

International Union of Soil Science

19th World Congress

Brisbane, Australia

August 1-6, 2010

International Union of Soil Science

19th World Congress

Division 1 – Soils 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

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Important Dates

August – Conference Registration opens

October 31 - Closing date for Paper submissions

December 15 – Confirmation of Oral presentations

February 15 – Confirmation of Paper acceptance

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<http://www.ccm.com.au/soil/index.html>

Opportunities for a Common Global Soil Classification System

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Las Cruces, New Mexico

Report to

U.S. National Cooperative
Soil Survey Conference

Opportunities for a Common Global Soil Classification System

In collaboration with

- Dr. Hari Eswaran, National Leader, World Soil Resources
- Dr. Craig Ditzler, National Leader, Soil Survey Standards
- Dr. Christopher Smith, National Leader, Tech Soil Services

Towards A Global Soil Classification System

- Every Natural Science has
 - A common taxonomic system
 - Botany
 - Anthropology
 - Astronomy
- All Natural Taxonomic Systems are
 - Accepted & used Globally
 - “Soil Taxonomy”, viewed as a national system has yet to have an international acceptance

Towards A Global Soil Classification System

- International Politics
 - Over last Century Personalities have
“Mellowed”
 - Movement has been for more
“Harmony”
 - Time is Ripe for Acceptance of
 - Standard Soil Terminology
 - Concepts and rationale in elaborating the system
 - Linkages with current systems

Towards A Global Soil Classification System

- System must be Dynamic
 - Continuously Used and Tested
 - The System should not be just a Name
 - The detail of information depends on kinds of Use and Scale of Observations
 - Implies the System has to be “Multicategoric”

Towards A Global Soil Classification System

- Multi-Categoric Systems
 - First Step for A Global System
 - Develop Guidelines for number of “Categories”
 - Develop A “Key” that enables the selection of Taxa

Towards A Global Soil Classification System

- Determine Standards for Terminology and Definitions
 - Common Data Dictionary
 - Agreed upon terms and definitions
 - Common methods of Characterization & Soil Analysis
 - Common methods for Soil Descriptions
 - Scale of Observations **1:12,000 to 1:250,000**
- Core Group responsible for Binding Decisions into a Global System
 - Merge the Different Systems into a Universally Acceptable System
 - A Focus on Use and Management should be the Ultimate Goal

Towards A Global Soil Classification System

- Build upon Existing Systems
 - “**Soil Taxonomy**” was built upon the 1938 soil classification system
 - Soil Conservation Service took ownership and became the Institutional Guardian
 - International Soil Scientists were Invited to contribute to a developing System
 - Individual Countries tried to propose Systems of their own and most have faded away into
“Pedological History”
 - The FAO and WRB are also well known Systems

Towards A Global Soil Classification System

- Considerations for a Global System
 - In Countries where soil classification was Developed by Individuals:
 - “Theoretical Academic Exercise”
 - Many of those Systems fell into disuse quickly
 - In Countries where they developed their own:
 - Examples: China, Russia, South Africa, Brazil, France, Australia, Argentina, Germany, Canada, United States
 - Still in use today

Towards A Global Soil Classification System

- Considerations for a Global System
 - Countries that have adopted “Soil Taxonomy”
 - Examples: India, Thailand, Columbia, United States, etc;
 - “Soil Taxonomy” already translated into multiple Languages
 - Examples: Dutch-ISRIC, Indonesia, French, British, Spanish, Arabic, Italian, etc;

Towards A Global Soil Classification System

- Multi-Categoric Systems
 - **FAO** (No Longer Maintained)
 - “Soil map of the World”
 - Three levels (Very Apt for Scale: 1:5,000,000)
 - There are Many Difficulties for National Mapping
 - **WRB** (ISRIC-Holland)

Towards A Global Soil Classification System

- Considerations for a Global System
 - Making and Interpreting Soil Surveys
 - Subtitle of Soil Taxonomy
 - Linkage to a National Soil Survey Program
 - Important Tool for Many to Buy into the System
- “National Cooperative Soil Survey”**

Towards A Global Soil Classification System

- Multi-Categoric Systems
 - **Soil Taxonomy**
 - Six levels or classes
 1. Series
 2. Family
 3. Sub Group
 4. Great Group
 5. Sub Order
 6. Order
 - 1960 – 7th Approximation
 - 1975 – 1st Edition
 - 1999 – 2nd Edition
 - 2009 – 11th Keys (planned)

Towards A Global Soil Classification System

- **Presentations**

- National Academy of Science
- National Cooperative Soil Survey Conference
- Soil Science Society Of America - 2009
- International Union of Soil Science - 2010

- **Dr. Erika Micheli**

Szent István University Gödöllő, Hungary

- One of WRB Leaders

Towards A Global Soil Classification System

- **Dr. Luca Montanarella, JRC**
 - “Would like to make a joint global soil classification that would be adopted by stakeholders”
 - He has started to move towards this goal
 - “I started to informally test the reaction of some of the key players and it is generating various levels of surprise, given our reputation of not having a common view on this topic across the ocean”
 - “We will have a new common vision between US and EU”

Towards A Global Soil Classification System

- **Luca**

- “My question is: What is hampering us to make soil taxonomy a global system?
 - Is it a political/personal issue or are there truly technical and scientific reasons for this situation?
 - The fact that we agreed to work together should rule out the political/personal problems,
 - So I would expect that the only difficulties are of technical and scientific nature, if at all existing”

Towards A Global Soil Classification System

- **Luca**

- Started to spread the word that USDA-EC
 - “Might jointly publish the next Soil Taxonomy edition as a common publication”
 - “With the ambition to make it a truly global soil taxonomy”
 - “I'm willing to support a follow-up meeting in order to bring together the key players to get the job done”

Towards A Global Soil Classification System

- With Experience and Enthusiasm that
“Exists Today”
 - A Global Soil Classification System is Feasible
 - Will have International Acceptance
- The Generation that Developed the Current Systems are Leaving thru Retirements.
- Today the Opportunity Arises for
 - The Current Generation to Collaborate and
“Realize this Dream”

Towards A Global Soil Classification System

- International Committees formed:
 - 1976 Low Activity Clays – (Alfisols, Ultisols, Oxisols)
 - 1978 Oxisol Order
 - 1978 Soil Moisture Regimes
 - 1980 Andisol Order
 - 1980 Aridisol Order
 - 1981 Vertisol Order
 - 1982 Aquic Moisture Regime
 - 1982 Spodosol Order
 - Their Intent was to:
 - Create a Globally Used System

Towards A Global Soil Classification System

- **Soil Survey Division's View:**
 - The US should Not take the lead role –
But a support role!
 - Not for the world to use our Soil Taxonomy but rather
 - Countries to have systems that incorporate the basic tenets of Soil Taxonomy so that
 - **Everyone can translate one to the other and communication is facilitated**

Towards A Global Soil Classification System

- Next Steps
 - 19th World Congress (2010) in Brisbane, Australia
 - A decision **"To Proceed"** can be made
 - Form an **International Committee**
 - Charges to Committee
 - Decide on categories and classes for:
"Global Soil Classification System"

Questions ?????

Comments !!!!

Thank you