



**RIO18**

21st World Congress  
of Soil Science

Rio de Janeiro August | 12 - 17

**SOIL SCIENCE  
BEYOND FOOD AND FUEL**

**MEETING  
INFORMATION**



International Union of Soil Sciences



**Brazilian Soil Science  
Society**



Rio de Janeiro August | 12 - 17



**International  
Decade of Soils**  
2015 - 2024

## Meeting Information

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## INVITATION

Dear Colleagues,

On behalf of the International Union of Soil Sciences (IUSS), The Latin American Soil Science Society (SLCS) and the Brazilian Soil Science Society (SBCS), it is our pleasure to invite you to the 21st World Congress of Soil Science. The congress will be held in Rio de Janeiro, Brazil, August 12-17, 2018 and we hope that you will be able to join us for this world meeting.

WCSS has been held every four years since 1927 as a scientific meeting in the field of soil science. This edition of the world congress will take place for the first time in Latin America. The WCSS will gather a large number of scientists and industry together over 7,500 expected participants from more than 140 countries from around the world. This will be an excellent learning experience, exchange of knowledge and technological advances, as well as a business opportunity for companies working in the area.

The City of Rio de Janeiro is a cosmopolitan metropolis, known worldwide for its scenic beauty and its natural resources, which provides a harmonious and agreeable environment for its inhabitants and visitors. Rio de Janeiro City's main virtue is the kindness and hospitality with which its residents welcome all visitors. We invite you to enjoy the many attractions of the wonderful city.

We look forward to welcoming you at the 21WCSS meeting, in Rio de Janeiro, Brazil.



**Rattan Lal**  
President IUSS



**Laura Bertha-Reys**  
Sec. General SLCS



**Fatima Moreira**  
President SBCS



**Flávio Camargo**  
Chairman 21WCSS



**Leandro da Silva**  
Co-Chairman 21WCSS



**Raphael Fernandes**  
Secretary General 21WCSS

## OVERVIEW

<b>Title</b>	21st World Congress of Soil Science
<b>Period</b>	August 12 - 17, 2018
<b>Venue</b>	Windsor Conventions & Expo Center
<b>Host</b>	Brazilian Soil Science Society; Latin American Soil Science Society; International Union of Soil Sciences
<b>Organizer</b>	Local Organizing Committee, 21st World Congress of Soil Science
<b>Theme</b>	SOIL SCIENCE: Beyond food and fuel
<b>Scale</b>	<ul style="list-style-type: none"><li>- Expected participants: 7,500 participants from more than 100 countries (Scientists, professionals, and students in soil science around the world)</li><li>- Expected Oral presentations: 600</li><li>- Expected Poster presentations: 5,500</li><li>- Expected number of booths: 80</li></ul>
<b>Language</b>	English
<b>Website</b>	<a href="http://www.21wcss.org">www.21wcss.org</a>
<b>Program</b>	<ul style="list-style-type: none"><li>- Opening ceremony; closing ceremony</li><li>- Plenary Symposium, Oral / Poster presentations, Exhibition</li><li>- Welcome reception, Gala dinner, Tours (technical, Pre &amp; Post Congress Tour, Spouse &amp; family activities</li><li>- Soil exposition and fair</li></ul>
<b>Local</b>	Rio de Janeiro - Barra da Tijuca



## RIO DE JANEIRO

### The city

One of the major economic and cultural hubs of South America, Rio de Janeiro is a cosmopolitan metropolis, known worldwide for its scenic beauty and its natural resources. It provides a harmonious and agreeable environment for its inhabitants and visitors, for both leisure and work.



### The carioca

Rio de Janeiro City's main virtues is the kindness and hospitality with which the residents welcome all visitors. Thanks to the cordial temperament and innate spirit of cordiality, Rio de Janeiro has been distinguished in the tourist market by a series of international awards.



### The environment

Its exuberant natural resources include 90 km of beaches; Tijuca National Park, which includes the largest urban forest in the world, with 3,200 hectares of Atlantic Forest; Pedra Branca, Desengano and Chacrinha State Parks, which cover an area of 48,500 hectares; and Rodrigo de Freitas, Jacarepaguá, Camorim, Tijuca and Marapendi lakes and lagoons. The ecological treasures include two of the three largest urban forests in the world; a shoreline surrounding most of the city's borders; a collection of ecosystems, ranging from rainforest to mangroves; and landscapes from monumental hills to beaches.



