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Updated CiteScore of ISWCR

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International Soil and Water Conservation Research

Open Access

Scopus coverage years: from 2013 to present

Publisher: International Research and Training Center on Erosion and Sedimentation and China Water and Power Press

ISSN: 2095-6339

Subject area: Environmental Science: Water Science and Technology
 Environmental Science: Nature and Landscape Conservation
 Agricultural and Biological Sciences: Agronomy and Crop Science
 Agricultural and Biological Sciences: Soil Science

CiteScoreTracker 2019 Last updated on 08 December, 2019
Updated monthly

4.32

$$= \frac{\text{Citation Count 2019}}{\text{Documents 2016 - 2018}} = \frac{484 \text{ Citations to date}}{112 \text{ Documents to date}}$$

CiteScore rank 2018 In category: Water Science and Technology

★	#12	International Soil and Water Conservation Research	4.08	94th percentile
	203			
Rank		Source title	CiteScore 2018	Percentile

CiteScore rank 2018 In category: Agronomy and Crop Science

★	#23	International Soil and Water Conservation Research	4.08	92nd percentile
	320			
Rank		Source title	CiteScore 2018	Percentile

CiteScore rank 2018 In category: Nature and Landscape Conser...

☆	#12	International Soil and Water Conservation Research	4.08	91st percentile
	141			
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CiteScore rank 2018 In category: Soil Science

☆	#13	International Soil and Water Conservation Research	4.08	89th percentile
	116			
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Paper Collection of ISWCR 2019

Pisha sandstone: Causes, processes and erosion options for its control and prospects

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Modelling surface runoff using the soil conservation service-curve number method in a drought prone agro-ecological zone in Rwanda

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Sustainable land management practices, off-farm work participation and vulnerability among farmers in Ghana: Is there a nexus?

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Soil: Our Hidden Ally!

As part of the natural functions and ecosystem services provided by soils, a healthy soil stores more carbon than that stored in the atmosphere and vegetation (Ciais et al., 2013) combined (Figure 1a). Based on soil organic matter's stabilization mechanisms (i.e., physical, chemical, biochemical, microbial and ecological), soil carbon can remain sequestered in the soil for thousands of years (Stockmann et al., 2013; Wiesmeier, 2019).



Figure 1a. Global carbon stocks and global emissions. Gt = gigatonne = 1015gC

However, the world's cultivated soils have lost between 25 to 75 percent of their original carbon stock (Lal, 2018, 2004; Lorenz and Lal, 2018), which has been released into the atmosphere in the form of CO₂, mainly due to unsustainable management practices resulting in land degradation and amplifying climate change and its impacts. Land degradation lowers a soil's ability to maintain and store carbon, contributing to global threats such as climate change, with an estimated cost of trillions of dollars every year (Davies, 2017).

The implementation of proven soil organic carbon (SOC)-centered sustainable soil management (SSM) practices for maintaining carbon rich soils (peatlands, black soils, permafrost, etc.) and for sequestering more carbon in soils with such potential (croplands and degraded soils) would address the challenge of compensating global greenhouse gas (GHG) emissions (Figure 2).

