

Title :	Minutes from the ÉCLAIRE Executive Steering Group Meeting	
Time :	24 th October, 9am-12noon	
Chair :	Mark Sutton	
Attendees :	Mark Sutton (Co-ordinator)	NERC
	Almut Arneth (C2 leader)	LUND
	Eiko Nemitz (C1 leader)	NERC
	Claus Beier (C3 leader)	DTU
	Wim de Vries (C4 leader)	ALTERRA
	Wilfried Winiwarter (Representative on scenarios)	IIASA
	Markus Ammann (C5 leader)	NERC
	Clare Howard (Project Manager)	
Apologies :	Francesco Loreto (Representative of Southern European Issues)	CNR
Minutes by :	Clare Howard	NERC

Aim

To prepare for the following kick-off meeting.

Presentations

N/A

Minutes

1. Welcome and formation of ESG (MAS)

The members of the ESG (the component leaders, the project co-ordinator, the project manager and a representative of the scenarios work) introduced themselves and the ESG was officially formed. The first order of business was to discuss/agree where possible, deputies for each of the Components. These deputies would be responsible for attending meetings and keeping communication flowing when the component leader was not able to attend a meeting.

The following deputies were agreed:

C1: Mark Sutton

C2: David Simpson

C3: Gina Mills

C4: Alessandro Cescatti may be able to take this on – Wim will need to approach him first.

C5: Wilfried Winiwarter

2. Overview of Partnership to Deliver Work vision (including reporting)

The nature of the annual stakeholder reports, which have been requested by the Commission were discussed at length. It was noted that as well as the project and following reports flowing information out to policymakers, that the project also needed to be reactive to stakeholder issues and needs – for example through our links to the 'EU Air Quality Stakeholder Expert Group'. It was noted that often, health issues and costs were more highly rated than equivalent information for ecosystems, whilst this is true, the ECLAIRE project is focused on ecosystems and it is important that we carefully make the case to stakeholders of the

importance of changes, issues and costs relating to ecosystems. Whilst some economic valuation of ecosystems damage is envisaged in the project, there will be many other emerging messages which we will have to communicate effectively.

The plan to enable the gathering and dissemination of the information for the annual reports was discussed. The group agreed that component leaders will provide (very brief) quarterly reports on progress by workpackage, including upcoming deliverables and any relevant information on links to policy. The Component leaders can decide whether they wish/need to contact the relevant workpackage leaders for information on progress and/or policy. The co-ordinators will circulate a reporting template for agreement (AA to send CH an example from the Pegasos project), the eclaire reports will be submitted to the co-ordinators. In other projects component leaders also receive reminders of upcoming deliverables – this might also be possible in eclaire if the component leaders would find this useful.

Some of the scientific aspects of the project and how they relate to emerging policy messages were discussed- for example, the possibility the overall temperature change due to potential climate change (i.e. perhaps 4 degrees), could well dwarf any air pollution impacts on vegetation. Whilst this is a possibility, scientifically we need to remain focused on the air pollution effects, but these higher level/overarching messages do need to be considered when we are addressing stakeholders. Also the issue of response time is a difficult one – during the eclaire project we will only be able to address some short-term response mechanisms, whilst longer-term ones could also be very important – again this is not something we can directly address within the science, but will need to bear in mind whilst disseminating the wider messages. Reflecting on this, MS asked the group to flag any key messages which were already emerging as the project begins/during the kick-off meeting and if it is anticipated that changes in focus are needed regarding the science we do, to flag this up early and consider the implications of this on other aspects of the project. In relation to this last point, MS commented that resource is of course a key constraint on the work we can achieve during the project, which is why linkages with other projects is also key, to maximize the output for resource. We do have an unallocated budget which can be re-tasked for emerging issues and contingencies – however it will need to be managed carefully throughout the project.

3. By each component leader: overview of major risks (including major outcomes to be achieved in Brescia)

Component 1

The largest concern is the timing of delivery of advance measurements and data quality – some groups will have to measure 'new' things and the data from the flux network needs to be of sufficient quality to be usable by the process modelers. This means for example time resolved flux data. We do however have 15 months available for 12 months of measurement, also many of the sites were previously part of NEU and this kick-off meeting will also allow us to tease out any further individual problems and address them early on.

Other items which could pose a problem are deriving parameterizations for use by the other components, ozone for example has a different modeling network and there will be other items of compatibility to consider. A common modeling framework needs to be populated with parameterization information - we hoped that COST action 0804 'ABBA' could also help with this – however it looks like their planned workshop on this will be too late for the needs of eclaire, so, we need to decide how to address this issue. It was suggested that a cross project working group (containing the relevant eclaire and Pegasos members) could be created to address this need – whilst it was agreed that this could be helpful – it was decided not to make this move just yet, but to monitor the situation to see if it becomes necessary later.

Component 2

There is a need for a 'component +' meeting in the Spring, perhaps 1.5 days long, to discuss

simulation protocols for the modeling work, which may also link with the work in Pegasos. It was noted however that before this point, the modeling groups need to align their ideas regarding deposition modeling strategies – but this will hopefully be achieved this week.

The overall objective for this component is to define the large scale boundary conditions for the European scale, which should be achievable. It will require close links to other groups in the project, and communication is key, spatial and temporal issues will also need to be considered, and an understanding of what each model and key parameterization does what and how is necessary.

