheric Model Group.

RCP: Representative Concentration Pathway (of greenhouse gasses).

WGCM: Working Group on Coupled Models