



Report on the 9th ESSC International Congress
Soil's Contribution to People:
from Food to Life supporting Services

Tirana (Albania) 26-28 September 2019

The 9th International Congress of the ESSC, was celebrated in Tirana (Albania) from 26 to 28 September 2019, hosted by the Agricultural University of Tirana (AUT) and was attended by about 100 scientists from 25 different EU and non-EU countries. The objective of the congress, inspired by the major theme “*Soil's Contribution to People: from Food to Life supporting Services*”, was to present up to date research results, practical examples, and policies, to support the role of soil resources on human existence and as a source of food and life supporting services.

The Congress hosted 28 oral presentations and four poster sections and has been endorsed by International Union of Soil Sciences (IUSS), World Association of Soil and Water Conservation (WASWAC), International Soil Conservation Organization (ISCO), Global Soil Partnership (GSP), World Agricultural Heritage Foundation (WAHF), European Commission (EC), Global Environment Facility (GEF), UN Environment Program (UNEP), EUROSIL, and the Kingdom of the Netherlands. Furthermore, Ente Parco dei Nebrodi and CIHEAM Bari financially sponsored the event.

The minister of Agriculture and Rural Development of Albania H.E. Mr. Bledi Cuci (Fig 1) delivered the opening speech of the Congress, followed by the vice Minister of the Environment and Tourism of Albania Mrs. Ornela Cuci (Fig 2). Prof. Carmelo Dazzi (Fig 3), president of the European Society for Soil Conservation (ESSC) and Prof. Pandi Zdruli (Fig 4) spoke in the name of the Honorary President of the Organizing Committee of the Congress.

Prof. Fatbardh Sallaku (Fig. 5), president of the Scientific Committee of the Congress and Dean of the Faculty of Agriculture and Ecology of the AUT who welcomed all the participants at the hosting institution, concluded the opening ceremony.



Fig 1 - The minister of Agriculture and Rural Development of Albania H.E. Mr. Bledi Cuci delivered the opening speech of the Congress.



Fig 2. Mrs. Ornela Cuci, Vice minister of Environment and Tourism of Albania greeting the congress



Fig 3 - Prof. Carmelo Dazzi, president of the European Society for Soil Conservation (ESSC), during his welcome speech.



Fig 4 - Prof. Pandi Zdruli, Honorary President of the Organizing Committee of the Congress.



Fig. 5 - Prof. Fatbardh Sallaku, president of the Scientific Committee of the Congress.



Fig 6 Prof. Sybe Schaap, Technical University of Delft.

Scientific Program

The International Congress was organized in four scientific sessions. The first one was introduced by a lecture of Prof. Sybe Schaap (Fig 6), from Technical University of Delft and Former member Dutch Senate, who stressed that water shortage caused by excessive exploitation of groundwater has consequences for harvests, food supply and the social stability of stricken areas. Climate change is an addition to this man-made threat, which will not be solved by CO₂-reduction. The lecture gave attention to a problem analysis and to policy perspectives.

Prof. Idefons Pla Sentis presented the second session from University of Lleida, Spain (Fig 7). He underlined that in the last decades, as a consequence of increasing demand and high market prices for the food and energetic products of some crops, mainly soybeans and palm oil, there have been drastic and mostly non-controlled changes in the use and management of large areas of lands, which many times have led to new or increasing problems of soil and water degradation. Moreover, he stressed that, frequently those changes are happening on savanna and forested lands, in developing countries on tropical and subtropical regions of Asia, Africa and Latin America, under the initiative of large individual producers and corporations, usually looking more for short-term economic benefits than for any other environmental or social negative consequences. The adoption of no tillage, in particular, without a proper integration of crop rotation and diversification, permanent maintenance of soil cover, along with the adequate setting of soil and water conservation measures (furrows, drainages, etc.), was shown as a paradigmatic example of mismanagement leading to severe land degradation.

Prof. Edoardo Costantini from Academy of Georgofili, Florence; Italy, (Fig 8), introduced the third session, showing a methodological framework for a proper planning of the techniques that farmers operate before and immediately after tree crop plantation. The manipulation of soil and underlying sediments and rocks should be tailored according to local conditions and in function of the target soil characteristics and qualities, not only suited to the crop yield, but also to all soil ecosystem services. The calculation of the soil rooting capacity was introduced as a technical tool to quantify soil ecosystem services and design the earth works.

