



WORLD ASSOCIATION OF SOIL AND WATER CONSERVATION

HOT NEWS

Issue 01, 2015



WASWAC HOT NEWS No. 01, January, 2015

Contents

| | |
|--|-------|
| Happy Chinese New Year | 1-2 |
| Preparatory Meeting of IYFSWC Was Held | 3-4 |
| The Fourth Issue ISWCR of 2014 | 5-9 |
| Meetings | 10-14 |
| Jobs | 15-17 |
| Rainfall Erosivity in Europe | 18 |
| Book Introduction | 19 |
| Advertisements | 4,14 |
| WASWAC Application Form | 20 |

Cover photo: Watershed in Xianing, Hubei Province, China. Photographer is Huang Hexian.

Editors: Ms. Mao Juan, Contributors include Prof. Li Rui, Panos Panagos, and Dr. Du Pengfei.



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Happy Chinese New Year



Dear colleagues, friends and members of WASWAC,

The Spring Festival is fast approaching, we will be very happy to introduce you this important festival in China.

Spring Festival, also known as Chinese New Year, is the most important traditional festival in China. It begins on the first day of the first lunar month (usually in late January or early February) and ends on the 15th day of the first lunar month (Lantern Festival).

2015 is the Year of the goat. Some people question that we should be ushering in the Year of the Goat or Sheep. The answer is goats are more commonplace in China than sheep and some historical facts demonstrate that the coming year is the Year of the Goat. But people prefer to buy sheep mascot, as sheep are more adorable and fluffy, and in northern China where sheep

are raised regards the coming year is the Year of the Sheep. As the matter of fact, sheep or goat does not matter. The most important thing is that people like the atmosphere of the New Year.

The date of Chinese New Year 2015 is Feb.18, 2015 (Chinese New Year's Eve), and Feb. 19, 2015 will be the first day in Chinese Calendar (Lunar Calendar).

Chinese New Year is a time for families to be together. Celebrations include having annual reunion dinner on Chinese New Year's Eve, setting firecrackers, giving lucky money to children, ringing the New Year bell, sending Chinese New Year greetings, dragon and lion dancing, and Niu Yangge (traditional dance in northern China).

Anyway, the secretariat of WASWAC wish all of our members a very happy and prosperous Chinese New Year!



Preparatory Meeting of IYFSWC Was Held

The preparatory meeting of IYFSWC was held at Nanchang Institute of Technology on Jan. 27, 2015. Ten representatives from sponsors attended this meeting.



Prof. Li Rui, president of WASWAC, gave an introduction on background of this forum and on key speakers' invitation. Dr Du Pengfei, the secretary of WASWAC, introduced the program of forum and procedure of best papers selection. Prof. Peng Cong, the division director of NIT, illustrated the details in forum preparation. Dr Zhang Haina and Ms Wang Yue, summarized received participants' registration and abstract submission. Mr. Hu Genhua, Prof. Yang Jie, Ms Yan Fang, Ms Zhang Li, as the representatives of Water Resources Department of Jiangxi Province, Jiangxi Institute of Soil and Water Conservation, Jiangxi Association for Science and Technology, Jiangxi Institute of Water Resources Research, attended this meeting and expressed support on forum holding.

Jobs that should be done before the opening of forum were proposed and discussed one by one. Some main decisions were as follows:

To receive more papers with high academic quality, the deadline for submission abstract was decided to postpone to March 31, 2015 while the closing date for submission full paper is still before May 31, 2015.

Roster should be finished completing before March 31, 2015 to meet forum holding need. This means that participants who come from overseas should submit application form before this date, otherwise visa application will be refused.

Youth Fellowship was mentioned as one of main activities during the visit to typical scientific and technological demonstration district on soil and water conservation.

Companies involved in production, marketing of related apparatus that used in the process of research or treatment for soil loss, are encouraged to attend this forum.

A salon to communicate the experiences of doing research or a course of lecture to tell how to write and submit an English paper for young scientists might be held during the forum. The sponsors will ask invited speaker's advice to make decision.

