

ENSEMBLES Final Symposium, Exeter, UK, 17-19 November 2009

Opening session.

Address by Mrs Elisabeth Lipiatou, Head of Unit « climate change and environmental risks », Directorate General for Research, European Commission.

Honorable Minister,

Mr Chief Executive of the British Met Office,

Dear researchers, ladies and gentlemen,

I am here today on behalf of Mrs Elisabeth Lipiatou, the Head of the Unit, which in the Directorate General for Research of the European Commission deals with climate change. Due to unexpected obligations, she asked me to convey you her message. It is a great honour for me to do so to such a distinguished gathering.

The ENSEMBLES project, literally « *Ensemble based Predictions of Climate Changes and their Impacts* » started in September 2004 as an integrated project funded by the 6th Framework Programme for Research of the European Community. The consortium initially gathered 66 Institutions from 20 EU and non-EU countries as well as international institutions. In the course of the project, 10 non-EC funded partners joined the consortium and 30 institutions registered as associated partners achieving 106 institution members. The project involved about 340 researchers assigned to 8 research themes, totalling a cost of about 23 M€ for the initial partnership out of which 15 M€ from the EC over 5 years. These figures tell us that this project has been a rather big adventure. We meet today, 5 years down the non linear and sometimes bumpy road of scientific research, to take stock of the massive amount of scientific results this project delivered. For sure, a 3-day conference will not be enough to report on every innovative result ENSEMBLES has produced.

The very significant contribution to climate science, in particular to climate modelling, that ENSEMBLES has brought could not have been achieved without the valuable leading contribution of outstanding researchers such as Professor Griggs and Professor Mitchell, and without considering the efficient project management Chris Hewitt and Paul Van der Linden, assisted by Pip Gilbert, have performed. The type of consortium established in integrated projects funded by the 6th Framework Programme is broad. This type of consortium requires skilled managers, able to combine the timely delivery of high quality scientific results with

the obligation to meet all administrative and financial requirements as set by the EU programme: objectively, a serious challenge.

I would like therefore to express my gratitude to all researchers involved in this project for the quality of the work performed, the scientific progress achieved in each discipline and across the disciplines and to scientific research managers who dedicated time taken from their individual research activities to working on the management of a collective initiative and ensure its success. You all can be assured that the European Commission appreciates the provision of this large amount of scientific results, which are also of great interest to other climate-related research projects carried out at national and EU levels. Last but not least, I wish to emphasize the contribution of ENSEMBLES to the path of further integration of the EU research community as well as the consolidation of the European Research Area.

This introduction serves me to convey two main messages, first and foremost, with regard to the ENSEMBLES legacy to climate research and second, with regard to the contribution the ENSEMBLES results may make to the policy-making process on climate change in the UNFCCC and WMO contexts.

First a few words with regard to the legacy of ENSEMBLES to research:

We will here have the opportunity to hear more about the project's key scientific developments from those authoring the work. It is nevertheless clear that ENSEMBLES addressed issues on the modelling of climate change at both global and regional levels and on a set of relevant time scales. ENSEMBLES also looked at the impacts of climate change and took into consideration some socio-economic aspects.

Did ENSEMBLES look at everything? Well, almost so!

The executive summary states that the « added-value » of ENSEMBLES results from using better models; the development of new modelling techniques and the link of climate projections to impact assessments to form an end-to-end system. Indeed ENSEMBLES contributed to better quantifying, comprehending and reducing climate projections uncertainties through approaches involving global and regional climate models and impact models. This programme brought important developments on quantifying uncertainties in

each modelling field but also at the interfaces between the modelling communities involved which is an important contribution addressing key knowledge gaps.

It may sound repetitive, however, the list of deliverables provided by ENSEMBLES is impressive. The number of new scientific questions raised in the course of this project is also high. This observation calls for more research to build up on ENSEMBLES as well as for an extensive use of the results made available in the ENSEMBLES database. I am aware that several EU-funded and other national projects are already using ENSEMBLES results: this approach is welcome and should be encouraged to continue beyond the lifetime of ENSEMBLES.

