



Project no. GOCE-CT-2003-505539

Project acronym: ENSEMBLES

Project title: ENSEMBLE-based Predictions of Climate Changes and their Impacts

Instrument: Integrated Project

Thematic Priority: Global Change and Ecosystems

D8.4 Internet Project "Public Understanding of Science"

Due date of deliverable: February 2009

Actual submission date: June 2009

Start date of project: 1 September 2004

Duration: 60 Months

Organisation name of lead contractor for this deliverable

Revision [Version 1]

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the Consortium (including the Commission Services)	

1. Technical Issues

In RT8, UEA has worked on the Public Understanding of Science web site (PUS). PUS aims to explain the science of Climate Change to the general public. The information incorporated in the site was supplied by different ENSEMBLES members. A first general request for inputs was sent to people in autumn 2007. That was too general and did not generate any response. More targeted and specific requests for contributions were sent to ENSEMBLES experts in early spring 2008. This time the response rate was around 70%.

The site was also redesigned following the decision to change D8.4 from a prototype site to a finished product. A full page by page summary was also approved by ENSEMBLES management. The web site was moved from the commercial software package that was being used for development, to Dreamweaver and a more 'standard' format according to a further management-level decision. This format will facilitate future updating and remove any licensing issues. An informal 'editorial group' of UEA and MOHC staff was set up to oversee development of the site. The PUS pages were designed using a similar layout to the ENSEMBLES newsletter issues.

The current version of PUS was launched in November 2008 and is now available at <http://www.cru.uea.ac.uk/projects/ensembles/pus/index.html> (Fig. 1) and will continue to be updated as ENSEMBLES results emerge over the final part of the project.

ENSEMBLES Public Understanding of Science

HOME

CLIMATE CHANGE OVERVIEW

- Natural Climate Change
- Anthropogenic Climate Change
- Scientific issues

CLIMATE CHANGE AND YOU

- Impacts of Climate Change

CLIMATE MODELS

- Physics and hardware
- Modelling regional climate
- Predictions and projections
- Using model data

ADDITIONAL INFORMATION

- Glossary
- FAQs
- Links
- Acknowledgements

This ENSEMBLES Web site aims to explain the science of Climate Change (CC) to the general public. If, after browsing these pages, you have a better awareness of these matters, then our job is done. If you return for updated information, or to gain deeper understanding, so much the better!

Contributions from climate scientists introduce the methods and concepts of their research, give definitions of terms that may be unfamiliar, and answers to frequently asked questions. Each page has links to more detailed information. We welcome comments on this site.

The ENSEMBLES Project is an EU-funded initiative, which ends in August 2009. It's principle aim is to allow the uncertainty in long-term climate predictions to be measured, so that a clearer picture of future climate can be formed.

The project is running multiple climate models ('ensembles') to acquire a range of future predictions. These are assessed to decide which outcomes are more likely (probable) than the others.

66 institutions from 19 countries are participating in this 5-year project, which will provide useful outputs for many applications, including agriculture, health, water resources and insurance. The project conclusions will assist policy makers at all levels in determining future strategies to address climate change.

Stakeholder newsletters

- ENSEMBLES Newsletter Issue I, January 2009

Maintained by Carlota Grossi Sampedro
Last updated 5 May, 2009

Fig.1 ENSEMBLES Public Understanding of Science (PUS) main page.

2. Current work and future work

Since the launch, material written by ENSEMBLES partners and edited by UEA has continued to be added, with the most recent additions made in May, 2009. PUS will continue to be updated until the end of ENSEMBLES, and will be maintained for a period of two years after the end of the project. The next update will take account of any comments received from the external reviewers. UEA would appreciate

comments and feedback from ENSEMBLES partners, together with additional draft material for inclusion.

3. Structure of PUS

Apart from the main page, the web site is divided down to third level pages; the first level pages are named Climate Change Overview, Climate Change and You, Climate Models and Additional Information. First level pages are successively sub-divided into several second and third level pages. Fig. 2 summarises the structure of PUS. Fig. 3a, 3b, and 3c shows an example first, second and third level pages.