The deadline for submission abstract and registration form is fast approaching, to win \$1000 award, write and submit your manuscripts soon. We hope that we can meet you in beautiful Nanchang in this coming October!



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The Fourth Issue ISWCR of 2014

The fourth issue of ISWCR for the year 2014 was published in the beginning of January, 2015. Eleven authors contributed 7 academic papers in this issue.

INTERNATIONAL SOIL AND WATER CONSERVATION RESEARCH

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(Secretariat of World Association of Soil and Water Conservation)
- CHINA WATER & POWER PRESS



INTERNATIONAL SOIL AND WATER CONSERVATION RESEARCH

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| | |
|--|----|
| Conservation agriculture in India – Problems, prospects and policy issues <i>Suraj Bhan and U. K. Behera</i> | 1 |
| Quality indicators in subtropical soils of Formosa, Argentina: Changes for agriculturalization process <i>Juan Esteban Barrión and Roberto Raúl Casas</i> | 13 |
| Land Use-Land Cover dynamics of Huluka watershed, Central Rift Valley, Ethiopia <i>Hagos Gebreslassie</i> | 25 |
| Aeolian desertification and its control in Northern China <i>Wang Tao</i> | 34 |
| Energy efficiency and soil conservation in conventional, minimum tillage and no-tillage <i>Teodor Rusu</i> | 42 |
| Advances in the prognosis of soil sodicity under dryland and irrigated conditions <i>Ildefonso Pla Serris</i> | 50 |
| Land husbandry: an agro-ecological approach to land use and management – Part 2: Consideration of soil conditions <i>T. F. Shaxson, A. R. Williams, and A. H. Kassam</i> | 64 |

Cover photo: The treated Hesi Small Watershed in Mei County, Guangdong Province, China. Photographed by Pan Zheng.

The abstracts for the seven papers are as follows:

1st paper:

Conservation agriculture in India – Problems, prospects and policy issues

Suraj Bhan¹ and U. K. Behera²

Abstract

Conservation agriculture (CA) technologies involve minimum soil disturbance, permanent soil cover through crop residues or cover crops, and crop rotations for achieving higher productivity. In India, efforts to develop, refine and disseminate conservation-based agricultural technologies have been underway for nearly two decades and made significant progress since then even though there are several constraints that affect adoption of CA. Particularly, tremendous efforts have been made on no-till in wheat under a rice-wheat rotation in the Indo-Gangetic plains. There are more payoffs than tradeoffs for adoption of CA but the equilibrium among the two was understood by both adopters and promoters. The technologies of CA provide opportunities to reduce the cost of production, save water and nutrients, increase yields,

increase crop diversification, improve efficient use of resources, and benefit the environment. However, there are still constraints for promotion of CA technologies, such as lack of appropriate seeders especially for small and medium scale farmers, competition of crop residues between CA use and livestock feeding, burning of crop residues, availability of skilled and scientific manpower and overcoming the bias or mindset about tillage. The need to develop the policy frame and strategies is urgent to promote CA in the region. This article reviews the emerging concerns due to continuous adoption of conventional agriculture systems, and analyses the constraints, prospects, policy issues and research needs for conservation agriculture in India.

2nd paper:

Quality indicators in subtropical soils of Formosa, Argentina: Changes for agriculturization process

Juan Esteban Baridón^{1,2} and Roberto Raúl Casas³

Abstract

The agriculturization process has been defined as the advance of annual crops in different environments, in competition with traditional land uses such as agriculture rotations with pastures. In Argentina and other countries agriculturization has different degrees of impact on natural resources. In the northeast region of the province of Formosa, Argentina, agriculturization includes deforestation (clear cutting, slash burning and plowing), technological improvements and changes in land use. Because of these alterations, it is necessary to define the state of the soil to evaluate its sustainability. This can be done by means of indicators, which are not universal; they differ according to the use, management and type of soils, weather conditions and ecosystems.

The objectives of this paper are: (1) To identify quality indicators for subtropical Argiudolls and Hapludolls; (2) To determine which indicators related to organic matter are most affected during agriculturization.