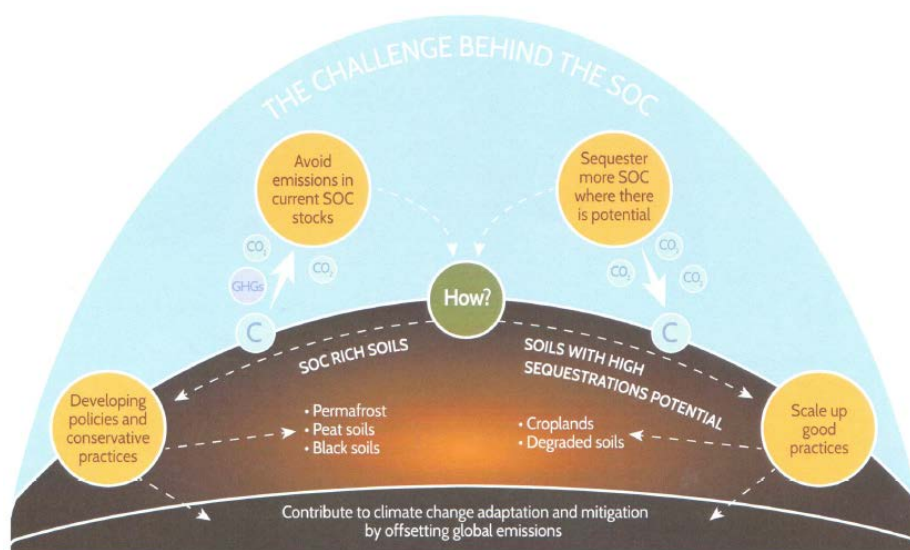


Figure 2. The challenge behind SOC and SOC-centered sustainable

SOC-centered SSM. practices not only mitigate CHCs emissions but also provide multiple benefits such as enhancing food security and farm income, reducing poverty and malnutrition, providing essential ecosystem services (climate and hydrological regulation, biodiversity maintenance, and nutrient cycling, among others), contributing to the achievements of the Sustainable Development Goals (SDGs) and building resilience to extreme climatic events (Figure 3).

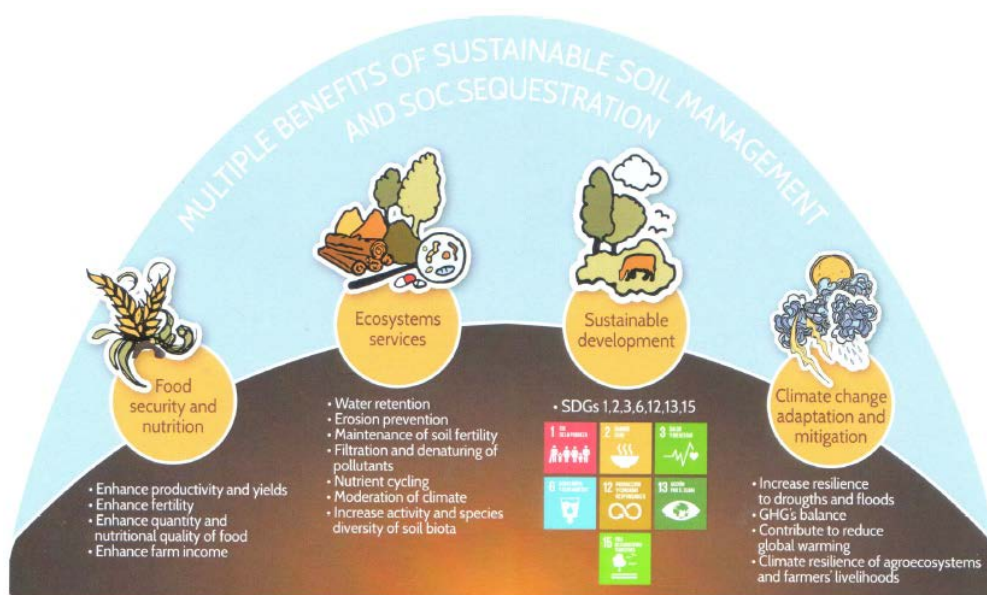


Figure 3. Multiple benefits provided by sustainable soil management practices based on SOC

Global Greenhouse Gases Emissions: A Race Against Time

Nationally determined contributions (NDCs) are the backbone of the Paris Agreement, with the main goal to limit warming to 1.5 to 2 °C above pre-industrial levels. NDCs reflect countries' climate change adaptation and mitigation priorities for the post-2020 period, including concrete targets and actions. In 2016, the Food and Agriculture Organization of the United Nations (FAO) analyzed the Intended NDCs (INDCs) and found promising mitigation potential from the agriculture sectors for climate change adaptation and mitigation (FAQ, 2016), considering all levels of socio-economic development and all regions (86 percent of developing, 88 percent in transition and 98 percent developed countries include agriculture and/or LULUCF in their mitigation contributions).

In contrast, according to the Intergovernmental Panel on Climate Change (IPCC) Special Report (IPCC, 2018) and the Emissions Gap Report by UN Environment (UNEP, 2018), current commitments expressed in the NDCs are inadequate to bridge the emissions gap in 2030. They affirm that it is still technically possible to bridge the gap to ensure global warming stays below the established levels, but if NDCs ambitions are not increased before 2030, exceeding the 1.5 °C goal will be unavoidable. On the other hand, global CO₂ emissions from energy and industry increased by 0.7 Gt CO₂e From 2016 to 2017, following a three years period of stabilization. The result of this increase produced a record total emission of 53 Gt CO₂e in 2017 (Figure 1a). The report also highlights that global GHGs emissions in 2030 should be approximately 25-55 percent lower than in 2017 to put the world on a least-cost way to limiting global warming below the established levels.

