



IMPACCT Newsletter

Integrated Management Options for Agricultural Climate Change mitigation

August 2010, Issue 2

Welcome to the latest IMPACCT project newsletter.

IMPACCT is an EU funded research project focusing on the contribution agriculture makes to climate change, in particular the development of models and software tools to aid in the development and evaluation of policy and help farmers and growers identify and adopt agricultural practices that will reduce greenhouse gas emissions and increase carbon sequestration.

www.herts.ac.uk/aeru/impacct

Progress to date

It has been a central pillar of the IMPACCT project that it shouldn't 'reinvent the wheel', so early stages of the project focused on reviewing published sources to identify knowledge that could be incorporated into the IMPACCT system. Farm typologies used by other groups were examined to determine their appropriateness for use within this study. As a result, it was decided to adopt the one used by Member States and Eurostat in the analysis of the agricultural sector, in order to provide a familiar framework for the policy level data provision within the IMPACCT software.



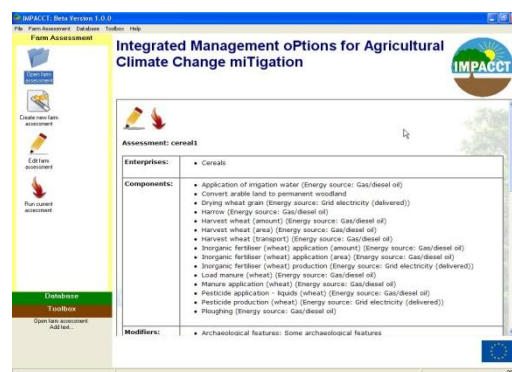
A similarly extensive review was carried out to identify a suitable structure for the knowledge base underlying the tools, and aid in its population. This covered the full range of issues relating to the emission of greenhouse gases from agricultural sources and carbon sequestration. In particular it focused on mitigation actions that could be taken on farms so as to increase sequestration and/or reduce GHG emissions, and the sectors and circumstances under which they could be adopted. Areas of interest covered included:

- Crop nutrition.
- Pest, weed and disease control.
- Machinery use and field operations.
- Cover (catch) crops.
- Water use and irrigation.
- Crop culture (e.g. polytunnel use).
- Rice cultivation.
- Glasshouse production.
- Nutrient use efficiency in livestock production.
- Enteric fermentation.
- Manure/slurry management.
- Soil organic carbon management.
- Plant biomass.
- Energy crops.

In addition, there has been an extensive period of consultation with industry stakeholders from across the EU in order to identify the wide range of systems that have been used to combat climate change, and the options that are available to agricultural producers in different countries. This was combined with a number of case studies have been used to further inform the data acquisition process. These early case studies focused on farms on which greenhouse gas (GHG) mitigation options had already been implemented, and provide information on practices that have been adopted to reduce emissions and increase sequestration across Europe, together with their associated economic and other environmental impacts. The work was carried out by consortium members from across the EU, and will ensure that the software tools developed take full account of regional differences in practices and opportunities for action.

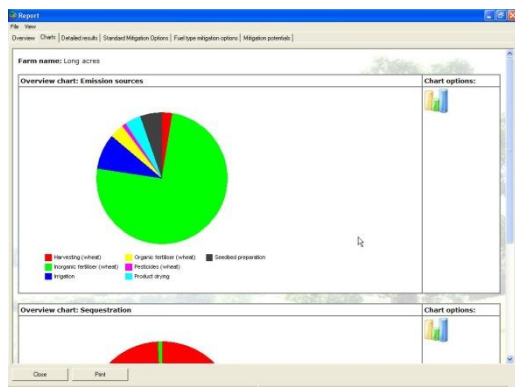
Beta version of the IMPACCT software released

The information identified above, has been structured into a database suitable for use by the IMPACCT software, which provides agricultural producers with the information they need to manage greenhouse gasses in their business activities, and make a positive contribution towards climate change mitigation. A key consideration in the design of the software has been to keep the user interface as simple as possible in order to ensure ease of use and maximise uptake. Nevertheless, the systems currently in place has room for improvement, a process that will be on-going, and for which input from users of the beta-version of the software, would be most appreciated, although case study farmers are already having their say (see below), and input is being sought from users across Europe.



