

NEWSLETTER N°1, March 2019

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1. WELCOME MESSAGE

Welcome to the Newsletter launched by the Croplands Research Group of the Global Research Alliance. The Croplands Newsletter aims to gather short notes on relevant Mitigation and Adaptation initiatives and project results that can be expanded through links for those interested. . Contributions also provide insights for policy-makers to consider in their National/Regional Policies. So, do not hesitate to send us contributions from any part of the world. We do hope you contribute and enjoy reading it!

Croplands Research Group Co-Chairs Team

2. THE “4 PER 1000” INITIATIVE: Soils for Food Security and Climate

The international initiative "4 per 1000", launched by France on 1st December 2015 at the COP 21, consists of bringing together all voluntary stakeholders of the public and private sectors (national governments, local and regional governments, companies, trade organisations, NGOs, research facilities, etc.) under the framework of the Lima-Paris Action Plan (LPAP). The aim of the initiative is to demonstrate that agriculture, and in particular agricultural soils can play a crucial role where food security and climate change are concerned. In this context, the ambition of the “4 per 1000” Initiative is to encourage lands users to transition towards a productive, highly resilient agriculture, based on the appropriate management of land and soils, creating jobs and incomes hence ensuring sustainable development.

Supported by credible scientific documentation, the "4 per 1000" initiative invites all stakeholders to state or implement practical actions on soil carbon storage and management practices to achieve this (e.g. agroforestry, agroecology, conservation agriculture, landscape management, etc.). Moreover, we need to better quantify soil carbon stocks and encourage farmers to adopt agricultural practices to conserve and increase carbon stocks. That is why all stakeholders (farmers, economic players, NGOs, regional and local authorities, countries, International organizations, development banks, foundations, etc.) are supporting projects around the "4 per 1000" Initiative.

The "4 per 1000" initiative comprises two themes:

- A scientific part led by the Scientific and Technical Committee with:
 - i) Guidelines for an international programme of research and scientific cooperation
 - ii) Reference criteria and indicators for projects assessment
- A development part based on field activities:
 - i) A collaborative platform open to partners and members
 - ii) A digital resource centre on soil organic carbon management (under construction)

More info [here](#).

