

Title : ECLAIRE plenary sessions 1 & 2 in Brescia

Time :

Chair : Mark Sutton/Clare Howard

Attendees : All

Minutes by : Clare Howard NERC

Aim

To introduce the participants to the project, its constituent components, workpackages and cross cutting tasks.

Presentations

Overview – Mark Sutton
Component 1 Introduction – Eiko Nemitz
Component 2 Introduction – Almut Arneth
Component 3 Introduction – Claus Beier
Component 4 Introduction – Wim de Vries
Component 5 Introduction – Markus Amann
Workpackage 21 Introduction – Clare Howard
Activity 21.4 Data quality and database management introduction – Sue Owen

Topics discussed with Issue, decisions/conclusions and actions

The meeting was opened with a welcome from our hosts, the Università Cattolica del Sacro Cuore (UNICATT), and the local organizer Dr Giacomo Gerosa.

Overview – Mark Sutton: An overview of the project was given, including the main risks and challenges. It was also noted that we should not be afraid to be reactive to the needs of our project stakeholders.

Component 1 Introduction – Eiko Nemitz: After presenting an overview on Component 1, the comment was made that the link to the modelers/modeling workpackages is key for this project, communication is needed, all the way through the chain.

Component 2 Introduction – Almut Arneth: A brief overview of the component was provided. Again it was noted that the interfaces with the other Components and information flow was very important. Regarding the linkages between C1 and C2, C1 provides the measurement and the prioritizations, which feed into and then need to be acted on in C2. C2 deals with the process relationships, exchange and deposition and putting this into a spatial context. The important thing to remember is that the parameterizations which are derived in C1 need to be suitable for implementation in C2.

Component 3 Introduction – Claus Beier: An overview of the work of this component was provided, there were no further comments or questions at this stage in the meeting.

Component 4 Introduction – Wim de Vries: After the overview, discussion followed on the intentions to separate the thresholds in relation to oxidized and reduced N deposition, the dose response relations and how/whether the interactions with pH will be captured. In principle this is possible as the models do predict pH – however the strength in the layering of the model will also have an impact on this question.

Component 5 Introduction – Markus Amann: The overview of this component was presented, in response to this it was noted that there is the possibility for the work of this component to feed into a review of air quality measures – however this would need to be within the coming year, which is soon. To keep the messages to stakeholders and policy informative it was noted that outputs from this work should include the impacts on both food supply and ecosystems. As this component is at the end of the chain of work, there is the danger that there later delivery of earlier components could slow or stall the work – so it was suggested that a first handover of data could occur, perhaps 2 years into the project, to give component 5 sufficient time to produce some results in the project. It was also discussed that further information on uncertainty in the input components is required than is currently provided.

Comments and further discussion on Component 5 were as follows, as the information for air quality review is needed within one year, will it be possible to incorporate information on the economic impacts of ecosystems? It was agreed that whatever was available would be used, and that although there are existing results from the European Nitrogen Assessment, there are some caveats which the researchers would want to address. An ongoing DEFRA project may also be able to provide some useful input and this will be included if appropriate. A short discussion followed on how/which elements to value – for example critical loads and dose response relationships, the subtleties of these various items will need to be considered before communicating possible costs related to each of these. This led to the comment that it would also be useful to communicate effectively to policymakers the actual nature of biodiversity, e.g. that a 'greener' ecosystem is not necessarily a better functioning one. We also need to agree on what 'matters' to policymakers (or what should), e.g. life expectancy is given greater weight than many ecosystem health aspects - albeit for obvious reasons – we need to address this issue where possible.

The issue of rate change of temperature and extreme events, in relation to modeling in eclaire, was discussed. It was noted that temperature is not necessarily a problem, but extreme events can be problematic when modeling systems. It was also asked how well turnover can be simulated in the short and long term – it appeared that one of the key issues here is not what the models produce, but that fact that we do not have observations to verify which responses are true. It was agreed that as a first step these differences in output should be shown and could then be looked at in more detail. It was noted that showing an uncertainty would not be difficult, more finding the robust results.

Workpackage 21: Standards and Data Management

Task 21.1 (Harmonization of Scenarios) Introduction – Wilfried Winiwarter: The need for harmonization of scenarios in eclaire and how this might be handled, was provided by the task leader. In response, several topics of discussion were raised;

- The use of the 'Representative Concentration Pathway' Scenarios (RCP's)
 - Need to be aware of potential limitations such as the land-cover over Europe and items related to air pollution, also the proportional decrease of emission factors with wealth (with the assumption we are rich in 2100!), also as the RCP's are global. These type of elements will also need to be communicated to policymakers.
 - RCPs do at least provide a consistent set of information, but yes there are some differences we may want to include – the PEGASOS project can play a role here.
 - Regarding spatial distribution, it was noted that different results come from using EMEP emissions and that from RCP's.
- Climate change items
 - SMHI have suggested climate scenarios, but there will need to be some further discussion on this.
 - Uncertainty in precipitation fields is also important – this can be addressed by looking at different climate model results

- SMHI can offer downscaled high resolution data, from climate models, down to 10-15km resolution
- Must not forget sulphate
- Timescale/threshold
 - Which year should we be working towards? 2030, 2050, 2100?
 - Is it possible to also look at threshold based scenarios – i.e. 2 degrees warming?
 - All RCP's go to 2100 – with time series inbetween
 - Need to consider at what point we do an intercomparison

Task 21.2 (Measurement Protocols) Introduction – Christof Ammann: An introduction to the activities of this task was given, comments in response were, that key to the project is working out the core measurements to be performed and on what timescale. We can use experience from previous projects to inform this. Also the requirements of the modelers is critical, during this week the two communities need to communicate their needs and agree timescales.

Task 21.3 (Model protocols and uncertainty) – Clare Howard; Introduction to this task was given, including potential scope of the task and resource constraints. In response it was noted that a meeting around month 6 is needed, regarding C2 models, and which may well link with C2 models – which could address the elements of this task. It was also noted that we should be able to explain which items were covered in which models and which not – this is needed for stakeholder information on uncertainty. Extremes remain an issue. In C2 it was discussed that the modeling protocol will be application based, and the model comparison should provide information in the form that stakeholders need.

Task 21.4 (Data quality and Database Management) – Sue Owen: Presentation was given on the database to be used in ECLAIRE, and what were the important elements to make sure it was fit for purpose – i.e. timely delivery of data. Comments included how gap filling would be handled – it was noted that the modelers need to agree how and where this will happen, depending on their needs. The databases are split across components, and in some cases it was suggested that this could be a problem for modelers. The response was that the nature of the data in the C4 database would be different (i.e. spatial), it will be possible to discuss these potential needs and divisions in the parallel sessions. The nature of data in previous project databases, such as for the NitroEurope project, was discussed. Although the data will not be fully released until two years after the end of the project, applications can be made to access the database for the purposes of the eclaire project. There is of course an issue of trust here – but modelers should also see the database as a useful way to generate collaboration – rather than just 'having their data used'.