



EC, DG JRC IES, ESNB  
Ispra, Italy  
<http://eusoils.jrc.it>



Italian Society of Soil  
Science  
[www.scienzadelsuolo.it](http://www.scienzadelsuolo.it)



IUSS  
<http://www.iuss.org>



CIHEAM  
IAM BARI  
CIHEAM-Mediterranean  
Agronomic Institute, Bari,  
Italy [www.iamb.it](http://www.iamb.it)

# 5<sup>th</sup> International Conference on Land Degradation

Valenzano, Bari, Italy  
18-22 September 2008

## Conference theme

Moving ahead from assessments to actions:  
Could we win the struggle with land degradation?



# Programme

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## CIHEAM

Centre International de Hautes Etudes Agronomiques Méditerranéennes  
International Centre for Advanced Mediterranean Agronomic Studies  
Mediterranean Agronomic Institute of Bari  
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### International Committee on Land Degradation

Marcello Pagliai (Italy) Chairman  
Angel Faz Cano (Spain) Vice Chairman  
Selim Kapur (Turkey) Secretary  
Pandi Zdruli (Italy) Deputy Secretary

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Hari Eswaran (USA)  
Antonio Ramalho (Brazil)  
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O.A.Ogunsula (Nigeria)  
Gabriel Dowouna (Ghana)  
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Hossein Khademi (Iran)  
Maria Gerasimova (Russia)

### **Scientific Committee of the 5<sup>th</sup> ICLD**

Dr. Marcello Pagliai: Chairman, President of SISS and Director of CRA-ABP Research Centre for Agrobiological and Pedology, Florence, Italy

#### Members

Dr. Cosimo Lacirignola, Director MAI-Bari, Italy  
Prof.ssa. Eng. Giuliana Trisorio Liuzzi, Vice President of CIHEAM and University of Bari  
Prof.ssa Silvia Godelli, Regional Apulia minister for Mediterranean Economic, Social and Cultural Cooperation  
Dr. Hari Eswaran, USDA Natural Resources Conservation Service, Washington DC, USA  
Prof. Ahmet R. Mermut, University of Saskatchewan, Canada  
Dr. Nicola Lamaddalena, MAI-Bari, Italy  
Dr. Pandi Zdruli, MAI-Bari, Italy  
Prof. Selim Kapur, University of Çukurova, Adana, Turkey  
Dr. Luca Montanarella, European Commission, JRC-IES Ispra, Italy  
Dr. Angel Faz Cano Technical University of Cartagena, Spain  
Dr. Roque Ortiz Silla, University of Murcia, Spain  
Dr. Antonio Ramalho, EMBRAPA, Brazil  
Dr. Taweesak Vearasilp, Dept. of Land Development, Bangkok, Thailand  
Dr. Edoardo A.C. Costantini, CRA-ISSDS, Florence, Italy  
Prof. Carmelo Dazzi, DATT-University of Palermo, Italy

### **Organising Committee of the 5<sup>th</sup> ICLD**

Dr. Maurizio Raeli, Chairman, Deputy Director, MAI Bari  
Dr. Leonardo Manganeli, Finance Chief, MAI-Bari  
Dr. Pandi Zdruli, MAI-Bari, Italy  
Drs. Rosanna Quagliariello, MAI-Bari, Italy  
Dr. Edoardo Costantini, CRA-ISSDS, Florence, Italy

## **Introduction**

At the 4<sup>th</sup> International Conference on Land Degradation held in Cartagena (Murcia), Spain, in September 2004 it was decided to hold the next conference in Bari, Italy in September 2008. The Cartagena participants overwhelmingly approved the invitation made on behalf of the Italian Society of Soil Science (SISS) and the International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM), Mediterranean Agronomic Institute of Bari (MAI-B), to organise in Italy the 5<sup>th</sup> International Conference on Land Degradation (5<sup>th</sup> ICLD).