The changes produced in the Typic Hapludolls and Typic Argiudolls after 25 years of continuously using native forests, agriculture, fruit plantations and pastures were analyzed. These changes were in pH, electrical conductivity, total organic carbon, particulate organic carbon, total nitrogen, structural stability, hydraulic conductivity, respiration and dehydrogenase and urease and enzyme activity. Variables with significant differences between diverse uses were evaluated by multivariate methods, Principal Component Analysis, and Correlation Analysis. The results of this study showed that total organic carbon, particulate organic carbon, structural stability and dehydrogenase activity are the quality indicators most affected by agriculturization. All are related to organic matter.

3rd paper:

Land Use-Land Cover dynamics of *Huluka* watershed, Central Rift Valley, Ethiopia

Hagos Gebreslassie¹

Abstract

Land Use-Land Cover (LULC) dynamic has of human kind age and is one of the phenomenons which interweave the socio economic and environmental issues in Ethiopia. *Huluka* watershed is one of the watersheds in Central Rift Valley of Ethiopia which drains to Lake Langano. Few decades ago the stated watershed was covered with dense acacia forest. But, nowadays like other part of Ethiopia, it is experiencing complex dynamics of LULC. The aim of this research was thus to evaluate the LULC dynamics seen in between 1973 – 2009. This was achieved through collecting qualitative and quantitative data using Geographic Information System (GIS) and Remote Sensing (RS) technique. Field observations, discussion with elders were also employed to validate results from remotely sensed data. Based on the result, eight major dynamic LULC classes were identified from the watershed. Of these LULC classes, only cultivated and open lands had shown continuous and progressive expansion mainly at the expense of grass, shrub and forest lands. The 25% and 0% of cultivated and open land of the watershed in 1973 expanded to 84% and 4% in 2009 respectively while the 29%, 18% and 22% of grass, shrub and forest land of the watershed in 1973 degraded to 3.5%, 4% and 1.5% in 2009 respectively. As a result, land units which had been used for pastoralist before 1973 were identified under mixed agricultural system after 2000. In the end, this study came with a recommendation of an intervention of concerned body to stop the rapid degradation of vegetation on the watershed.

4th paper:

Aeolian desertification and its control in Northern China

Wang Tao¹

Abstract

Aeolian desertification is a kind of land degradation through wind erosion resulted from the excessive human activities in arid, semiarid and part of sub-humid regions in Northern China. To compare the results of remote sensing data in the late 1950s, 1975, 1987, 2000 and 2010, we can summarize that the expansion of aeolian desertified land in Northern China has been accelerated for 5 decades, as its annual expanded rate was 1,560 km² during the late 1950s and 1975, 2,100 km² between 1975 and 1988, 3,600 km² from 1988 to 2000, and -1,375 km² from 2000 to 2010. The desertified land kept expanding before 2000 and began to get rehabilitated since 2000. The impact of human activity on the aeolian desertification process is much more active than that from natural process which mainly incarnates on land use change (from rangeland to farmland) and increased land use intensity (over-cultivation, over-grassing, and over-fuelwood collection). The natural vegetation cover destroyed by the human activities has accelerated the development of aeolian desertification. China has made great progresses in understanding and combating aeolian desertification through decades of effort and there were many projects carried out for the prevention and control purpose. The National Project of Grain for Green Program is the most important one with 1060 counties of 22 provinces involved. The objective is to withdraw 3.67 million ha of dry land farming and degraded steppe, and 5.13 million ha of aeolian desertified land suited to reforestation and re-vegetation will be rehabilitated. There are about 8 million ha of lands suffering from aeolian desertification will be brought under control in the next ten years and 26.67 million ha of windbreaks will be planted. The total investment from the central government is estimated to be 75 billion RMB (11 billion USD).