## CONGRESS THEME

### SOIL SCIENCE: Beyond food and fuel

**Justification and world context:** In the next couple of decades, research in agronomy and in soil science must devise resilient agricultural practices that will be able to accommodate the forthcoming environmental and climatic changes and food security. Perhaps of even more urgency, we will need to feed an estimated 8 billion people who will live on earth in 2024, climbing to more than 9 billion by 2050. Researchers are expected to design strategies that will be able to deliver the required food. For a number of reasons, it is most likely that in both of these areas, their research will be very tightly linked to what happens in Brazilian agriculture and soil science.

**Brazilian science and soil science:** In the global effort that is underway to address these major societal challenges, Brazilian science is already having a significant impact. Brazilian research institutions and universities have since grown considerably, and now employ thousands of highly-qualified individuals, many of whom work on agricultural issues. The scientific output of these researchers, published in ever larger numbers in international periodicals, has been steadily gaining recognition over the last two decades and is increasingly influencing debates worldwide.

**Brazilian agriculture:** At the same time, the remarkable recent increases in productivity of Brazilian agriculture, and the potential that it presents for still further gains in yields are raising hopes that, thanks to Brazil, the food security challenges to be faced in the rest of the world will not be as daunting as they appear at the moment. Increasing production needs in terms of fiber and energy may also be partially answered by the agricultural sector in Brazil. Where the resulting tug-of-war between, on one side, worries about food, fiber, and energy security, and on the other side, climate change concerns, concludes within the next decade is likely to significantly influence the expectations society will have of the agricultural sector around the world, and therefore will determine the conditions under which crop and soil scientists will have to frame their work.

**Brazilian and world soil science:** The role of soil in our society and in future generations becomes increasingly complex, diverse and unique to solve the problems that surround us. In the coming decades, soil science will continue to be at the center of discussion for food production and environmental conservation, but will also be essential and strategic for issues such as water quality, poverty decrease and the production of renewable energy.

#### INVITATION

The Congress theme “**SOIL SCIENCE: Beyond food and fuel**” is an invitation to answer the following questions: How to feed a hungry planet? How to fuel an energy-hungry planet? How to quench a thirsty planet? How to clean up our polluted planet? Among many other questions....

# GENERAL PROGRAM

## SOIL SCIENCE BEYOND FOOD AND FUEL

	Aug 12 Sunday	Aug 13 Monday	Aug 14 Tuesday	Aug 15 Wednesday	Aug 16 Thursday	Aug 17 Friday
08:00		General Conference	General Conference	Technical Tours	General Conference	General Conference
09:00		General Conference	General Conference		General Conference	General Conference
10:00	Registration	Coffe break	Coffe break		Coffe break	Coffe break
11:00		Inter-Divis. Symposia & Technical & Innovation	Inter-Divis. Symposia & Technical & Innovation		Inter-Divis. Symposia & Technical & Innovation	Inter-Divis. Symposia & Technical & Innovation
12:00		Lunch and Satellyte Symp.	Lunch and Satellyte Symp.		Lunch and Satellyte Symp.	Lunch and Satellyte Symp.
13:00		Poster Session	Poster Session		Poster Session	Poster Session
14:00		Coffe break	Coffe break		Coffe break	Coffe break
15:00		Divisional Symposia & Voluntary Symposia	Divisional Symposia & Voluntary Symposia		Divisional Symposia & Voluntary Symposia	Divisional Symposia & Voluntary Symposia
16:00		Parallel activities	Parallel activities		Parallel activities	Parallel activities
17:00						
18:00						
19:00						
20:00	Welcome Reception				Gala Dinner	Closing
21:00						

# CONFERENCES

## Keynote Speakers (confirmed)

**Brazilian Soils:  
food, fuel and beyond**

Lucia Helena Cunha dos Anjos



**Soils of the world: how to reconcile  
the needs for food, fuel, water  
quality and biodiversity**

Pedro Sanchez



**Science, technology, policy, and  
wisdom to achieve global food  
& nutrition security**

Gebisa Ejeta



**Brazilian Agriculture:  
Beyond food and fuel**

Maurício Antônio Lopes



**Collective design of farming systems  
that conserve and promote  
soil functions**

Pablo Adrian Tittonell



**Soil management in the tropics and  
conservation agriculture: the South  
America experience**

Rolf Derpesch



8 to 12 conferences



## SYMPOSIUM

### Interdivisional (Leading speakers)

#### Division 1: Soil in Space and Time

- S1.2 - Advances in observation, classification and mapping of soils
- S1.2 - Soil data and information for smarter land management
- S1.3 - Pedodiversity and biodiversity
- S1.4 - Functional land management: managing soils from ped to planet

