This Newsletter is a communication medium within CATCH-C and towards interested public. Relevant direct links are highlighted in blue. Suggestions, questions and announcements from you are warmly welcomed and can be sent to

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News to be presented at the webpage and any suggestions on this medium can be sent to

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NEWS

1. Midterm report
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Precisely in time the midterm report was submitted to Brussels and uploaded to the website. Please find it in the member area of the website (www.catch-c.eu folder "completed files", section "management"). The report gives an impressive overview of the achievements of Catch-C. Though all participants served contributions, it was Hein, who put all these things together. Let us stay on the ball for the second half-time 😊

2. CATCH-C report finished: Current management practice and soil degradation across FTZs
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This month the CATCH-C report on current application of management practices and soil degradation will be submitted to the European Commission. In addition, the regions on which the CATCH-C project is focusing and the farm typology that is used are explained. Balancing between the use of uniform European classifications and the harsh reality of local understandings, for example to describe soil texture or land use, this report has used the Dutch Poldermodel. Starting from strict European classifications, we have converged to a more varied approach in which countries have selected the farm types and regions according to their national expertise. In every country 3 to 4 types of farms within a region with similar biophysical conditions (soil texture, climate and slope) have been chosen and are now called Farm Type per Agri-environmental zone, in short: FTZ. As to be expected this abbreviation is often used in the report and will probably remain part of the CATCH-C vocabulary.

For each FTZ, an inventory was made of current management practices. Interviews with agricultural extension officers were held last winter and spring and estimates were made of the farm area on which each practice is currently used. During the course of our work, the other parts of CATCH-C were also moving forward. The database of long term experiments was getting filled and interviews with farmers on certain management practices were being conducted all over Europe. It became clear that most work was being done on a limited number of management options, namely: tillage practices, nutrient management, green manures and crop residues. To align our efforts, we decided to only focus on these categories in our publication. The results show mixed patterns of uptake of practices across countries. For example, non-inversion tillage shows high variation across FTZs (see figure below). This raises questions about the effectiveness of non-inversion tillage in different climates and on different soil types, but also about the possible barriers for farmers to adopt this practice. Hopefully the analysis of long term experiments (Work package 3) and the farmers survey (Work package 4) will allow more insights in these questions raised.

Extend of soil degradation in each FTZ was recorded by using national maps and the expertise of agricultural extension officers. This effort resulted in tables with mainly qualitative indications of soil degradation. The overview of the main soil degradation problems shows that problems can partly be explained from current soil

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1 The CATCH-C project aims at identifying and improving the farm compatibility of sustainable soil management practices for farm productivity, climate-change mitigation, and soil quality. The project is carried out by a consortium of 12 partners, led by Stichting Dienst Landbouwkundig Onderzoek (DLO), The Netherlands.

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management on farm (e.g. sub-soil compaction due to the use of heavy machinery), but often too from unmanageable factors like climate (e.g. salinization and desertification in southern Europe).

Would you like to know more details? The report will be published soon on the CATCH-C website, so keep an eye on www.catch-c.eu.

![Tillage practices across arable farms](image)

**Figure 1: Tillage practices across arable farms within different agri-environmental zones in Europe**

### 3. Soil Carbon Sequestration for Climate, Food security and Ecosystem Services.

**International conference Reykjavik, Iceland, 27-29 May 2013**

**Visit report by Hein ten Berge**

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Last May I attended the conference on soil carbon sequestration in Iceland (http://scs2013.land.is). The exciting event was organised by the Soil Conservation Service of Iceland (SCSI) and the Agricultural University of Iceland in collaboration with several international and Icelandic organizations.