Some ensemble modeling work is proposed in the project, with the CTM's – however, AA is not keen on this type of study. A discussion followed on what and how the CTM's could be compared – for example by having a common protocol for reporting outputs of models, and the need to harmonise runs where possible, to allow comparison of the setup/and or input fields. It was decided that the framework for this activity would need to be discussed and agreed during the kick-off meeting. A couple of specific modeling items were then discussed, including the need for eclaire to provide agricultural emissions into the future – as this will not be delivered by Pegasos, also a prediction of methane into the future is required. There is also an issue of time here, in that future results may be delivered too late to be useful, therefore any current existing/emerging results need to be communicated in a clear and timely manner.

The point was made that if we do not attempt an ensemble approach, what information can we gather from the process as a whole? Also we are dealing not only with the uncertainty which comes from the models, but also that propagated by the potential variations in climate, which can impact on for example, the meteorology. How do we separate this uncertainty out to communicate externally? It was agreed that we will need a simplified way of addressing the climate uncertainty and we will have to look at and explain the limitations of this approach. To do this we need to agree feasible scenarios for the future, in terms of climate, emissions and land-use and then run them in several models. In order to make this process feasible, it will be necessary to use existing scenarios as far as possible, in terms of emission fields, climate and land-use, to make sure they fit well together and are internally consistent. It was noted that Component 2 will need the input on climate, and anthropogenic carbon dioxide emissions in the next 3 months or so. It may also be necessary to have several choices for particular items, such as precipitation, whereas for temperature we may need only one.

A discussion followed on climate inputs/scenarios and issues of downscaling and extremes. Whilst regional climate information is being developed, that directly available is global, which would require downscaling. Regarding extremes – although these are interesting scientifically they may 'kill off' some of the biology in the models, meaning that there will be gaps in the results. Therefore it was agreed that it was important to perhaps define these limitations to work with, but also if possible run one or two scenarios which included these extremes. It may be worth making links to the 'FUME' project, which looks at the impacts of extreme weather events and fire, as they may be able to provide some useful information on extreme examples. Again it would be useful if some scenarios used in eclaire were similar to those in other projects, for comparison purposes. WW and AA will look into these issues and links to other projects.

The extent of the projections was discussed, along with issues relating to historical back casting for models. It will be necessary to have a consistent approach to historical emissions - as this will impact what we see in terms of the slower response mechanisms, such as soil carbon, forests, carbon sequestration. Again there is a need to harmonise the historic climate information for use by models.

It was agreed that each of the workpackages need to be clear about what they will deliver and what they expect from other workpackages, in terms of time resolution, spatial resolution, etc and then the groups must agree on what can be delivered within the timeframe and resources of the project, including the parameters to be included in models.

It was agreed that AA, WW and WdV would work closely on addressing the issues mentioned regarding harmonizing of models and scenarios.

Component 3

The main issues related to component three are how to best reconcile the issues of scale of impacts and time resolution. This is due to the fact that a range of scales are involved, such as carbon storage, whereas the ecosystem responses which we are measuring are on much shorter timescales, also the ozone responses are much more immediate than the carbon sequestration question. The link between these scales is again the modeling aspects of the project, however there are a wide range of models and measurements which will need to be aligned to one another, to make the overall conclusions robust. Harmonization between the measurements to be made and the models which will use them, is therefore key.

Component 4

The issue of use of historic datasets has already been addressed in the discussion on Component 2.

Other perceived risks related to the workpackages in Component 4 are, for WP's 14 and 15, they need to have a clear set of common data. Regarding WP's 16 and 17 and thresholds, there needs to be good interactions with WP's 11 and 12 of Component 3, however this should not be too much of a problem now that this has been identified.

In workpackage 16, the division between ammonia and NO_x questions has to be considered, but we should also not forget ozone. The novel aspect with respect to WP 12 is to include interactions with carbon dioxide and nitrogen, if this is successful this can then be applied in WP16. It was agreed that although difficult, we should try to aim to develop critical loads for ammonia and NO_x.

There was a query as to whether the nitroscape model will be able to provide the 50m by 50m resolution in time for the two ecosystems chosen. To avoid future problems with this, consensus is needed between Klaus Butterbach-Bahl and Pierre Cellier.

WdV reflected from his point of view that (other than for the periodic meetings), cross-component meetings, which link with the various aspects of Component 4, would be more useful. The suggested groupings of WPs were as follows:

- **WP13-15 (model development)
- **WP 6-7, 15, 21 (scenarios, emission deposition and application etc)
- **WP11-12, 16 (novel thresholds)
- **WP 8 and 17

It was suggested that we reflect on this after the discussions during the rest of the kick-off meeting. To allow for some work/development earlier in the project, it was proposed that there should be two timeslices when information is fed into Component 5. For the later delivery it must also be borne in mind that it will take two years to implement some of the updates feeding in from other workpackages.

Component 5

Risks for this component include the 'procedural' risk of results arriving too late from other participants.

To lend weight to the messages which are passed to stakeholders, we need output from more than one model and also a way to discuss the uncertainties in the systems (e.g. uncertainties in the climate drivers). It was noted that if we use a defined set of emissions, land-use change and climate in several models, and look at the resulting dispersion and deposition, this should

provide information on some of the uncertainties, for the policymakers. The overall message is that we need to provide information on the confidence of the messages which we are providing for policy relevant outcomes.

4. Initial identification of further links to be made with other programmes (e.g. PEGASOS, COST 0804 /ABBA, other projects)

Other projects were mentioned during the meeting as the need arose.