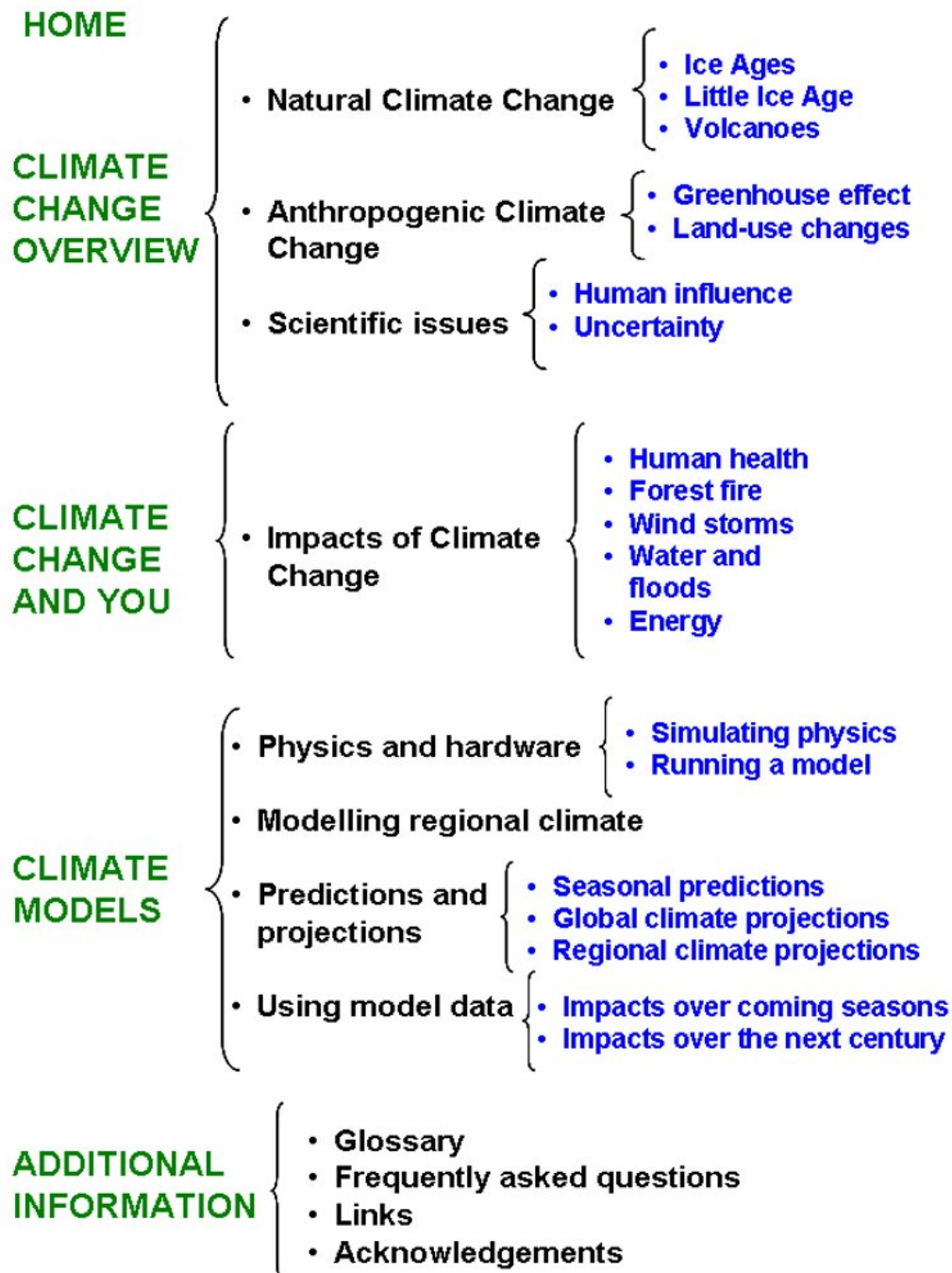



Fig. 2. PUS Structure. Green: first level pages; black: second level pages; blue: third level pages.