5th paper:

Energy efficiency and soil conservation in conventional, minimum tillage and no-tillage

Teodor Rusu¹

Abstract

The objective of this research was to determine the capacity of a soil tillage system in soil conservation, in productivity and in energy efficiency. The minimum tillage and no-tillage systems represent good alternatives to the conventional (plough) system of soil tillage, due to their conservation effects on soil and to the good production of crops (Maize, 96%–98% of conventional tillage for minimum tillage, and 99.8% of conventional tillage for no till; Soybeans, 103%–112% of conventional tillage for minimum tillage and 117% of conventional tillage for no till; Wheat, 93%–97% of conventional tillage for minimum tillage and 117% of conventional tillage for no till. The choice of the right soil tillage system for crops in rotation help reduce energy consumption, thus for maize: 97%–98% energy consumption of conventional tillage when using minimum tillage and 91% when using no-tillage; for soybeans: 98% energy consumption of conventional tillage when using minimum tillage and 93 when using no-tillage; for wheat: 97%–98% energy consumption of conventional tillage when using minimum tillage and 92% when using no-tillage. Energy efficiency is in relation to reductions in energy use, but also might include the efficiency and impact of the tillage system on the cultivated plant. For all crops in rotation, energy efficiency (energy produced from 1 MJ consumed) was the best in no-tillage — 10.44 MJ ha⁻¹ for maize, 6.49 MJ ha⁻¹ for soybean, and 5.66 MJ ha⁻¹ for wheat. An analysis of energy-efficiency in agricultural systems includes the energy consumed-energy produced-energy yield comparisons, but must be supplemented by soil energy efficiency, based on the conservative effect of the agricultural system. Only then will the agricultural system be sustainable, durable in agronomic, economic and ecological terms. The implementation of minimum and no-tillage soil systems has increased the organic matter content from 2% to 7.6% and water stable aggregate content from 5.6% to 9.6%, at 0–30 cm depth, as compared to the conventional system. Accumulated water supply was higher (with 12.4%–15%) for all minimum and no-tillage systems and increased bulk density values by 0.01%–0.03% (no significant difference) While the soil fertility and the wet aggregate stability have initially been low, the effect of conservation practices on the soil characteristics led to a positive impact on the water permeability in the soil. Availability of soil moisture during the crop growth period led to a better plant watering condition. Subsequent release of conserved soil water regulated the plant water condition and soil structure.

6th paper:

Advances in the prognosis of soil sodicity under dryland and irrigated conditions

Ildefonso Pla Sentis¹

Abstract

Salt-affected soils, both saline and sodic, may develop under both dryland and irrigated conditions, affecting the physical and chemical soil properties, with negative consequences in the environment, in crop production and in animal and human health. Among the development processes of salt-affected soils, the

processes of sodification have generally received less attention and are less understood than the development of saline soils. Although in both, hydrological processes are involved in their development, in the case of sodic soils we have to consider some additional chemical and physicochemical reactions, making more difficult their modeling and prediction. This is especially true where we have to consider the effects of the groundwater level and composition. In this contribution there are presented three case studies: one related to the development of sodic soils in the lowlands of the Argentina Pampas, under dry-land conditions with sub-humid temperate climate and pastures for cattle production; the second deals with the development of sodic soils in the Colombia Cauca Valley, under irrigated conditions and tropical sub-humid climate, in lands used for sugarcane cropping dedicated to sugar and ethanol production; and the last one related to the sodification of soils in the Western Plains of Venezuela, under irrigated conditions, sub-humid tropical climate and continuous cropping of rice under flooding. The development of sodicity in the surface soil is partially related to the composition and level of the ground-water, mainly affected in the Argentina case by drainage conditions, in the case of Colombia to the inefficient irrigation and inadequate drainage, and in the case of Venezuela to the soil management and irrigation system. There is shown how the model SALSODIMAR, developed by the author, based on the balance of water and soluble components of both irrigation water and ground-water, under different water and land management conditions, may be successfully adapted for the diagnosis and prediction of the different processes and problems, and for selection of alternatives for their prevention and amelioration.