The history of these international events started in 1996 in Adana, Turkey when the first conference was held. It was followed by a second one held in Khon Kaen, Thailand in 1999 and another one in Brazil in 2001 organized by Empresa Brasileira de Pesquisa Agropecuária (Embrapa) in cooperation with Secretariat of Sustainable Development of the Ministry of Environment and the Institute of Agronomy in Campinas, Sao Paulo. At the first conference in Adana, a Task Force on Land Degradation and Desertification was formed that was officially transformed into a Working Group of the International Union of Soil Sciences (IUSS) at the 16<sup>th</sup> World Congress of Soil Science held in Montpellier, France in 1998. The working group persists to be active since then.

Land degradation and desertification continue to threaten the livelihoods of millions of people worldwide. It is a process that is present in both poor and rich countries. Latest estimates of the United Nations show that desertification and drought alone cause losses in agricultural production of around €35 billion a year. Problems are particularly acute in the dryland regions covering about 40 percent of the Earth and being the home of more than 2 billion people. For worst, in the dryland regions, about 1,000 million ha are estimated to be degraded: 467 M ha by water erosion, 432 M ha by wind erosion, 100 M ha by chemical deterioration and 35 M ha by physical deterioration. If we add damages caused by overgrazing, deforestation, forest fires, and unsustainable land use practices, the damage is further aggravated. The international and national communities have been involved for decades in tackling these problems. It is encouraging to notice that despite the “troubling” data and pessimistic scenarios there are as well many success stories in sustainable management of natural resources. These last examples show that when the right policy instruments are put in place and most importantly when the local people are both authors and actors of the development process it is possible to make a change and to reverse the trend of land degradation. Showing these examples was one of the main goals of this Conference on Land Degradation.

## **Main topics of the 5<sup>th</sup> ICLD**

- Multidisciplinary assessment of land degradation and desertification at local, national, regional and global scales;
- Interaction between natural ecosystem components (land, water, biodiversity) and socio-economic indicators and their overall impact on land degradation;
- Impacts of human mismanagement on natural resources and examples of best management practices in reducing land degradation effects;
- Promotion of income-generating activities that alleviate poverty through enhancement of sustainable crop production systems and valorisation of indigenous knowledge in sustainable ecosystem management;
- Participatory management of natural resources as a mean to sustain both productivity and environmental sustainability;
- Establishing the role and responsibilities of various stakeholders in reducing the negative effects of land degradation and enhancing soil conservation measures;
- State and development of policy options, management strategies, and guidelines for sustainable natural resources use and management;
- Development of economically sustainable measures that match with environmental quality.

## **Welcome address**

The Centre International de Hautes Etudes Agronomiques Mediterraneennes (CIHEAM) was founded in 1962 as Intergovernmental Organization under the auspices of the OECD (Organization for Economic Co-operation and Development). It has the mandate to constitute an instrument of cooperation between the countries of the Mediterranean in the domains of post-graduate agricultural education and the promotion of agricultural research through cooperative networks. At present, CIHEAM comprises thirteen member countries: Albania, Algeria, Egypt, France, Greece, Italy, Lebanon, Malta, Morocco, Portugal, Spain, Tunisia, and Turkey.

For more than half a century CIHEAM has been a leading institution of research, education, and cooperation in the Mediterranean. Through its four Institutes located in Zaragoza, Spain, Montpellier, France, Bari, Italy and Chania, Greece has trained hundreds of students, researchers, policy makers, NGO representatives and farmers alike how to use efficiency the limited Mediterranean natural resources and most typically land and water. The CIHEAM plays also a very important role in promoting sustainable rural development and environmental protection by endorsing a participatory approach and direct communication with all relevant stakeholders. The areas of expertise include organic farming, integrated pest management, environmental impact assessments and environmental management, plant and animal production, aquaculture and fisheries, rural economics, climate change impacts and adaptation, agricultural policies and agrofood chains, innovation and development of rural territories, protection and conservation of Mediterranean environments, plant biotechnologies, and seed conservation. Working in partnership with several national institutions as well as with international organizations active in the Mediterranean (like ICARDA, FAO, IFAD, etc.) CIHEAM has accomplished its mission and also constitutes a focal point that permits decision-makers, engineers, teachers, researchers, students and technicians to be capable of conceiving and implementing agricultural, food and environmental policies that are appropriate for the sustainable development of the region.