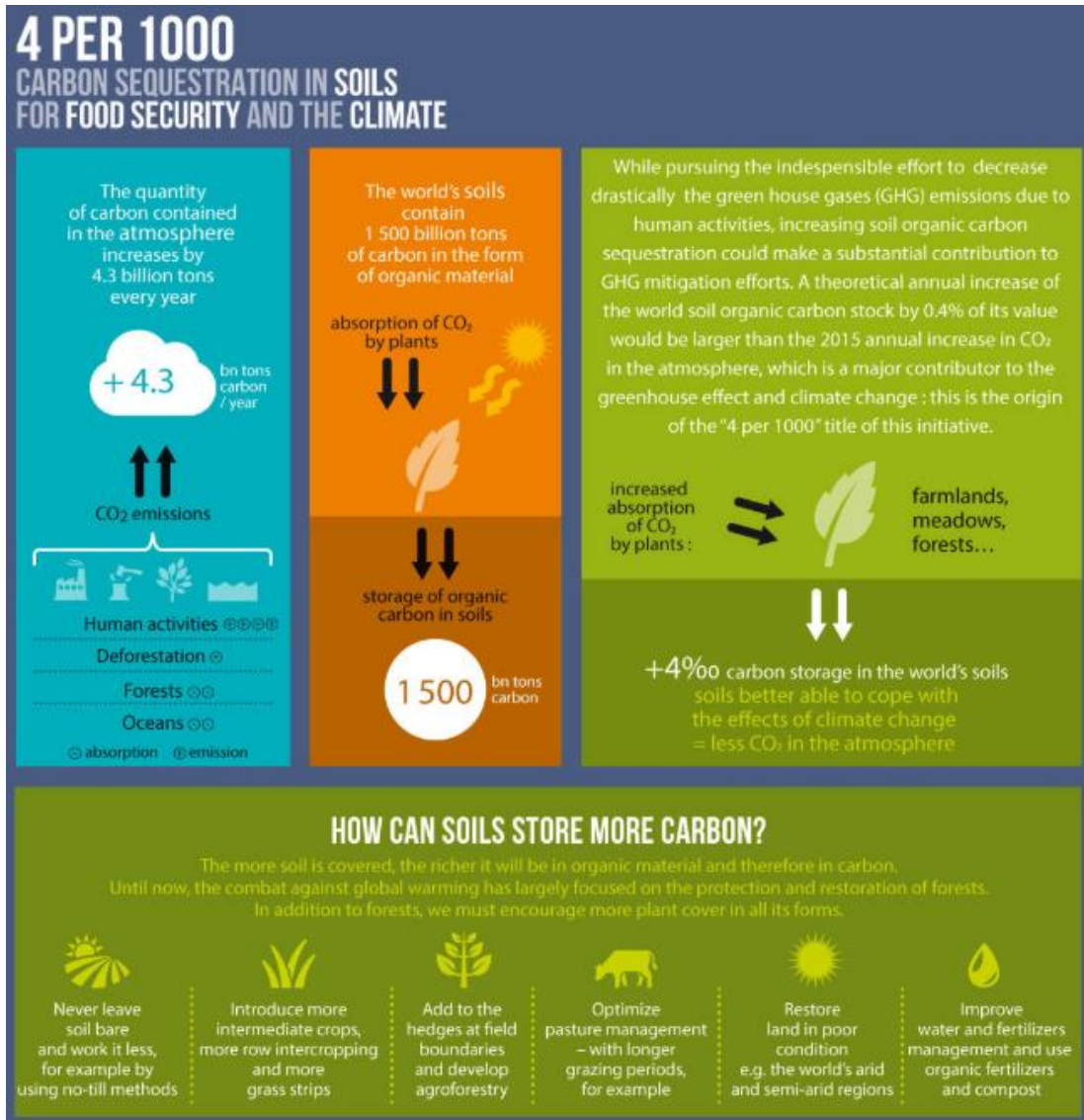


Figure 1: The "4 per 1000" initiative at a glance.

Source: Paloma Melgarejo and Paul Luu, "4 per 1000" Initiative.

3. BRAZIL MAINTAINS AGENDA ON SUSTAINABLE INTENSIFICATION IN 2019

As have been presented in some of Annual Meeting of Croplands Research Group, Brazil established in 2012 a Low Carbon Agriculture Plan to stimulate conservative agricultural practices for reduction and mitigation of greenhouse gas emission. There are six eligible practices that farmers can adopt to participate in the associated program, they are: use of

no-tillage, integrated crop-livestock-forest systems, pastureland recovery, planted forest, biological nitrogen fixation and animal dejects management.

Particularly the integrated crop-livestock-forest systems (ICLF) have gaining relevant adoption of farmers reaching to 11.5 mi of ha, in 2016, as it was determined by a national survey, conducted by a public-private alliance to stimulate adoption of ICLF (called in Portuguese- "[Rede ILPF](#)" - or translating to English - ICLF Network-). Embrapa is the only public institution in this alliance.

Several activities are supported by ICLF Network including field days to farmers' attendance, scientific and technologic meetings, technological transfer projects and more recently scientific projects call was launched. One of more traditional field day on ICLF will be held in March 28 and 29 of this year (it will be 13^o annual event). In the last edition, in 2018, around one thousand participants were in Santa Brigida Farm, in the city of Ipameri, Goias State (in the center of savannah area of Brazil), knowing in field conditions how conciliate crop-livestock-forest production with economic benefit to farmers and reducing environmental impact, with soil carbon sequestration, for example. Impressive images can be seen in the [video from 2018 Field Day](#).

Another event that is scheduled in this first semester is the [3rd Matogrossense Meeting on Integrated Crop-Livestock System](#), to be held in April 09-11, 2019, in Rondonopolis city, Mato Grosso State. Content of this meeting is from scientific character looking for results about productivity aspects, new challenges to soil management, impacts of adopting integrated systems in different regions of Brazil, and mainly in the biggest agricultural production state of country, Mato Grosso.

The agenda of ICLF is driven by farmer' adoption, and the need to generate a scientific basis for competitive and sustainable agriculture in the tropics.

Source: Ladislau Martin Neto, Brazilian Agricultural Research Corporation, National Center for Research and Development of Agricultural Instrumentation, São Carlos, Brasil