7th paper:

Land husbandry: an agro-ecological approach to land use and management Part 2: Consideration of soil conditions

T. F. Shaxson¹, A. R. Williams², and A. H. Kassam³

“Porosity was defined and calculations were made relating porosity to bulk density, and so on. What was missed was that it is the pore space, and more specifically the water films in the pores, that are the spaces used by life in the soil. Pore space is where the action is!” (Anderson, 2006).

Abstract

This paper, complementing the first part (Shaxson et al., 2014), sketches the outlines of an ecologically-based approach to better care of soils, within the overarching context of ‘land husbandry’, contributing to more-effective conservation of soil and water. It suggests an up-dated paradigm which concentrates more on renewing and conserving the biologically-moderated spaces in the soil in the root-zone rather than on the solid soil-particles themselves. When read in sequence, the two papers offer contributions to better understanding of both the problems and the possibilities for solving the ongoing uncertainties of how best to repair damaged lands, to maintain and improve those areas already in use, and to safeguard the potentials of those as-yet-unopened areas which surely will be brought into production in the future, by the planning and executing of optimum strategies for assuring sustainability of their uses into the future. These two papers do not set out to challenge existing knowledge, but rather to suggest additions to, and alternative interpretations of, what may already be known. The conclusions suggest some important amplifications to any curriculum for the training and/or up-dating of people involved in those subject-areas which contribute to better land husbandry and more-effective conservation of soil and water, as well as to the buffering of soils’ productive capacities against the possible adverse effects of climate change.

MEETINGS

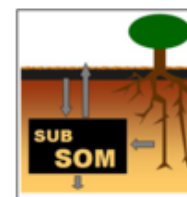
The forgotten part of carbon cycling: organic matter storage and turnover in subsoils

From 28 to 01 of May 2015 we going to conduct a Symposium at the Castle Rasefeld, Germany to listen to and discuss about different topics reffering to subsoil carbon storage and turnover.

SUSOM-Symposium 2015

"Organic matter storage and turnover in subsoils"

from 28th of April till - 01st of May 2015



DFG – FOR 1806

Topics:

- ✚ Organic matter properties and storage in subsoils
- ✚ Inputs and fluxes of SOM in subsoils
- ✚ Microbial activity and SOM degradation in subsoils
- ✚ Modelling SOM fluxes and turnover in subsoils.

Registration:

For registration to the SUSOM-Symposium 2015 please write an email to Stefanie Heinze until 1st of March 2015. The registration fee of 100€ includes lunch (2x) and dinner (1x) and sufficient coffee and tea during the symposium. The number of participants is limited to 80. First come first serve.

Abstract:

Please send your abstracts for poster presentation and scientific talks via email to Stefanie Heinze. The abstracts have to be submitted until **1st of March 2015**. Please write a note in your email if you want to present your research in form of a poster or by a scientific talk.

The abstracts will be compiled in an abstract band. Therefore, please use the given abstract format. The abstract should be prepared with a maximum length of one page!

Details at:

<http://www.subsom.de/index.php?id=36>

The third Brazilian Soil Physics Meeting (3rd BSPM)



The third Brazilian Soil Physics Meeting (3rd BSPM) will take place between **04 and 08 May, 2015** at **the Sector of Agriculture Sciences (SCA)** – Federal University of Paraná (UFPR) in the city of Curitiba, Paraná State, Brazil, with support from the Department of Soils and Agriculture Engineering (DSEA-UFPR), CAPES and CNPq. According to the United Nation (UN), this is the international year of the soil.

SUBMIT YOUR ABSTRACT

Two categories for registration to the III BSPM are available: non-presenting attendant or presenting attendant. Registration should be requested by email at bspm2015@ufpr.br.

There are two presentation modes:

- (1) short oral presentations (10-15 minutes), obligatory in English, with 5 minutes for discussion.
- (2) poster presentations – the poster should be in English, and each poster will be accompanied by a brief-presentation (2-3 minutes) in English or in Portuguese.