CLIMATE CHANGE OVERVIEW



HOME

CLIMATE CHANGE OVERVIEW

Natural Climate Change

Anthropogenic Climate Change

Scientific issues

CLIMATE CHANGE AND YOU

Impacts of Climate Change

CLIMATE MODELS

Physics and hardware

Modelling regional climate

Predictions and projections

Using model data

ADDITIONAL INFORMATION


Glossary

FAQs

Links

Acknowledgements

Climate changes on timescales ranging from days and months to thousands of years. The causes of these changes are equally varied and can be considered as natural, due to human activity (anthropogenic), or some combination of the two. Climate research is often complicated by feedbacks, whereby a cause of climate change is itself affected by the change in climate. The links to the left examine different aspects of climate change and provide examples which should help remove many of the sources of confusion currently surrounding the public debate. In particular, we distinguish between climate change that would have happened anyway, and that which can be attributed to human intervention.



How can people change climate?


Isn't the Greenhouse Effect natural?

Ice Age or Global Warming?

Maintained by Carlota Grossi Sampedro
Last updated 1 April, 2009

Fig. 3a

ANTHROPOGENIC CLIMATE CHANGE



HOME

CLIMATE CHANGE OVERVIEW

Natural Climate Change

Anthropogenic Climate Change

Scientific issues

CLIMATE CHANGE AND YOU

Impacts of Climate Change

CLIMATE MODELS

Physics and hardware

Modelling regional climate

Predictions and projections

Using model data

ADDITIONAL INFORMATION

Glossary

FAQs


Links

Acknowledgements

Greenhouse effect | Land-use changes

CLIMATE CHANGE OVERVIEW

Anthropogenic climate change operates on many timescales and has various causes. These are regularly featured in the media, the most notable in recent years being variously described as "Global Warming" or the "Greenhouse Effect". This is the main subject of this site. Other human actions, such as land-use changes, can also affect climate.




Isn't the greenhouse effect natural?

Does deforestation affect global change?

Maintained by Carlota Grossi Sampedro
Last updated 1 April, 2009

Fig. 3b

GREENHOUSE EFFECT



HOME

CLIMATE CHANGE OVERVIEW

Natural Climate Change

Anthropogenic Climate Change

Scientific issues

CLIMATE CHANGE AND YOU

Impacts of Climate Change

CLIMATE MODELS

Physics and hardware

Modelling regional climate

Predictions and projections

Using model data

ADDITIONAL INFORMATION

Glossary

FAQs

Links

Acknowledgements

Greenhouse effect | Land-use changes

CLIMATE CHANGE OVERVIEW > Anthropogenic climate change > Greenhouse effect

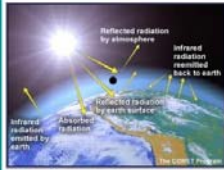
Nature's Greenhouse Effect

The greenhouse effect is a natural process by which the Earth loses energy to space at wavelengths characteristic of infrared radiation. A number of trace gases in the atmosphere, in particular water vapour, carbon dioxide, methane and other gases such as the artificial CFCs (Chloro-fluoro-carbons), collectively known as "greenhouse gases", partially absorb and redistribute the outgoing terrestrial radiation within the atmosphere in the form of heat. Without this natural greenhouse effect, the Earth would be about 35°C colder than it is at present.

The human contribution

The enhanced greenhouse effect occurs because increases in the levels of certain greenhouse gases trap greater amounts of the infrared radiation emitted from the Earth's surface, raising the temperature of the atmosphere above its "natural" level. Rising levels of atmospheric carbon dioxide (CO₂) and methane (CH₄) concentrations are directly attributable to human activities. The enhanced greenhouse effect is often confusingly abbreviated to "Greenhouse Effect", and is also popularly referred to as "Global Warming" or "Climate Change".

Before the early 1800s, in the pre-industrial era, these gases fluctuated within fairly narrow limits over the previous 10,000-15,000 years. Since the 19th century, however, CO₂ has increased by about 40% and CH₄ by a factor of 3. The human contribution to increased CO₂ levels stems mainly from the burning of fossil fuels (coal, oil, natural gas, and wood), while CH₄ is linked largely to livestock production, particularly cattle. Most climate scientists believe that the enhanced greenhouse effect will lead to increases in atmospheric temperatures well beyond the range of natural climate fluctuations.



The Greenhouse Effect Shortwave radiation from the Sun reaches the Earth's surface, which emits energy into space as infrared radiation. Some energy is absorbed and re-emitted as heat into the atmosphere by greenhouse gases sensitive to the wavelengths of the infrared spectrum

Fig. 3c

Fig. 3. Examples of first (3a); second (3b) and third (3c) level pages.