#### Division 2: Soil Properties and Processes

- S2.1 - The impact of climate change on soils in vulnerable coastal environments
- S2.2 - Interactions between physical, biological and chemical processes in soil
- S2.3 - Microbial and nonmicrobial products for multi-use (agriculture, urban, industries, etc)
- S2.4 - Advanced techniques in soil mineralogy and biological processes in mineral formation

#### Division 3: Soil Use and Management

- S3.1 - Phosphorus nexus and the long-term efficiency (or Sustainable P fertilizer use in tropical soils)
- S3.2 - Soil fertility management and the African Green Revolution
- S3.3 - Sustainable soil management
- S3.4 - Agricultural management to protect soil resources to support a growing population

#### Division 4: The Role of Soils in Sustaining Society and the Environment

- S4.1 - Soil perception by society
- S4.2 - Education and awareness of soil
- S4.3 - Soil governance and sustainable development goals: connections between land use policies, soil science and society
- 4.4 - Carbon sequestration, food security and the "4 per 1000 initiative"

16 Symposia & 48 presenters

## SYMPOSIUM

### Working Groups

#### Division 1: Soil in Space and Time

Cryosols: Progress in understanding the dynamic soils of colder regions  
Digital Soil Mapping: Progress in digital soil mapping  
Digital Soil Morphometrics: Soil imaging and image analysis at multiple scales  
Global Soil Map: Progress and challenges  
Proximal Soil Sensing (PSS)  
Soil Monitoring: Soil monitoring evolving tools and challenges  
Universal Soil Classification: Progress with the development of a Universal Soil Classification System  
Soil Classification for understanding soil genesis, map legends and soil functions. Experiences with WRB and other systems

#### Division 2: Soil Properties and Processes

Soil Modeling: Challenges and perspectives in soil modelling  
Hydropedology: Hydropedology and critical zone science: toward systems soil science

#### Division 3: Soil Use and Management

Land Degradation: Restoring degraded lands through soil carbon management  
Paddy Soils: Mitigating GHG emission and enhancing productivity in rice-based systems  
SUITMA: Soils of Urban, Industrial, Traffic, Mining and Military Areas  
Acid Sulfate Soils: Processes, assessment and management

#### Division 4: The Role of Soils in Sustaining Society and the Environment

Cultural Patterns of Soil Understanding A: Cultural patterns of soil understanding  
Cultural Patterns of Soil Understanding B: Dialogues between traditional and scientific knowledge and perceptions of soils by different stakeholders

16 Symposia & many presenters

# SYMPOSIA

## Technical & innovation

4 Symposia & 16 to 20 presenters  
(will be released soon!)

## Divisional (oral presentation)

72 Symposia & 624 presenters  
(See the all the symposia description on our  
webpage) (To be defined in March 2018)

## Divisional (poster session)

52 Sessions & many presenters  
(To be defined in March 2018)

## Voluntary (oral presentation)

(To be defined after the definition of the other  
symposia after March 2018)

## Satellite (product demonstration)

(To be defined after the definition of the other  
symposia after March 2018)

## OPPORTUNITIES

### Goals & Expected Outcomes

- Participation of around 7,500 experts from more than 100 countries
- Learning about the research results and latest information from soil science experts based in the global network
- Large space for exhibition of 80 booths, 5,500 poster presentation, Soil expo & Fair, Lounge area and coffee break
- Differentiated sponsorship benefits according to the level of sponsorship
- Diverse sponsorship programs for maximizing promotion of brand and its products

