



Project Number 017841

NitroEurope IP

The nitrogen cycle and its influence on the European greenhouse gas balance.

Sixth Framework Programme

Priority 6.3

Global Change and Ecosystems

D2.5.1.

Kick off workshop

Due date of deliverable: **01/02/2006**

Actual submission date: **00/00/0000**

Start Date of Project: **01/02/2006**

Duration: **60 months**

Organisation name of lead contractor for this deliverable :
DTU

Revision: **Final**

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)	<input type="checkbox"/>
RE	Restricted to a group specified by the consortium (including the Commission Services)	<input type="checkbox"/>
CO	Confidential, only for members of the consortium (including the Commission Services)	<input type="checkbox"/>

16 March 2006

Decisions for C2 made at NEU kick off meeting in Garmisch

Meetings March 14, 9-12 and March 15, 10-11:30

All partners presented their site and manipulation experiments. There is a huge amount of information available and a wealth exiting experiments. The main issues for discussion and conclusion were:

- the list of measurements to be preformed at the sites as contribution to NEU
- protocols for the measurements
- timing.

As a background it was noted that

- C2 look for relative change due to the manipulation of drivers, however we should strive to close the N budget at the sites.
- Previous and ongoing measurements constrain the possibilities for harmonisation of methods.
- The budget provided by NEU also constrains the amount of work that can be asked for especially for associated sites.

Measurement list

A list of measurements suggested from earlier discussions among the activity leaders was discussed. The measurements were separated in 3 priority groups: Measurements where data are expected already to be available at the sites (priority 0); measurements that must be performed (priority 1); and optional (priority 2). The measurements agreed upon are listed in the table below.

Priority 0

During the discussions it was noted, that the data expect to be available may not be there for all cases. It will not in general be expected that this type of data must be measured if it is not available. In order to provide an overview of the data availability a parameter list was produced based on the model requirements. This list will be circulated as a questionnaire for each site to complete within the next 2 weeks. From the responses the modellers will create an overview, and guidelines for additional measurement needs may be circulated.

Priority 1

This is essentially the measurements that NEU pay for. Consequently, all sites agree to measure CH₄ and N₂O exchange fluxes at minimum 20 events over the year. The 20 measurements will have to combine the annual cycle and in addition identify the important events for each site.

Cases where the flux was considered insignificant were discussed. The conclusion was that we will need to show that it is the case, but without using too many resources on measuring insignificant fluxes.

Priority 2

CO2 is made optional although it will be nice to have. Denuders to measure ammonia/ammonium as used in C1 Level 1 are encouraged but then again the cost of just analysing the samples are 12 x 8 x 35 £ per year.

0 = Mandatory (expected to be present already)
 1 = Proposed measurements within NEU
 2 – Optional measurements

Priority	Measurement type	Core sites – 2 years of data	Associated sites - 1 year of data
0	Historical data (land use, land management, drainage etc. + All measured data relevant for N and GHG modelling)	All that is available	All that is available
0	Site characteristics - Soils (texture, pH, groundwater table etc.), plants (crop rotation, species list, management), slope	All	Soils, plants
0	Climatic conditions (standard climatic parameters)	Hour/day	Hour/day
0	Plot climatic data (Soil temp., soil moisture)	Minimum at flux meas. times	Minimum at flux meas. times
0	Soil C & N pool (inorganic, organic, different layers, 1m depth, fractionation if possible)	Once	Once
0	Biomass C & N (aboveground, belowground, peak season biomass, litter production, stubble incorporation microbial biomass)	Yearly/seasonal	Year
0	Management (seeding, harvest, fertilisation, grazing etc.)	Key event	Key event
0	N deposition (measure or estimate wet/dry and nitrogen form)	Month	Yearly
0	N export by biomass (harvest, grazing, fire)	Event	Event
1	Trace gas emissions (N ₂ O, CH ₄ , if possible also other N gases), incl. soil temp. and moisture at the time of sampling.	20/year (monthly + key events (freeze/thaw, rewetting....))	20/year (monthly + key events (freeze/thaw, rewetting....))
1	N Fixation (use legume fraction as proxy at sites where relevant)	Season	Season
1	Potential denitrification (potentially done centrally at 1 or few labs)	Once	Once
2	N-leaching/soil water concentration (lysimeter, porous cups, catchment runoff, resin bags)	Monthly	Year
2	Mineralisation/ Nitrification (buried bag)	Season	Season
2	Soil respiration (Total or fractionated – static chambers)	20/year (monthly + key events (freeze/thaw, rewetting....))	20/year (monthly + key events (freeze/thaw, rewetting....))
2	NEE (Static chambers – light and dark)	Frequent	Frequent

2	<i>NH3/NO2 concentrations (national inventory, C1-Level1 measurements)</i>	<i>Daily/monthly</i>	<i>Daily/monthly</i>
2	<i>Litter production and decomposition (mainly shrubland and forest – above and below ground)</i>	<i>Year + long term</i>	<i>Year</i>
2	<i>NO emissions</i>	<i>Optional</i>	<i>Optional</i>

Protocols

Together with C1, protocols for the priority 1 measurements will be produced and circulated. In case the measurement type is already established at the site and does not comply with the general protocol for NEU, we do not necessarily expect the measurements to be changed. In that case the PI will have to consider the importance of the incompliance and argue why. It will be difficult to have strict protocols on chamber size and replicates. There is some need to adjust to the site and the experiment as well as the resources provided for the measurements.

A task force with one representative from each WP was formed to produce the protocol for the gas measurements (Volunteers: Ute Skiba, Simona Castaldi, Pascal Boeckx and a representative from the grassland community. This will include guidance on chamber size, replicates, methodology, how to calculate fluxes, data to reject, guidelines on the timing of the measurements, i.e. which 'gas' events to go for with campaign measurements etc. A list of key references will be provided as well as a list of skilled people in the project which could be 'a partner' for those who need to learn. Another possibility is the summer school on methods in Austria in October 2006.

Other issues

It was raised if the reporting of data should be as 'relative change' or 'absolute numbers'. The conclusion was the later since this is what the models will need. Partners who need to visit other partners to learn methodology etc. may have a possibility to get grants for such visits from ESF (see the ESF-website).

Timing and deadlines

The start of the measurements will be site dependent, but the majority of sites will start measurements this year.

Project meeting is not anticipated before in a year from now. Ad hoc meetings will be arranged if need should arise.

Collection of existing data (priority 0) is less urgent and will await response from C3 as well as the central database set up.

Time steps:

- Send out questionnaire on model requirements (Claus – now)
- Receive questionnaires from all C2 sites (25. April)
- Response to questionnaires from C3 (1 May)
- Finalize list of measurements (WP leaders - now)

- Approve list of measurements (15 April)
- Circulation and approval of measurement protocols – methods described together with C1 (1. May)
- Start field measurements (Now & 2007)
- Prepare and send out template for submission of existing data to be used for modeling of all C2 sites – based on measurement list (collaboration between C2, C3 and C7 – Anne de Rudder (PI), Frank Homburg, Claire and Claus) – 1. July
- Deadline for data submission of existing data (1. December)
- Training (summer school or “side-by-side” – site/partner dependent)
- Data and Modelling workshop (February 2007)