The Mediterranean Agronomic Institute of Bari (MAI Bari) has a long experience in training, cooperative research and networking activities in the domain of land and water resources management, integrated fruit tree protection, research in entomology, bacteriology and mycology, and Mediterranean organic agriculture. The Institute presently manage either in the role of the coordinator and/or participate in 94 national, regional, EU and international funded projects that involve more than 50 countries worldwide. Its activities have expanded beyond the Mediterranean borders, and in addition to hundreds of students from the Mediterranean, over the last years the number of students from Asia and Latin America has increased notably. Both CIHEAM and the MAI Bari are recognised by the United Nations Convention to Combat Desertification (UNCCD) as important stakeholders for the implementation of the UNCCD and more specifically for the issues that are of concern to the Committee of Science and Technology (CST) of the UNCCD.

We are delighted that so many people from all continents have come to Bari to discuss about land degradation. It shows that this problem do exists everywhere no matter the stage of economic development or how rich or poor a country it is. We have to come out however, with solutions that are scientific, pragmatic and feasible. As clearly shown in the theme of this conference it is the moral duty of all stakeholders involved in the fight against land degradation to show that we are not fighting a lost battle as there are numerous positive examples that deserve much more attentions rather than dark doomed pessimistic scenarios.

Dr. Cosimo Lacirignola

MAI Bari Director

**Thursday 18 September 2008**

***WELCOME GREETINGS AND OPENING CEREMONY<sup>1</sup>***

***10:00– 11:00***

**Place:**

**Fiera del Levante, PADIGLIONE 10, Sala ACERO  
Piazzale Vittorio Triggiani, Bari**

Dr. Nicola Lamaddalena & Dr. Pandi Zdruli - Coordinator and Moderator, MAI Bari

**Greetings from Italian Authorities**

(names to be confirmed)

**Welcome addresses**

Dr. Cosimo Lacirignola	Director of MAI Bari and President of Fiera del Levante
Prof. Ahmet Mermut	IUSS, Chair of Division 1: Soil in Space and Time
Dr. Marcello Pagliai	President of Italian Society of Soil Science
Dr. Luca Montanarella	European Commission, JRC-IES, Ispra, Italy
Prof. Eng. Giuliana Trisorio-Liuzzi	Vice president of CIHEAM

**11:00 – 11:30**

**Break**

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<sup>1</sup> Please note that the Opening Ceremony will take place at Fiera del Levante and not at the MAI – B campus, where the rest of the conference will be held. However, free transportation will be provided for all participants departing from the MAI-B campus in Valenzano. Those that are staying in the hotels in Bari should come to campus or otherwise go directly to Fiera del Levante in Piazzale Vittorio Triggiani, Bari. Buses will leave from MAI – B campus at 9:00 a.m.



17:30 – 18:00	B. Sonneveld:	How good is GLASOD?
18:00 – 18:30	S. Kapur:	The development of the Anthroscape context – A sustainable land use unit: A major achievement of the MEDCOASTLAND project
<b>18:30 – 19:00</b>		<b>Plenary questions and discussions</b>
<b>19:00</b>		<b>Closure</b>