Regarding the end-to-end approach I believe that the methodologies applied in ENSEMBLES could further reach the modelling community involved in climate economics and energy modelling and therefore contribute to completing the end-to-end approach by addressing increasingly socio-economic modelling issues on climate change and their uncertainties. Organised and consistent results in this area are crucial to guide and facilitate the decision making process on climate change.

As a premise to the second message I wish to deliver, I should recall that there are two broad types of uncertainties, one related to use of non perfect climate models and data sets and the other related to emission scenarios. ENSEMBLES findings bring to the decision-making process progress on the first type of uncertainty by means of improved quantification of climate projections uncertainties at both global and regional levels. With regard to the second type of uncertainties, the emissions scenarios released by the IPCC in its *2000 Special Report on Emission Scenarios* can be deemed to be conservative as compared to the actual reported emissions. EU policy makers are aware that the largest uncertainties in global climate projections stem from such uncertainties on scenarios and this element is up to their appreciation and action.

It is not as straightforward for a policy maker as for a researcher in climate modelling to read through the large set of curves on a plot with associated probability distribution functions and to understand uncertainties and their possible reduction. Decision-makers rather prefer one plot with one curve rather than complex graphics, as sometimes proposed by the IPCC or by the ENSEMBLES project. To you scientists, the presentation of a range of model responses

and the quantification of probability distributions may mean an improvement of the quantification of uncertainties, however this is not necessarily obvious to a non-scientific public.

The next, though not less important challenge is therefore to make ENSEMBLES results also understandable to a broad, non-scientific public including decision makers. It becomes urgent to accompany any specific model results with easy to read guidelines and interpretations of the results. This way forward is mandatory for the sake of reducing the risks of erroneous or biased interpretation-and hence of unsatisfactory decision-making. Meeting this objective is important in view of the final reports of the ENSEMBLES project. This gathering here may actually be a good opportunity to test the performance of ENSEMBLES researchers in communicating uncertainties to an aware but non-scientific public.

You are aware that the European Council has repeatedly recommended since 1996 that the global average surface temperature should not rise by more than 2°C from its per-industrial level. Today we know that not exceeding this level requires drastic global cuts in GHG emissions: an immense challenge for the EU and world's population. ENSEMBLES, with its multi-model approach, provided a much relevant set of simulations clearly indicating where up-to-date climate modelling projections stand with regard to the 2°C target and to which extent these results are model-dependent. ENSEMBLES Projections at regional level and the impact identification with the associated uncertainties are also essential elements which the decision making process will consider, on adaptation notably.

The results of ENSEMBLES will be conveyed to decision-makers including the relevant services of the European Commission as well as EU Member States's services through various channels, including the representatives present at today's gathering. I believe the legacy of ENSEMBLES is a major milestone for guiding the policy discussions at several levels.

There is an additional example of decision making process to which the ENSEMBLES results can make a substantial contribution: the follow-up to the September 2009 Third World Climate Conference held in Geneva, where world leaders launched the establishment of a framework for the provision of climate information services. An immense challenge to researchers and decision-makers is in fact the translation of climate predictions into information services of relevance to everyday lives. The progress made by ENSEMBLES will

for sure be of major interest to any up-coming activities aimed the provision of climate services.

To conclude, you may expect a word on the imminent COP-15. The ENSEMBLES results may not immediately be taken into account in COP-15 as the issue at stake is not climate change awareness but rather how to tackle it. Though this gathering should send loud to decision-makers that we now appear to understand better some feared impacts of climate change and that this improved understanding does not result into a weakening of the climate threat. Such message and the contribution of ENSEMBLE to shape it adds up to the continuity and consistency of the scientific messages delivered to the decision makers so far: it is now up to them to take the responsibility of decisions consistent with the most updated knowledge.

Thank you for your attention and, again, my congratulations to all of you, who made ENSEMBLES possible and such a success.

Text prepared and delivered on 17 November 2009 by Philippe Tulkens