The Challenge Today

After the publication of the Status of the World's Soil Resources report (FAO and ITPS, 2015), in which it is concluded that SOC loss is the second largest global threat to soil functions, the Global Soil Partnership (GSP) has been actively working towards measuring, monitoring, managing, maintaining and/or increasing SOC stocks, keeping in mind the threats of global warming and food insecurity.

It is well known that SOC is the main indicator of soil health, and is responsible for many soil functions, providing many ecosystem services, and constituting the largest terrestrial carbon pool. SOC therefore plays a crucial role in the global carbon balance by regulating dynamic biogeochemical processes and the exchange of GHGs. It is estimated that we have released

considerable amounts of CO₂ into the atmosphere caused by land use change and unsustainable agricultural practices, translated into historical SOC depletion of 115-154 (average of 135 Gt C) (Lal, 2018) (Figure 1b). For this reason, we must take advantage of the vast existing knowledge about SOC and the soil's inherent capacity to sequester carbon and mitigate CO₂ emissions.



Figure 1b. Global historical soil organic carbon depletion since the nineteenth century

It is estimated that the global technical potential of SOC sequestration is of 1.45-3.44 Gt C (5.3-12.6 Gt CO₂) per year (Lal, 2018). This represents between 38-91 percent of the global power industry fossil emissions, 67-100 percent of the global transport fossil emissions (Muntean et al., 2018), and 9-23 percent of the global total emissions (53 Gt CO₂) from all sectors in 2017 (UNEP, 2018).

Climate change constitutes a serious global threat, which requires immediate action from all relevant stakeholders, especially from the main GHGs emitters. The main challenge remains in identifying cost-effective options for climate change mitigation and for enhancing adaptation to climate change. Maintaining existing SOC stocks and enhancing SOC sequestration through SSM practices (Figure 2), constitutes a feasible solution to offset global emissions while providing a vast set of multiple benefits for the environment, people and the economy.

Let us put actions and solutions on the ground

The 23rd Conference of the Parties (COP 23) to the United Nations Framework Convention on Climate Change (UNFCCC) marked a milestone for negotiations on agriculture, by establishing the Koronivia Joint Work on Agriculture (KJWA). The decision requests the Subsidiary Body for Implementation (SBI) and the Subsidiary Body for Scientific and Technological Advance (SBSTA) to jointly address topics related to agriculture and its linkages to climate change and food security. This decision was the first substantive outcome and COP decision in the history of the agenda item on agriculture that has been under negotiation since 2011. It was also the first time that soils were included as a key topic on agriculture under the UNFCCC framework through the following action: "Improved soil carbon, soil health and soil fertility under grassland and cropland as well as integrated systems, including water management".

As stated by FAO Climate and Environment Division, it is expected that the country-driven NDC implementation and action processes could be an integral part of KJWA discussions by emphasizing not only the needs, but also the gaps and opportunities that exist within the agriculture sector. This means that KJWA could lead to more committed adaptation and mitigation contributions at the national level in 2020, when Parties will be submitting their next NDCs (FAO, 2018).

Considering the inherent capacity of soils to store carbon and the existent gap in one third of the world's soils for sequestering SOC (FAO and ITPS, 2015), the KJWA provides us with the framework for implementing actions on the ground. There is vast scientific evidence that affirm that maintaining current SOC stocks and fostering SOC sequestration where potential exists, could greatly contribute to mitigating the impacts of climate change. However, SSM happens on the ground, which calls for an increase in soils investments and for concrete actions at the field level to unlock the potential of SOC. Recently, the IPCC published a Special Report on Climate Change and Land (IPCC, 2019), highlighting that increased SOC content is one of the most cost-effective options for climate change adaptation and mitigation, and to combat desertification, land degradation and food insecurity.

Now more than ever, countries and regions from the whole world need to make urgent commitments and take concrete actions at different levels to fight against global warming and all associated risks to human well-being and the environment.

A promising offsetting option in the framework of KJWA could be achieved by supporting the implementation of such actions through RECSOIL (Recarbonization of Global Soils), which constitutes an implementation tool for scaling up SOC-centered SSM, based on collaborative efforts under the GSP (Figure 4).