### Expected Participants in the 21WCSS

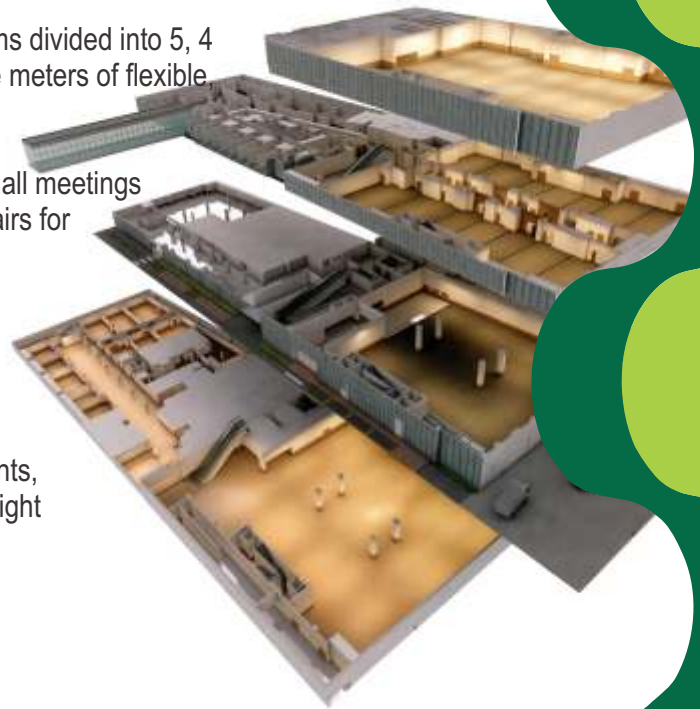


## VENUE

Windsor | Conventions & Expo Center  
BARRA DA TIJUCA

### Windsor Conventions & Expo Center

- WC&EC is largest complex of Hotels and Convention Center in front of the beautiful Barra da Tijuca beach in Rio de Janeiro.
- The complex holds more than 1500 hotel rooms divided into 5, 4 and 3 star hotel categories and 12,000 square meters of flexible, modern meeting rooms.
- The Convention Center can accommodate small meetings as well as large Congresses and Exhibition Fairs for up to 7,500 people.
- The Convention Center has four floors occupied by 22 multipurpose meeting rooms with capacity to serve ten to 7,500 people.
- A 3,400 square meters exhibition area for events, conventions and a headroom with a ceiling height of 5.80 meters without columns.