Some will associate Iceland with pristine landscapes, but soil conservation has long been a very serious national concern. High winds, coarse soil texture, fresh ash deposition, and the short growing season all make the land very susceptible to overgrazing and wind erosion. The SCSI was established in 1907, making it the oldest soil conservation service in the world! The first settlers, over 1100 years ago, came to a fertile land. Vegetation may have covered 60% of the country, and birch (Betula pubescens) woodlands covered at least 25%. But the woods were cut, burned and grazed. Virtually all tree cover was lost. Only 1% of Iceland is now under tree cover. During degradation, vast amounts of carbon were lost from Icelandic ecosystems. It is estimated that an equivalent of up to 1.8 billion tons of CO$_2$ has been lost from soil and vegetation since first settlement. For comparison, annual CO$_2$ emissions from human activities in Iceland are about 3 million tons CO$_2$. The first 50 years of SCSI work were mostly devoted to the fight against shifting sands. Protective fences, stone and timber walls were erected, and Beach Wildrye (Leymus arenarius) was seeded extensively. This grass can immobilize dunes with its deep roots. Today, emphasis has shifted towards restoration of damaged ecosystems and soils. SCSI provides guidance and leadership to all who can provide “land care”. About 20% of the nation’s sheep farmers, and a number of other land users participate in this conservation work referred to as “Farmers Heal the Land”. Numerous organizations and volunteers join them. (text adapted from the SCSI website www.land.is.)

The field trip on Sunday highlighted the above history and status. After the opening address on Monday by Mr Ólafur Grímsson, President of Iceland, the first day was devoted to a broad survey of the topic of C sequestration. Next, there were various parallel sessions on the potential of different soils and habitats (forest, range-land, cropland, wetland) to store soil carbon. In the session on “Verification, permanency and Action”, I was given the opportunity to present a paper entitled “The Catch-C and SmartSOIL Twin Projects on Sustainable Soil Management in EU FP7”, co-authored by Jorgen Olesen of Arhus University. We received good responses, notably from policy makers who expressed an appreciation for our practical approach. The last session “How to ensure that soils are part of the solution” focussed on legal and institutional frameworks to account for soil carbon and to implement policies. The conference was very well prepared and executed, with some 75 orals and 72 posters. There were about 200 participants to enjoy the excellent presentations by colleagues, as well as the fine ambiance throughout daytime and evening programs. Other participants from the Catch-C consortium were Alina Syp and Renske Hijbeek.
4. **Presentation of the Catch-C project in the “Soil conservation Day” workshop**  
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In the early 20th century, soil scientist Hugh Hammond Bennett pioneered the soil conservation movement in the United States. He founded a new federal agency, the Soil Conservation Service, which became later on the Natural Resources Conservation Service (NRCS). Nowadays Bennett is considered the father of soil conservation. His death on July 7th 1960 and his life-long work are worldwide commemorated by the Soil Conservation Day. The Agrifood Campus of International Excellence (ceiA3) celebrated last July 9th, the ‘Soil Conservation Day’ with a workshop where international experts on soil conservation and farmers analyzed current challenges and possible solutions to preserve soil quality in agricultural soils throughout Spain, with special emphasis on Andalusia. The workshop was organized by the University of Cordoba (UCO), the Botanical Garden of Cordoba (IMGEMA), the Research and Training Institute for Agriculture and Fisheries (IFAPA), and the Institute of Sustainable Agriculture CSIC (IAS-CSIC).

Rodolfo Gil, from the National Institute of Agricultural Technology (INTA) Argentina, talked about his experience studying the effects of direct drilling during the morning (http://www.ceia3.es/es/tv/159-rodolfo-gil-dia-conservacion-suelo, in Spanish) and coordinated the discussion in the afternoon. During this debate, farmers exposed some of the problems they face in their respective farms, while scientist and technicians analyzed the possible causes of those problems and provided possible solutions (http://www.ceia3.es/es/tv/162-dia-de-la-conservacion-del-suelo-mesa-redonda, in Spanish). Also a short film of 8 minutes to promote soil conservation among farmers (http://vimeo.com/70400462, in Spanish) was presented. It gives an overview of an experiment with two soil managements (conventional tillage and cover crops), consisting of several runoff plots in an olive orchard. Furthermore, there was a poster session in which the different ceiA3 groups working on soil conservation presented the last results of their work. For these reasons, this workshop was a must for the CATCH-C project as one of its main objectives is the assessment of soil quality under different soil managements. The UCO and IFAPA teams presented the poster entitled ‘European Union, agriculture and sustainable management: CATCH-C project’.