4. SILVOPASTORAL SYSTEMS AS CLIMATE SMART AGRICULTURAL PRACTICE IN ARGENTINA

In norhthern Entre Rios (Argentina), a profound modification of the ecosystem had taken place because of land use change, where one third of native forests were "cleared" mainly for agricultural use. After the "productive" period, the fields were abandoned and the ecosystem

could not restore tree cover. Understory strata have been altered in such a way that heliophilous and invasive plants are gaining coverage in the present. This situation does not allow native grassland species (predominantly Poaceae species) to recover. Even though agriculture, forestry and other land use are responsible for one quarter of total greenhouse gas emissions they have a huge potential to capture carbon dioxide if it is well managed. In this way, in this region silvopastoral systems (SPS) contribute to mitigate climate change effects with above- and below-ground carbon sequestration and reduced nitrogen applications if *Fabacea* trees are used. Also, soil organic matter levels can be raised. Therefore, we are working testing SPS, considered as a Climate Smart Agricultural Practice, ([World Bank, CIAT and CATIE, 2014](#)) based on native tree species ([particularly *Prosopis alba*](#)) to restore the abandoned fields. Adaptation to climate change could be enhanced in this SPS due to a greater resilience of cattle production systems to climate variability and reduced heat stress on animals.



Figure 2: *Baccharis* sp. invasion in a deforested plot (a), technicians visiting our *Prosopis alba* nursery (b), project presentation to producers (c) and field activities (transplanting) (d).

Source: Nicolas Vaiman, *Agrometeorología*, EEA Concepción del Uruguay – INTA, Entre Ríos, Argentina.

5. PROJECTS ON CLIMATE CHANGE

5.1 AFINET project

The Agroforestry Innovation Network, [AFINET](#), is a Thematic Network funded by the European Union aiming at collating already existing practical and research innovations about agroforestry and foster its usability by the main end-users such as farmers or policy-makers. Agroforestry (AF) is a climate-smart agriculture (CSA) practice of deliberately integrating woody vegetation (trees or shrubs) with crop and/or animal systems to benefit from the resulting ecological and economic interactions. It can be recognized as a proactive “negative emissions technology” that can foster sustainability in the current changing climate conditions. However, there are knowledge gaps to be filled regarding agroforestry, as well as bottlenecks and challenges. These could be solved by providing greater access to research findings (either published or unpublished) and identifying and extending good practices that farmers are already implementing.

Based on the economic and environmental relevance of this activity, a consortium of 13 partners from 9 European countries, launched AFINET (AgroForestry Innovation NETworks), a thematic network aiming to foster the exchange and the knowledge transfer of agroforestry among scientists and practitioners in Europe. AFINET works at EU level to take up research results into practice and to promote innovative ideas to face challenges and resolve problems of practitioners in all types of lands (croplands, grasslands and forestry). To achieve this objective AFINET has proposed an innovative methodology based on:

(i) The creation of a European Interregional network, composed of ‘Regional Agroforestry Innovation Networks (RAINs)’, working groups created in 9 strategic regions of Europe (Spain, UK, Belgium, Portugal, Italy, Hungary, Poland, France, and Finland). RAINs represent different climatic, geographical, social and cultural conditions and they include a balanced representation of the key actors with complementary types of knowledge: farmers, policy-makers, advisory services, extension services, etc. After two years of AFINET, the networks involve over 500 stakeholders. These meetings have concluded that there are 4 main challenges to be overcome in order to foster agroforestry adoption (i) locally adapted technical solutions (ii) economic viability evaluation (iii) education for farmers and communication to end-users and (iv) adequate policy. Farmers also provided solutions to these challenges that sum up almost 100 innovations that will be tackled in the web page of AFINET.

(ii) The creation of a European Innovation Knowledge Reservoir of scientific and practical knowledge of agroforestry with user-friendly access (the ‘Knowledge Cloud’). This Innovation

Knowledge Reservoir is created and have hundreds of documents about agroforestry already uploaded.

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Source: Maria Rosa Mosquera-Losada, Coordinator of the AFINET project, University of Santiago de Compostela, Spain.

5.2 The SheepToShip LIFE project

SheepToShip LIFE (LIFE15 CCM/IT/00123) is a project funded by the European Commission under the LIFE programme - Climate Action - Climate Change Mitigation.

SheepToShip LIFE seeks to contribute in a practical way to EU climate change objectives by helping to reduce emissions of greenhouse gases from the sheep farming sector and dairy supply chain in Sardinia. The main objective of the project is to reduce by 20% in 10 years greenhouse gas (GHG) emissions (nitrous oxide – N₂O, methane – CH₄ and carbon dioxide – CO₂) from the Sardinian livestock sector and sheep industry.

The immediate objectives of the project are:

- Encouraging environmental improvements of production systems in the sheep sector and demonstrating the environmental, economic and social benefits deriving from eco-innovation in the dairy supply chain and sheep farming sector;
- Promoting the implementation of environmental policies and rural development, guided by the life-cycle approach, and aimed at enhancing the environmental quality of local sheep's milk and cheese supply chains;
- Increasing the level of knowledge and awareness of stakeholders and the general public regarding the environmental sustainability of products made from sheep's milk and their contribution to the mitigation of climate change.