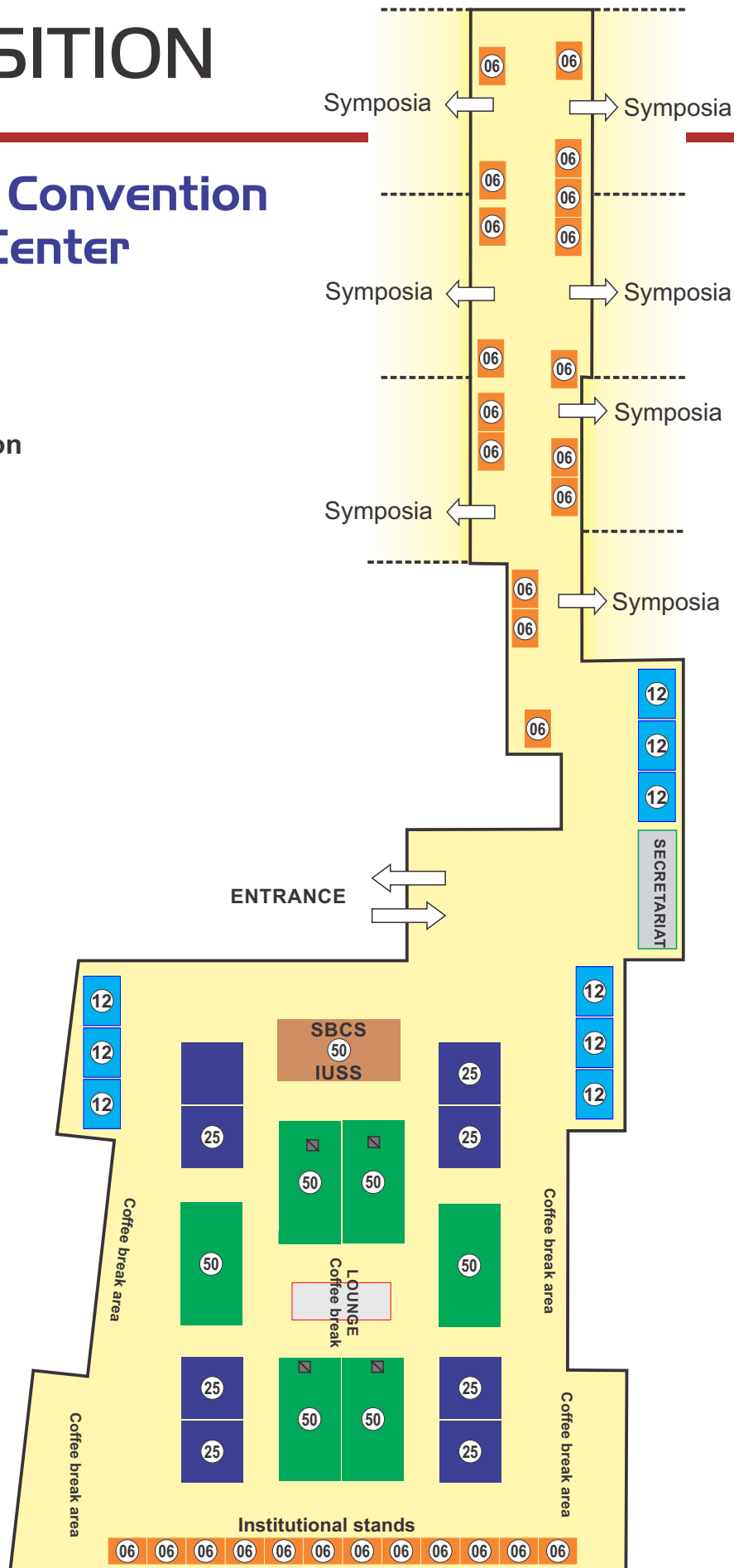


# EXPOSITION

## Windsor Convention & Expo Center 2° Sub-Soil

### Stands discription

- Area: 50 m<sup>2</sup>  
Diamond level
- Aea: 25 m<sup>2</sup>  
Gold level
- Area: 12 m<sup>2</sup>  
Silver level
- Area: 06 m<sup>2</sup>  
Commercial



## REGISTRATION

### Registration fees

All participants are required to register through the 21WCSS online registration system. We have four different levels of payment, based on the country income. This is part of the IUSS Policy that aims to allow the participation of soil scientists from all over the world. Please read carefully the registration guidelines on our webpage and submit your abstract in the login area. If you have any questions, please contact the 21wcscs secretariat (e-mail: [register@21wcscs.org](mailto:register@21wcscs.org)).

CATEGORIES	Early-Registration (by March 31, 2018)	Regular-Registration (by May 12, 2018)	On Site-Registration (by May 13, 2018)
<b>IUSS Member *</b>			
Regular	500.00	600.00	700.00
Student	250.00	300.00	350.00
Senior (65 & retired)	250.00	300.00	350.00
One day	250.00	250.00	300.00
Guest Companion	200.00	200.00	200.00
<b>IUSS Nonmember</b>			
<b>High income countries</b>			
Regular	650.00	700.00	750.00
Student	400.00	450.00	500.00
Senior (65 & retired)	350.00	400.00	450.00
One day	300.00	300.00	350.00
Guest Companion	250.00	250.00	250.00
<b>TIER 2 Member/Nonmember **</b>			
<b>Middle income countries</b>			
Regular	250.00	350.00	450.00
Student	150.00	200.00	250.00
Senior (65 & retired)	150.00	200.00	250.00
One day	200.00	200.00	250.00
Guest Companion	150.00	150.00	150.00
<b>TIER 1 Member/Nonmember ***</b>			
<b>Low income countries</b>			
Regular	200.00	300.00	400.00
Student	100.00	150.00	200.00
Senior (65 & retired)	100.00	150.00	200.00
One day	100.00	100.00	150.00
Guest Companion	100.00	100.00	100.00

## IMPORTANT DATES



## ACCOMMODATION

In addition to the lower registration fees, our other strategy to attract participants is the low cost of hotels, ranging from 35 to 150 USD per day. Go to our web page for reservations, payment, and to get discounted accommodation rates and check the location and other hotel information.