The deadline to submit an abstract is February 28, 2015. A one-page abstract of your presentation should be submitted in English

Details at:

<http://www.agrarias.ufpr.br/portal/bspm2015/presentation/>



7th International Conference on Information and Communication

Technologies in Agriculture, Food and Environment (HAICTA 2015)

September 17-20, 2015, Kavala, Greece

Topics

We are accepting submissions of original research papers and posters for the main program and the doctoral consortium in all areas of ICT in Agriculture, Food and Environment including but not limited to:

- ✚ Decision Support Systems
- ✚ Information Systems
- ✚ Database Systems
- ✚ Environmental Modelling and Simulation
- ✚ Environmental Control Systems
- ✚ Environmental Impact Assessment
- ✚ e-Waste Management & Clean Technologies
- ✚ Environmental Design & Policy

- ✚ Issues in ICT Adoption
- ✚ New technologies in Ecosystems Management, Forestry and Natural Resources
- ✚ Information Systems and Wild Life Management & Protection
- ✚ Wood Technology & Wood Products
- ✚ Flora and Fauna Management using ICTs
- ✚ ICT in Climate Change and Global Warming
- ✚ ICT in Cultivation and Pastoral Areas
- ✚ ICT in Rural Development
- ✚ Innovative Technologies in Agrotourism & Ecotourism
- ✚ e-Business, e-Commerce, e-Government, e-Learning and e-Services
- ✚ GIS and Applications
- ✚ Spatial Analysis & Landscape Planning
- ✚ Internet Marketing, Internet of Things and Web 2.0
- ✚ Mobile/wireless Systems & Networks
- ✚ Ontology and Web Semantic
- ✚ Sensor and Wireless Network Applications
- ✚ Mobile/Wireless Applications in Agriculture
- ✚ Novel RFID applications
- ✚ Precision Farming Systems, VR Technologies
- ✚ Green IC Technologies
- ✚ Traceability
- ✚ Supply Chain Management & Logistics
- ✚ Environmental Education

Paper submission:

All papers will be reviewed through a fully electronic peer review process by at least two academic referees. Final acceptance will be based on the review of the full paper submission.

Paper submissions will be handled by an ONLINE SUBMISSION SYSTEM that has been set up for HAICTA 2015.

Important Dates

Technical program Dates

April 30, 2015

Submissions due (for every type of submission: full research papers, posters, doctoral consortium research papers).

May 30, 2015

Notification of acceptance for all submissions.

June 30, 2015

Camera Ready Paper Submission.

September 17-20, 2015

Conference in Kavala, Greece.

Download at:

<http://2015.haicta.gr/>



[SOUND PRINCIPLE NO. 31]

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JOB

1. PhD studentship The Carbon Dynamics of Raised and Cutover Bogs



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UNIVERSITY
OF DUBLIN

A PhD researcher is sought to join a 3 year EPA-funded project with the aim to evaluate the ecosystem services of peatlands in Ireland and develop a framework that outlines the methodology and actions to be undertaken when attempting to restore degraded peatlands to active peat-forming conditions. The project will identify and quantify current environmental pressures and future trends on ecological and water resources as well as the atmosphere / climate associated with such peatland ecosystems. The PhD research aspect of the project will involve quantifying the linkage between eco-hydrology and carbon dynamics of raised and cutover bogs (using primary field data), estimating a carbon balance and emission factors for active and degraded raised bogs and then modeling the carbon flux dynamics in order to predict GHG emissions under current and future climates.

An outstanding student with an interest in the generation of greenhouse gases as well as the eco-hydrology of wetlands is required. Applicants should have a strong motivation and demonstrate ability in both field work and numerical modelling areas of research. In addition, the successful applicant will be required to liaise with the EPA, NPWS and landowners and will need good communication skills. Applicants should preferably possess a first class honours degree in Engineering/Science or other relevant discipline. The researchers will be based within the Environmental Engineering Research Group of the Department of Civil, Structural and Environmental Engineering. The PhD studentship covers academic fees (EU level) and subsistence of €14,000 per annum. The studentship is due to start between April and September 2015.