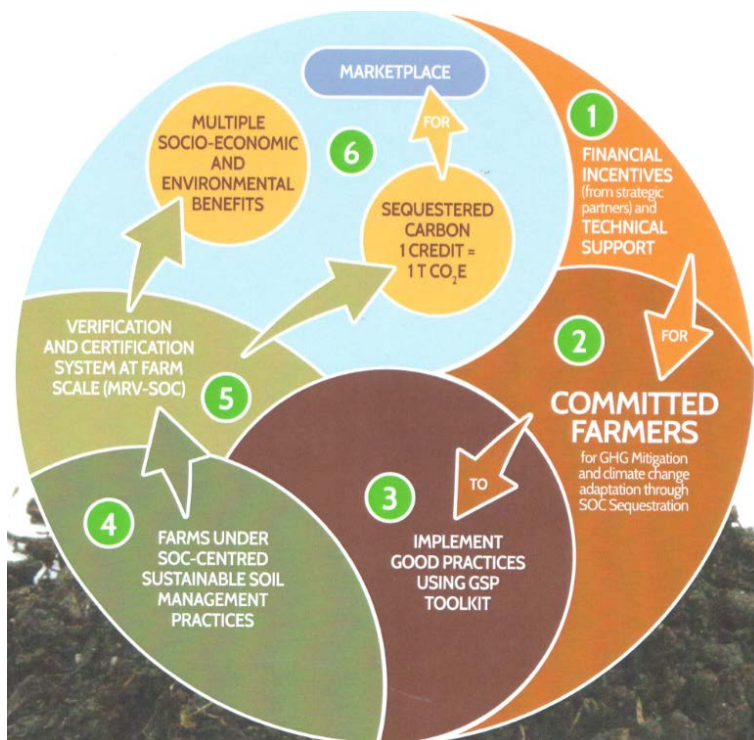


Figure 4. How does RECSOIL work?

Source: FAO Global Soil Partnership <http://www.fao.org/global-soil-partnership/en/>



Soave launches project to tackle soil erosion

By Lisa Riley

The Consorzio of Soave has embarked on a pioneering project to study the impact of soil erosion in its vineyards and to help producers develop and maintain techniques to protect their soil.

Soilution System forms part of Soave's strong focus on sustainability and environmental initiatives in order to preserve its historic and densely planted terroir, with the region's vineyards predominantly on steeply sloping hillsides - a topography which is more susceptible to soil erosion. The project comprises three key objectives; helping to find mechanical alternatives for use in hillside vineyards to minimize environmental impact; providing low cost solutions for producers and, encouraging the use of indigenous mixtures of herbaceous species, to prevent soil erosion and preserve and increase biodiversity.



Undertaking by Soilution System, the Consorzio of Soave and Lessini Durello, the University of Padua, the World Biodiversity Association (WBA) and AGREIA Srl, the Soilution System project uses drone technology to analyze the flow of rainwater down steep slopes, so as to minimize the emergence of the small channels that contribute to soil erosion. The data gathered by drones will then be used to ensure the better management.

The system was “probably one of the most innovative projects we have ever implemented”, said Aldo Lorenzoni, director of the Soave Consorzio.

“Its objective is to increase environmental sustainability through practical and cost effective, yet ground-breaking, solutions. We want to empower our producers to become custodians of this historically significant land and help preserve their environment,” he said.

The Soave wine region and community were last year awarded Heritage (GIAHS) status by the United Nations for its interwoven agricultural traditions and practices.

Source: https://harpers.co.uk/news/fullstory.php/aid/26241/Soave_launches_project_to_tackle_soil_erosion.html

The Third International Workshop for Disaster Risk Reduction Knowledge Service held in Beijing