SheepToShip LIFE is aligned to the Europe 2020 strategy and in line with EU policies and regulations in terms of combating climate change, environmental protection and sustainable development. It demonstrates strategic and methodological approaches to develop knowledge for estimating and monitoring the mitigation measures of climate change, and applying good practices and solutions for the reduction of GHG emissions in the sheep sector in Sardinia.

In this project were individuated twenty dairy sheep farms, representative of Sardinian sheep milk production system where were carried out the LCA studies. Fourteen farms out of twenty

contains agroforestry areas, with specific practice types such as silvopastures (mainly silvopastoral grazed oak systems and meadow orchards) and agrosilvipastures (understorey cereal and forage crops, seasonally grazed). The role of agroforestry land uses on the environmental performances of animal productions and on their relative GHG emissions at farm level will be assessed.

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Source: Antonello Franca. C.N.R. - ISPAAM, Istituto per il Sistema Produzione Animale in Ambiente Mediterraneo, SASSARI, ITALY.

6. MISCELLANEOUS

VII Remedia Workshop

The VII Remedia Workshop “Agroforestry Systems as a Solution to Climate Change” will take place in Lugo, Spain, Europe, during 27th – 28th March 2019. The workshop will include sessions about mitigation of GHG in livestock, agricultural and forest systems within the framework of the agroforestry systems. More info [here](#).

4th World Congress on Agroforestry

The 4th World Congress on Agroforestry “Agroforestry: Strengthening links between science, society and policy” will take place in Montpellier, France, Europe, during 20th – 25th May 2019. The overall objective of the Congress is to contribute to the strengthening of agroforestry science and practice in order to provide opportunities for strengthening links between science, society and policy and to bridge the science-policy gap. More info [here](#).

Food security and climate change: 4 per 1000 initiative new tangible global challenges

The Conference “*Food security and climate change: 4 per 1000 initiative new tangible global challenges*” will take place in Poitiers, France during 17th-20th June 2019. The conference aims to build partnerships for soil sustainability and resilience, promote innovation and knowledge exchange, and ensure that appropriate solutions are put into practices under the framework of the 4 per 1000 initiative. More info [here](#).

ASA-CSSA-SSSA: Embracing the Digital Environment

The conference “ASA-CSSA-SSSA: Embracing the Digital Environment” will take place in San Antonio, Texas, USA from 10th to 13th November 2019. The conference aims include embracing the use of sensor technology, communications networks, satellite imagery, drones, machine learning, as well as gathering data more frequently and accurately, the digital environment can enable producers, CCAs, consultants, and researchers to reduce input costs, increase food production, and improve environmental quality. The digital environment also allows for enhanced data dissemination, opening new avenues for enhanced (agro)ecosystems globally. More information can be found [here](#).

GRA Croplands Research Group Annual Meeting

The 11th annual meeting of the Croplands Research Group of the Global Research Alliance (GRA) on Agricultural Greenhouse Gases will be held in San Antonio, TX, USA on 14 November 2019, immediately following the ASA-CSSA-SSSA conference (reviewed above). Additional information, including registration details, will be made available soon from the GRA Secretariat.

2nd Agroecology Europe Forum

The 2nd Agroecology Europe Forum, will take place will take place in Heraklion, Crete, Greece, Europe during 26th – 28th September 2019. The overall objective of the Congress is to answer the following questions: What should be the Common Agricultural Policy (CAP) in the future for promoting agroecology? Which local practices and policies exist in Europe that support access to land for young and first generation farmers? Which traditional and new knowledge is available on soil restoration and biodiversity enhancements?. More info [here](#).

Latest winners of the GRA-CCAFS PhD programme CLIFF-GRADS

We are pleased to announce 2019 CLIFF-GRADS fellows and research projects below. More information can be found in the [global research alliance](#) and [CGIAR](#) web pages. CLIFF-GRADS is an international doctorate scholarship programme designed to support budding agricultural scientists. Some 212 applicants from more than 50 developing countries applied to this latest round of the programme, as compared to 65 applicants from 23 countries in the first round earlier this year. The second round of 27 from more than 18 countries successful candidates of the GRA and CGIAR Research Programme on Climate Change (CCAFS) joint CLIFF-GRADS initiative for 2019 have been announced.

This is your newsletter! If there's anything you think should be included, please send suggestions to mrosa.mosquera.losada@usc.es for the next issue

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