The IMPACCT system is designed to allow producers to assess the activities carried out on their farms to determine an estimate of their greenhouse gas emissions and the levels of any carbon sequestration, and then obtain suggestions as to how to further improve the situation. This is done by providing details of a business's enterprises (e.g. crops grown, livestock raised) and the activities that go towards the management of those enterprises, from which the software makes an examination of a comprehensive database of emission/ sequestration factors, in order to provide tables of figures relating to the farm in question, as well simple graphical representations of key points. Areas in which there is potential for improvement are clearly highlighted, and suggestions made as to how this could be done in light of the farm profile provided, with an indication of the costs and benefits involved.

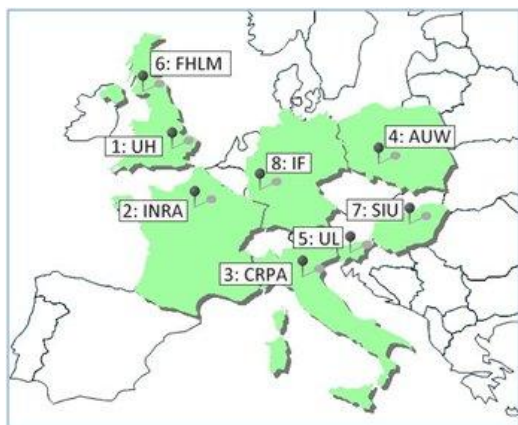
Importantly however, IMPACCT has adopted an integrated approach, so although it focuses on greenhouse gas emissions and sequestration, it also presents information on other potential environmental impacts, so that mitigation options can be viewed more holistically and emissions reductions are not pursued at the expense of other forms of environmental damage, or indeed at the expense of a farm's economic performance



The beta version can be downloaded for free from the IMPACCT website (www.herts.ac.uk/aeru/impacct), and we are keen to hear from anyone who identifies errors or has suggestions for improvements. A video demonstration is included within the software (under the Help menu) as a guide to help users start using the software. However, it should be remembered that the system is still a relatively

untested 'work in progress', and shouldn't at this stage be used as a basis for decisions, as it will undoubtedly contain some bugs. Nevertheless, we now have a firm basis for testing and assessing the underlying systems and procedures, and for taking on board the comments of industry stakeholders. To contact us with comments, email the team at aeru@herts.ac.uk.

Case study trials



The IMPACCT consortium members have been pressing ahead with a number of case studies intended to guide the development of and test the IMPACCT software, using farms of different types and in different locations. These studies have concentrated in farms on which few if any GHG mitigation activities have taken place, the aim being to introduce the tentative model, test the beta-version of the software, and get feedback. This work has been carried out on real farms, by an extensive network of researchers, and is intended to ensure representation from across Europe and a good cross-section of farm types and sizes.

There have been two site visits to each farm, the first to introduce the concept of the tool and obtain feedback which could be used to steer the development of the model, whilst the second involved the trialing of the beta version of the developed software. The purpose was to provide an objective, independent view of the software and so a 'semi-standardised' set of questions was developed in order to elicit information on:

- precise details of the characteristics of the farms visited,
- general comments and feedback on user-friendliness,
- suggestions for amendments to the reporting and recommendations side of the software, and
- any other ideas for improvements.

In addition, the data files for each farm were obtained so that detailed testing of the software could be carried out, and any problems found in using it on-farm could be easily replicated.

Dissemination activities

A number of dissemination activities have taken place throughout the project, including:

- A project website has been developed and is being used to disseminate the materials below, as well as providing more general information on the IMPACCT project.
- A project leaflet has been created, agreed by the consortium.
- A poster was presented at the 'The Dundee Conference - Environmental Management and Crop Protection' held in Dundee, Scotland on 23rd-24th Feb 2010.
- The European case studies undertaken (Phase I) have been summarised and are available for download.



This work will continue beyond the end of the project, in order to provide an on-line library of relevant information, and will be added too for as long as there as new material to release.