

## **21. Participation in the UK national system and collaboration with other research activities (WP 4)**

### **21.1 Participation in the UK national system**

CEH has participated in the UK national system meetings as technical experts for LULUCF. We have maintained regular communication with AEA, the contractor responsible for the total UK inventory. We also contributed to the week-long UN in-country review of the UK's inventory and initial report under the Kyoto Protocol in March 2007, and responded to all of the reviewer's questions in a comprehensive and timely fashion. We also responded as required to the UN desk-based review of the inventory in January 2007.

### **21.2 Collaboration with other research activities**

CEH, and other project partners, have taken part in a number of research collaborations relevant to the inventory during the 2006/07 project year.

#### **21.2.1 National collaborations**

##### **ECOSSE**

This research project was led by the University of Aberdeen, with the Macaulay Institute, CEH, NSRI and Rothamsted Research as project partners, and was funded by the Scottish Executive and the Welsh Assembly Government. The aims of the project were: (1) to develop a new model of C and N dynamics that reflects conditions in organic soils in Scotland and Wales and predicts their likely responses to external factors; (2) to identify the extent of soils that can be considered organic in Scotland and Wales and provide an estimate of the carbon contained within them; and (3) to predict the contribution of CO<sub>2</sub>, nitrous oxide and methane emissions from organic soils in Scotland and Wales, and provide advice on how changes in land use and climate will affect the C and N balance.

CEH Edinburgh's contribution to this work was the development of more spatially and temporally detailed land use change matrices for Scotland and Wales. These matrices will be incorporated into the inventory methods, and equivalent land use change matrices are also being developed for England.

The ECOSSE model developed by the University of Aberdeen is of great interest to the inventory (see chapter 13, WP 2.9 and 2.10). Further information is available from the ECOSSE project final report.

Smith, P., Smith, J.U., Flynn, H., Killham, K., Rangel-Castro, I., Foereid, B., Aitkenhead, M., Chapman, S., Towers, W., Bell, J., Lumsdon, D., Milne, R., Thomson, A., Simmons, I., Skiba, U., Reynolds, B., Evans, C., Frogbrook, Z., Bradley, I., Whitmore, A., Falloon, P. 2007d. *ECOSSE: Estimating Carbon in Organic Soils - Sequestration and Emissions. Final Report*. SEERAD Report. ISBN 978 0 7559 1498 2. 166pp.

##### **LULUCF Emissions and Removals mapping (sub-contract with AEA)**

This sub-contract with the contractor responsible for the total UK inventory entails the development of methods to map LULUCF activities from the inventory at the local authority scale.

## **QUEST**

One of the main themes of QUEST, a NERC-funded UK research programme, is the contemporary carbon cycle and its interactions with climate and atmospheric chemistry. Several groups participating in the UK GHG Inventory project also apply common modelling approaches within QUEST (CEH, University of Aberdeen & University of Sheffield).

### **Forestry collaborations**

Ronnie Milne has collaborated with staff at the National Forest and at the Forestry Commission to produce projections of woodland carbon sequestration at small scales.

## **21.2.2 International collaborations**

Besides the abovementioned projects within the UK and constituent countries, there are a number of international collaborations that are relevant to the development of the UK GHG Inventory. There is also the potential for collaboration with the French LULUCF technical experts on estimates for overseas territories in the Caribbean.

### **NitroEurope IP**

This is an EU-funded integrated project led by CEH that aims to quantify the non-CO<sub>2</sub> GHG balance across Europe. CEH and the University of Aberdeen participate in NitroEurope. The project supplies information on GHG emissions as well as calculation methods that are useful for WP's 2 and 3 of the Inventory project.

### **CarboEurope IP**

CarboEurope also is an EU-funded integrated project, with UK participation by the CTCD group, CEH and the University of Aberdeen. The work in CarboEurope supports the Inventory activities in WP 2.14.

### **COST 639**

This is an EU-funded project on "Greenhouse gas budget of soils under changing climate and land use", and has UK involvement from CEH, University of Aberdeen, Forest Research and NSRI. One of the aims of COST 639 is providing recommendations on the improvement of national GHG inventories in particular the contribution from soils.