Prices in BRL (1 BRL approximately 0.286 USD)

<b>HOTELS</b>	<b>CAT.</b>	<b>UNIT.</b>	<b>DIST.</b>	<b>SGL</b>	<b>DBL</b>	<b>TAX</b>
WINDSOR BARRA	5 Stars	350	0.0 km	485	535	15%
WINDSOR OCEÂNICO	4 Stars	400	0.0 km	420	470	15%
SHERATON BARRAHOTEL	5 Stars	70	0.5 km	425	425	15%
LSH- EX TRUMP	5 Stars	100	0.6 km	462	480	15%
HOTEL SOL DA BARRA	2 Stars	20	0.8 km	385	385	15%
REF HOUSE	Hostel	50	0.8 km	150	150	-
RECANTO CARIOCA HOSTEL	2 Stars	50	1.0 km	140	140	-
AC MARRIOT	4 Stars	50	1.5 km	274	309	15%
HOTEL PRAIA LINDA	2 Stars	20	1.5 km	307	347	15%
WOLO HOSTEL	Hostel	35	1.5 km	143	143	-
GAIVOTA HOTEL	2 Stars	50	1.7 km	162	212	15%
ENTREMARES HOTEL	2 Stars	20	1.8 km	280	340	-
TRANSAMÉRICA P BARRA	3 Stars	150	2.0 km	359	395	15%
IBIS BARRA	2 Stars	240	2.6 km	170	190	5%
TROPICAL BARRA HOTEL	3 Stars	100	2.8 km	215	235	15%
ROYALTY BARRA	3 Stars	80	3.1 km	350	350	15%
MERCURE RIO BARRA	4 Stars	136	3.6 km	264	290	5%
NOVOTEL BARRA	4 Stars	150	3.7 km	253	293	5%
WINDSOR MARAPENDI*	5 Stars	400	3.7 km	455	505	15%
POUSADA QUEBRA MAR	B&B	50	3.0 km	180	180	-
MARBELLA BARRA HOTEL	2 Stars	50	4.0 km	279	299	15%
CENTER HOTEL BARRA	2 Stars	50	4.5 km	259	299	15%
BRISA BARRA	2 Stars	100	4.9 km	362	392	15%
HYAT HOTEL	5 Stars	250	5.0 km	490	662	15%
HOTEL LAGHETTO STILO	4 Stars	311	5.0 km	383	313	10%
PROMENADE LINK STAY	3 Stars	100	7.5 km	245	285	15%
AMERICAS BARRA	3 Stars	150	9.0 km	295	295	15%
BOURBON	3 Stars	150	10.0 km	265	295	15%
RAMADA ENCORE BARRA	3 Stars	150	10.7 km	259	295	15%
PROMENADA BARRA FIRST	3 Stars	100	10.0 km	245	285	15%
VENIT	3 Stars	50	12.0 km	230	260	15%
PROMENADE PARADISO SUI	3 Stars	50	16.0 km	245	285	15%

\* Free shuttle to the venue



# I U S S



International Union of Soil Sciences

**Organization** I U S S - International Union of Soil Science

**Established** May 19, 1924

**Membership** 130 Countries; 60,000 soil scientists

**Objectives** Promoting all branches of soil Science  
Supporting soil scientists across the world in the pursuit of their activities

**Organization** President & Executive Committee, Standing Committee, Honorary Members, Council, National Members  
- President: Prof. Rattan Lal (USA)  
- Vice-President: Prof. Flávio A.O. Camargo (Brazil)

**Division** 4 Divisions, 22 Commissions, 11 Working groups  
- Division 1: Soil in Space and Time  
- Division 2: Soil Properties and Processes  
- Division 3: Soil Use and Management  
- Division 4: The Role of Soils in Sustaining Society and the Environment

**Activities** Providing information about international scientific conference and soil science  
Supporting the scientific activity of each division, commission and working group  
Standardizing technology, analysis, investigation method across the world  
Holding symposium, workshop and seminar  
Being affiliated with various international organizations such ICSU, UN FAO, UNCCD, Global Soil Partnership, etc.

**Congress** World Congress held every 4 years

No.	Date	Country	City
01	Jun. 18-22, 1927	U S A	Washington, DC
02	Jul. 20-31, 1930	Russia	St. Peterburg
03	Jul. 30-07, 1935	U K	Oxford
04	Aug. 24-01, 1950	Netherlands	Amsterdam
05	Aug. 16-21, 1954	Congo	Leopoldville
06	Sep. 04-08, 1956	France	Paris
07	Aug. 15-23, 1960	U S A	Madison
08	Sep. 31-09, 1964	Romania	Bucharest
09	Aug. 05-15, 1968	Australia	Adelaide
10	Aug. 12-20, 1974	Russia	Moscow
11	Jun. 19-27, 1978	Canada	Edmonton
12	Feb. 08-16, 1982	India	New Delhi
13	Aug. 13-20, 1986	Germany	Hamburg
14	Aug. 12-18, 1990	Japan	Kyoto
15	Jul. 10-16, 1994	Mexico	Acapulco
16	Aug. 20-26, 1998	France	Montpellier
17	Aug. 14-22, 2002	Thailand	Bangkok
18	Jul. 09-15, 2006	U S A	Philadelphia
19	Aug. 01-06, 2010	Australia	Brisbane
20	Jun. 08-13, 2014	Korea	Jeju
<b>21</b>	<b>Aug. 12-17, 2018</b>	<b>Brazil</b>	<b>Rio de Janeiro</b>
22	2022	Scotland	Edinburgh