The Third International Workshop for Disaster Risk Reduction Knowledge Service was held on December 13 and 14, 2019, Beijing, China. Organized by Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (IGSNRR, CAS), the workshop was co-hosted by the International Knowledge Centre for Engineering Sciences and Technology under the Auspices of UNESCO (IKCEST) and Section on Earth Sciences and Geo-Hazards Risk Reduction, United Nations Educational, Scientific and Cultural Organization (UNESCO DRR). Mr. SONG Dexiong, Director-General of Department of General Administration of Chinese Academy of Engineering (CAE), executive deputy director of IKCEST, Mr. Philippe Pypaert, programmespecialist for Natural Sciences, UNESCO Office in Beijing, SUN Jiulin, CAE Member, CUI Peng, CAS Member, Dr. LIU Chang, deputy director of Division of Information Infrastructure & Resources, General Administration Department of CAE, and director of Division of International Cooperation, IKCEST, Ms. FENG Kai, deputy director of the Division of International Organization, Bureau of International Cooperation, CAS, Professor GAO Xing, deputy director of IGSNRR, CAS, Ms. Gretchen Kalonji, former assistant director-general of UNESCO and the dean of Institute for Disaster Management and Reconstruction, Sichuan University-Hong Kong Polytechnic University, Mr. HAN Qunli, executive director of the International Project Office of Integrated Research on Disaster Risk (IRDR), Dr. Oyunsanaa Byambasuren, director general, Department of Forest Policy and Coordination, Ministry of Environment and Tourism, Mongolia, participated in the workshop. Nearly 80 experts and scholars from 8 countries, including China, United States, Japan, Germany, Russia, etc, and Disaster Risk

Reduction Knowledge Service (DRRKS) project team attended the workshop. This workshop was broadcast online to the world on the Zhiling live platform synchronously and more than 13000 users watched it.



In the opening session, Mr. Soichiro Yasukawa, programme specialist and coordinator for Disaster Risk Reduction and Resilience, UNESCO Section on Earth Sciences and Geo-hazards Risk Reduction, made a video speech. Mr. Philippe Pypaert, made a report on “UNESCO’s Contribution to Disaster Risk Reduction for Regional DRR and DRR in Big-data”. Mr. SONG Dexiong, on behalf of IKCEST, Ms. FENG Kai, on behalf of the Bureau of International Cooperation, CAS, Prof. GAO Xing, on behalf of IGSNRR, CAS, made welcome speeches respectively. Prof. WANG Juanle, executive director of DRRKS moderated the opening ceremony.

During the keynote speech session, Prf. CUI Peng made a report on “A new solution for flash flood and debris flow: Disaster prediction and integrated risk reduction”. Prof. Gretchen Kalonji delivered the speech of “New models for multinational collaborations on undergraduate degree programs in integrated disaster sciences and management”. HAN Qunli showed a report entitled “Formulation of a new international DRR research agenda toward 2030 - an update from IRDR”. OyunsanaaByambasuren made a report on “International cooperation on wildland fire management”. WANG Juanle gave a thematic report on “Disaster Risk Reduction Knowledge Service

System progress in IKCEST". Participants conducted discussions and exchanges on the theme report. Dr. LIU Chang and Mr. Philippe pypaert presided over the discussion of the keynote report and the thematic report respectively.



In the panel discussion session, experts focused on two topics of "Regional Disaster Risk Reduction" and "Disaster Risk Reduction in Big-data" and carried out academic exchange and group thematic discussion respectively. Experts from University of Nottingham Ningbo China, Institute for Complex Analysis of Regional Problems Far-Eastern Branch, Russian Academy of Sciences, National University of Mongolia, Center for Disaster Mitigation - Bandung Institute of Technology, Indonesia, Karakoram International University of Pakistan and other institutions introduced the progress of regional disaster risk reduction. Experts from Public Works Research Institute, Japan, Quaid-i-Azam University of Pakistan, Beijing Normal University, China Earthquake Networks Center, Baidu and other institutions reported and exchanged results on Big-data and information technology applications. Professor WANG Juanle and Jutta May (an expert of information and knowledge management) presided over the panel discussion of these two topics respectively.

Combined with the thematic discussion, the experts and audience gave good suggestions on the vision and development of the Disaster Risk Reduction Knowledge Service System of IKCEST, such as strengthening the cultivation and interaction of international users, strengthening the analysis,

utilization and output of social media data, focusing on the quality control of disaster scientific data, and expanding domestic and foreign cooperation networks, etc. In panel discussion, experts had a lively interactive exchange on the distribution of major natural disasters along the “One Belt and One Road” economic corridor, data sharing of disaster science, disaster information mining of social media, rapid mapping technology of disaster, user’s services of disaster risk and reduction, international training cooperation on disaster risk reduction, etc.



This workshop further promoted the international cooperation of the DRRKS of IKCEST, broadened the international expert network, and laid a solid foundation for future work. The project team would fully absorb and summarize the results of this workshop, and further improve the service capacity and influence of DRRKS (<http://drr.ikcest.org>).