Interested candidates should send a 3-page CV and covering letter to the contact addresses below. **The closing date for receipt of applications is 12 noon, Sunday 8th March 2015.**

Laurence Gill & Shane Regan

Department of Civil, Structural and Environmental Engineering

Trinity College, Dublin 2, Ireland

Email: laurence.gill@tcd.ie & regans@tcd.ie

Telephone +353-1-8961047

Details at: <http://www.earthworks-jobs.com/geoscience/tcd15021.html>

2. Geotechnical and Geo-Environmental Engineer (Permanent, Full Time)



Geotechnical and Geo-Environmental Engineer required to join our head office in Alton, Hampshire.

Main Duties and Responsibilities:

- ✚ Organisation of intrusive investigations, including health and safety aspects, and managing subcontractors and site operations
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- ✚ Preparation of Phase 1 Desk Studies
- ✚ Phase 2 intrusive investigations - collection of data and report writing, preparation of factual and interpretative reports on intrusive investigations, basic foundation design to include calculation of bearing pressures and estimating settlement
- ✚ Carry out qualitative and quantitative risk assessments
- ✚ Phase 3 remediation strategies and validation work, including on-site supervision of remediation and carrying out verification reporting of remediation

Comply with company H & S Standards at all times

Other duties and responsibilities commensurate with the position

Required Skills:

- ✚ Minimum degree (BSc (Hons)) qualified in Geology, Civil Engineering, Soil Mechanics, Environmental Science or Similar
- ✚ Preferably an MSc/M.Geol/MSci in Geology, Engineering Geology, Soil Mechanics, Civil Engineering or similar
- ✚ Minimum of 2 years industry experience working as a geotechnical/geo-environmental engineer



- ✚ Member of an appropriate professional body and working towards Chartered status would be desired but not essential
- ✚ The applicant should be able to show experience of managing site works, appropriate sampling techniques and logging soils/rock to current guidance
- ✚ Applicants should also show experience of the production of factual and interpretive reports, including CSMs
- ✚ Able to communicate effectively with clients and subcontractors
- ✚ Proficient in the use of Microsoft Office Suite
- ✚ Good working knowledge of Holebase III/IV, CLEA , EA P20, Geotechnical Design Software
- ✚ Some knowledge of slope stability analysis is desired
- ✚ Able to work to budgets and manage time effectively
- ✚ A strong work and team ethic are essential; the applicant should be adaptable and capable of managing their own workload to produce a consistent and quality service to our clients' requirements. Strong written and spoken communication skills are also considered of paramount importance
- ✚ Previous experience within the UK regulatory and design environment desired
- ✚ Full clean UK driving licence

Personal Attributes:

- ✚ Out-going and self motivated
- ✚ Ambitious yet easy going team player with the ability to work on their own when required
- ✚ Flexible approach to working
- ✚ Reliable, responsible
- ✚ Good time management and organisation skills

The remuneration package will include a competitive, and negotiable, salary depending on qualifications and experience.

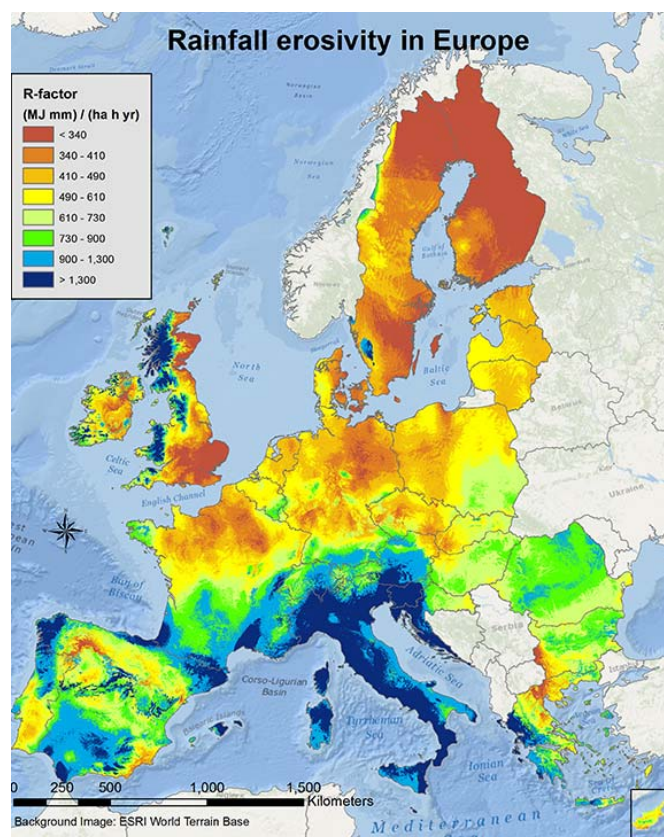
Salary: £22k - £25k per annum (negotiable) dependent on experience