# S B C S



**Brazilian Soil Science  
Society**

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<b>Organization</b>	S B C S - Brazilian Soil Science Society
<b>Established</b>	October 21, 1947
<b>Membership</b>	1,500 soil scientists
<b>Objectives</b>	Promoting all branches of soil Science in Brazil Supporting soil scientists across the country in the pursuit of their activities
<b>Organization</b>	President & Executive Committee, Honorary Members, Council, National Members - President: Prof. Fátima M. Souza Moreira (UFLA) - Secretary General: Prof. Reinaldo Cantarutti (UFV)
<b>Division</b>	4 Divisions, 14 Commissions - Division 1: Soil in Space and Time - Division 2: Soil Properties and Processes - Division 3: Soil Use and Management - Division 4: The Role of Soils in Sustaining Society and the Environment
<b>Goals</b>	a) to promote and improve association between partners and exchange of knowledge between those involved in research, education, dissemination or technical activities for a better use of soil and water in Brazil; b) disseminate the knowledge on scientific methods and applied technologies for use, treatment and conservation of soil and water; c) adapt and standardize nomenclature, methods of soil analysis, and quality control; d) contribute to the organization of the Brazilian Soil Classification System and soil surveys; f) support the development of libraries, museums, and databases specializing in Soil Science.
<b>Meetings</b>	SBCS has been promoting several special events and periodical meetings for exchange of knowledge among members, and dissemination of Soil Science studies. The Brazilian Congress of Soil Science is now in the 35th edition. Additionally, the SBCS promoted 23 editions of the Brazilian Meeting of Soil Fertility and Plant Nutrition, 27 editions of the Management and Conservation of Soil and Water, and 7 editions of the FertBio (Brazilian Meeting of Fertility and Soil Biology). SBCS is also responsible for the Soil Correlation and Classification Meetings, an event in which pedologists discuss, among other things, how soil genesis, morphology and classification can be used in soil conservation, how it fits in the Brazilian Soil Classification System, and how the system can be improved.

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# CONTACTS

## Venue

### **Windsor Convention & Expo Center**

R. Martinho de Mesquita, 129 - Bloco 2 - Barra da Tijuca,  
Rio de Janeiro - RJ, 22620-220  
Phone: (21) 2195-9950

## General coordination

### **Sociedade Brasileira de Ciência do Solo - SBCS**

Departamento de Solos - Edifício Silvío Brandão, s/n  
Cx.P. 231 - Campus da UFV CEP 36570-900 - Viçosa-MG  
Phone: +55 31 3899-2471

[sbcs@sbcs.org.br](mailto:sbcs@sbcs.org.br)

[www.sbcs.org.br](http://www.sbcs.org.br)

## Organizer

### **Activia Conferences & Corporate Travel**

Praça Mahatma Gandhi, 02 | Grupo 621 a 624  
CEP: 20031-100 | Edifício Odeon Cinelândia | Rio de Janeiro  
Phone: +55 21 2534-7100

[congressos@activiaconferences.com](mailto:congressos@activiaconferences.com)

[www.activiaturismo.com.br](http://www.activiaturismo.com.br)

## Commercial contacts

E-mail: [commercial@21wcss.org](mailto:commercial@21wcss.org)

Flávio A. O. Camargo (phone: +55 51 98422-3773; [fcamargo@ufrgs.br](mailto:fcamargo@ufrgs.br))  
José Carlos Polidoro (phone: +55 21 99348-1223; [jose.polidoro@embrapa.br](mailto:jose.polidoro@embrapa.br))  
Ademir Almeida (phone: +55 21 99571-0165; [ademir@activiaconferences.com](mailto:ademir@activiaconferences.com))



**Brazilian Soil Science  
Society**



**ACTIVIA**  
CONFERENCES &  
CORPORATE TRAVEL