In the last session, the invited lecture by Prof. José Rubio from Centro de Investigaciones sobre Desertificación-CIDE, Valencia, Spain (Fig 9), highlighted that the current trend of global warming has a special impact on soil functioning conditions in the driest areas of the planet (including the Mediterranean) by increasing aridification processes and, consequently, desertification. Conversely, soil degradation affects important parameters of climate regulation and the atmospheric chemical composition. Among others, Prof. Rubio mentioned changes in albedo,

radiative forcing, soil moisture, surface roughness, evapotranspiration, emission and retention of greenhouse gases (carbon dioxide, methane, nitrous oxide), changes in the condensation surfaces and the emission of aerosols and dust particles.



Fig 7 - Prof. Ildefons Pla Sentis, University of Lleida.



Fig 8 - Prof. Edoardo Costantini, Accademy of Geogofili, Florence.



Fig. 9 - Prof. José Rubio, CIDE, Valencia



Fig 10 - Prof. Takashi Kosaki, IUSS President

The congress was closed by a lecture from Prof. Takashi Kosaki, IUSS President, (Fig. 10) who described soil degradation observed in different environmental conditions, particularly in the

developing countries, in terms of its type, causes, impact on human welfare and possible counter measures. Another keynote speaker, Prof. Rattan Lal, IUSS Past President, participated to the congress with a video on “Soil Conservation for Mitigation of Gaseous Emissions from Erosion-Prone Landscapes”, where he thoroughly explained the linkages between soil erosion and carbon dynamic at different scales, from the soil aggregate to the agricultural field and the landscape. He concluded that soil erosion has an overall negative impact on the carbon budget and soil stewardship for erosion control cannot ignore the fact that when people are poverty stricken, desperate and starving, they pass on their sufferings to the land. In this sense, prof. Lal’s presentation, stressing the linkages between poverty and soil erosion, complemented those of the other keynote speakers, stigmatizing the possible drawbacks of excessive agricultural industrialization. All presentations concluding that people are the mirror image of the land which support them and vice versa.

Social Program

On Saturday 28th, the evening ended with a cheerful social dinner at the Markata Fish.restaurant, eating traditional food and listening traditional Albanian music offered by the organizing committee. During the dinner, Edoardo A.C Costantini (Fig. 11) was awarded with the Gerold Richter award 2019 for his career, and for making significant and internationally recognized contributions to the investigation and promotion of soil conservation in Europe. The dinner also was a good chance to award two young researchers for their commitment with a grant of 500 € each. The winners were Valeria Cardelli (Fig. 12) (Università Politecnica delle Marche, Ancona, Italy), for her study on *Effects of Climate Change on Beech Forest Soil Resilience – Focus on Chemical and Biochemical Properties*, written with Mauro De Feudis, Dominique Serrani, Marziyeh Hoseini, Flavio Fornasier, Luisa Massaccesi, Stefania Cocco, Alberto Agnelli, David C. Weindorf, Giuseppe Corti; and Viktoriia Hetmanenko (Fig. 13) (Institute for Soil Science and Agrochemistry Research named after O.N. Sokolovsky”, Kharkiv, Ukraine) for her study on *Practices of Organic Fertilizers Application for Organic Carbon Management in Ukrainian Chernozems*, written with Ievgen Skrylnyk and Angela Kutova. The best poster presented at the congress was also awarded. The winner was the poster: *Technosols for Remediation of Degraded Range and Agricultural Soils. Properties and Hydrological Behavior*, presented by: Lourdes Luna, Roberto Lázaro and Albert Solé-Benet (Spain).

Finally, Prof. Adam Kertész, of the Hungarian Academy of Sciences, was acknowledged for his long-lasting and dedicated commitment to the society.



Fig 11 - Edoardo A.C Costantini awarded with the Gerold Richter award,



Fig. 12 - Valeria Cardelli awarded with the ESSC grant.



Fig. 13 - Viktoriiia Hetmanenko awarded with the ESSC grant.

Field and Cultural Excursion

On Saturday 28th, a field excursion was organized in the Agriculture Technology Transfer Centre (QTTB) located in Fushe Kruje, about 10 km north of Tirana. The first part of the field trip visit was devoted to the observation and discussion on a benchmark soil profile in Fushe Kruje. Problems linked to soil management and conservation in one of the most crop production areas of Albania were illustrated and discussed by Prof. Pandi Zdruli (Fig.13) who also stressed the differences between the “old” and “new” Albania’s agricultural systems.



Fig 13 - Prof. Pandi Zdruli explain the features of a benchmark soil during the field excursion.

In the second part of the excursion, the congress participants visited the town of Kruja, its old Bazaar of wooden shops, one of the best preserved in the entire region. Kruja hosts also the Museum of Albania's national hero George Kastriot Scanderbeg, a famous tourist destination in the country.

Edoardo Costantini (Accademy of Georgofili, Italy)

Carmelo Dazzi (University of Palermo, Italy)

Pandi Zdruli (CIHEAM, Italy)

Fatbardh Sallaku (AUT, Albania)