Applicants must be eligible to live and work in the UK

To apply please sent a full CV and covering letter to groundandwater15011@earthworks-jobs.com

Details at: <http://www.earthworks-jobs.com/geotech/gandw15011.html>

Rainfall Erosivity in Europe

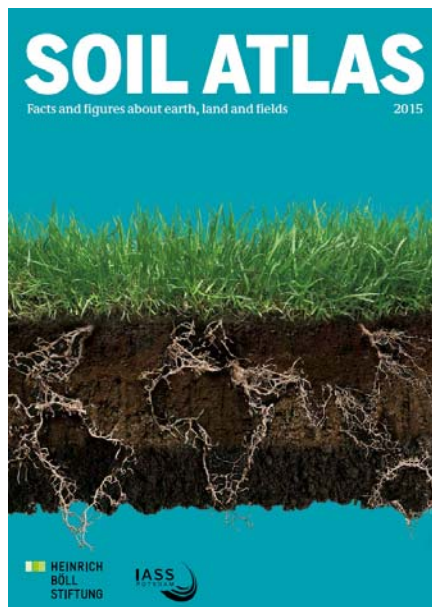


The erosive force of rainfall is called rainfall erosivity. Rainfall erosivity considers the rainfall amount and intensity, and is most commonly expressed as the R-factor in the (R)USLE models. The purpose of this study is to assess rainfall erosivity in Europe in the form of the RUSLE R-factor. Data have been collected from 1,541 precipitation stations in all European Union (EU) Member States and Switzerland, with temporal resolutions of 5 to 60 minutes. The R-factor values calculated from precipitation data of different temporal resolutions were normalised to R-factor values with temporal resolution of 30 minutes using linear regression functions. These data were stored in Rainfall Erosivity Database on the European Scale (REDES). Precipitation time series ranged from a minimum of 5 years to maximum of 40 years, mostly covering the last decade. Data from REDES were interpolated with the Gaussian Process Regression (GPR) model resulting in the European rainfall erosivity map at 500m resolution. The mean R-factor for the EU plus Switzerland is 722 MJ mm ha⁻¹ h⁻¹ yr⁻¹, with the highest values in the Mediterranean and alpine regions and the lowest in the Nordic countries. The data are available for download:

<http://eussoils.jrc.ec.europa.eu/library/themes/erosion/RainfallErosivity/>

Book Introductions

Soil Atlas: Facts and figures about earth, land and fields



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We are using the world's soils as if they were inexhaustible, continually withdrawing from an account, but never paying in. For it takes several thousand years to build a thin layer of fertile topsoil, but only an hour of heavy rain to lose it. The average European needs 1.3 hectares – two football pitches – to produce all of the food and other products he or she consumes each year. That is about six times more than is available to each Bangladeshi. Almost 60 percent of the area consumed by Europeans lies outside the European Union.

Global demand for food, fodder and biofuels is on the rise. So too are land prices. In many regions, the struggle for secure land rights is a struggle for survival for individuals and communities. The global significance of soils demands global responses. 2015 is the International Year of Soils. In this year, the United Nations wants to further the goal of soil protection. This Soil Atlas shows what can succeed and why the soil should concern us all.

The Soil Atlas is available in a printed version and available for download (PDF).

Download at: http://www.boell.de/sites/default/files/soil_atlas_2015.pdf



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