The poster provided a brief introduction to the CATCH-C project, and summarized each of the work packages, showing some of the results obtained for Spain, especially concerning WP2 and WP3.

**OTHERS**

**Presentation of Catch-C PhD Students**

Norman Schlatter: University of Natural Resources and Life Sciences, Vienna  
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I still remember the beginning of the EU research project Catch C. I had recently started at the AGES – Austrian Agency for Health and Food Safety and it was my first trip abroad as part of a large EU project. The initial uncertainty and excitement in the kick off meeting disappeared very quickly after I realized that the project participants tried to create a friendly, courteous and constructive atmosphere at this first meeting. Despite different ideas and opinions the following project or WP meetings were always marked by the enthusiasm to minimize these differences and work together on the implementation and achievement of project objectives.

Before I joined the Catch C project I was already employed at the AGES in the context of the EU project Slagfertilizer for half a year. My task in this project area in-
includes the development of a method for the determination of soil respiration by substrate-induced respiration (SIR) based on the respirometer oxitop OC110. Overall it describes the measurement of microbial respiration activity of soil fertilized with slag.

Prior to my work at the AGES I studied agricultural and applied plant sciences at the University of Natural Resources and Life Sciences in Vienna with the main focus on plant production and soil sciences. Based on internships during my studies I have gained experiences in the public and private sector in different companies during this time. This includes AGES, Arche Noah - Society for the Conservation of Crop Diversity, Seed Breeding Edelhof – Breeding of Cereals.

In 2012 I finished my master thesis entitled "Development of a high-resolution genetic map for QTL region Qfhs.ifa-SA in wheat" at the Inter-university Department of Agrobiotechnology (IFA -Tulln), Institute for Biotechnology in Plant Production.

For my PhD I would like to focus on the subjects of CO2, which plays an important role as a "greenhouse gas" in global warming, and carbon in form of humus, which protects the soil in agriculture in many ways. This will be done in the representation/measurement of different carbon fractions and determination of the carbon behavior in different management practices in long-term experiments. Another issue in my PhD is the biological activity in various management systems/practices in this overall context.

Establishing a Photo Gallery
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Photographs are an essential tool for visualisation and knowledge transfer. Photos can also be very helpful for pointing out what is meant with “Best Management Practice”. Within workpackage 6 (dissemination) a start was made to establish a photo gallery of illustrative pictures showing many issues of soil cultivation, crops, landscapes and other situations. This gallery is free for all Catch-C members. You can find them in the member area of the Catch-C website. Go to member area/work area/WP6-dissemination/pictures. There are just a very few guidelines for use.

The first set of photos was provided by Horst Steinmann. The file name gives a short title of what is displayed on the picture and a signature of the author (HS). The photos can be used for any purpose of the Catch-C project. For use in printed or pdf matter it would be nice to give credit to the author at a suitable place. If you want to use some photos for other purpose than Catch-C issues, please contact the author. Please avoid, that others (third parties) use the photos inconsiderately, especially for commercial interests. Other Catch-C members are encouraged to offer own photos in the same way. The website offers up- and download functions.

The files are originally as they came out of the camera, about 2.5 MB. For some uses, e.g. beamer presentations, you are recommended to compress or downsize the files.

“Dust Bowl”. Is this a Best Management Practice of soil tillage?

“Soil Structure Maize”. Maize seeded in a ploughed soil and heavy rainfalls inbetween.
“Incorporating organic manure”. A strip till injector for animal slurry.

**MEETINGS**

29-30 October 2013  Work package 3
October/November 2013 (?)  Work package 5 (?)
Mid January 2014  Work package 4
3-4 February 2014  Catch-C General Assembly hosted by Universidad de Cordoba

Please consult the calendar on the main Portal for more information.