## **Friday 19 September 2008**

### ***SYMPOSIA 3. LAND DEGRADATION IN AFRICA***

***(09:00 –13:30)***

***Chairman: Dr. S. A Alghariani, Libya***

***Co-chairman: Dr. Funso Raphael KUTU, South Africa***

09:00 – 09:20	H. Chennafi:	Evaluation décadaire des besoins en eau de la culture du Blé Dur pour améliorer l'agriculture pluviale en milieu semi-aride des hautes plaines Sétifiennes (Algérie)
09:20 – 09:40	A. Gad:	Quantitative evaluation of land degradation hazard in some Egyptian Desert oases using Remote Sensing and GIS
09:40 – 10:00	G. Andersen:	Land use transformation in a hyper arid cultural landscape (Egypt)
10:00 – 10:20	B. Sonneveld:	Land degradation and livestock production opportunities under climate change: the case of Afar State, Ethiopia
10:20 – 10:40	S.A Alghariani:	Soil erosion control and plant cover protection in North western Libya: Assessment and Evaluation
10:40 – 11:00	M. Stephen Mwangi:	The effects of enclosures for rehabilitating degraded semi arid rangeland in Lake Baringo Basin in Kenya
<b>11:00 – 13:00</b>		<b>Plenary questions and discussions</b>
<b>11:30 – 12:00</b>		<b>Coffee Break</b>
12:00 – 12:20	L. Ngcofe:	The use of Tasselled Cap analyses and household interviews towards assessment and monitoring of land degradation: a case study within the Wit-Kei catchment in the Eastern Cape, South Africa
12:20 – 12:40	S. Madrau:	Olive crops versus fodder shrubs as options to increase the productivity of Mediterranean soils. Land suitability evaluation in Feriana (Tunisia)
12:40 – 13:00	Othniel Mintang Yila:	Adoption of agricultural land management technologies by smallholder farmers in the Jos Plateau, Nigeria
<b>13:00 – 13:30</b>		<b>Plenary questions and discussions</b>
<b>13:30 – 15:00</b>		<b>Lunch at MAI –B cafeteria</b>

***SYMPOSIA 4. LAND DEGRADATION IN ASIA***

***(15:00 –18:30)***

***Chairman: Dr. Talal Darwish, Lebanon***

***Co-chairman: Dr. Hamid Reza Soleymani Osbooei, Iran***

15:00 – 15:20	Ma Hong:	The significance of programmes for conversion of cropland to forest in China
15:20 – 15:40	T. Yakupoglu:	The effect of bio-solid and tea waste applications on erosion index of eroded soils (Samsun-Turkey)
15:40 – 16:00	Ch. Srinivasarao:	Combating land degradation and productivity enhancement in participatory watershed in Madhya Pradesh and Rajasthan under semi arid tropical India
16:00 – 17:20	H. Soleimani:	Determination of priority for some crop systems in the semi arid region of Darab (Iran) considering some sustainable development indices
17:20 – 17:40	G.R. Sahibi:	Cold area desertification and land degradation, its check with people participation (India analyses)
17:40 – 18:00	G. Pietsch:	The use of modern and ancient knowledge for conserving soils on Socotra Island (Yemen)
<b>18:00 – 18:30</b>		<b>Plenary questions and discussions</b>
<b>18:30</b>		<b>Closure</b>



12:40 – 13:00	S. Theocharopoulos:	The status of land degradation in Greece
<b>13:00 – 13:30</b>	<b>Plenary questions and discussions</b>	
<b>13:30 – 15:00</b>	<b>Lunch at MAI –B cafeteria</b>	
15:00 – 15:20	G. Bireescu:	The study of the impact of technological measures on degraded lands by pluvial erosion on the biological activity of the soil
15:20 – 15:40	T. Petursdottir:	Beyond ecology: The importance of local acceptance for successful reclamation: an example from Iceland
15:40 – 16:00	J. Mokhtar:	Documenting soil erosion associated with a bare maize stubble field in Devon, UK
16:00 – 17:20	C. M. Colombo:	Soil spatial variability factors influencing nitrate contamination in groundwater in Molise (southern Italy)
17:20 – 17:40	E. Costantini:	Risk of desertification in Italy and effectiveness of response measures
17:40 – 18:00	Ch. Piccini:	Spatial distribution of organic matter to assess soil quality. A case study in Central Italy
<b>18:00 – 18:30</b>	<b>Plenary questions and discussions</b>	
<b>18:30</b>	<b>Closure</b>	

## Sunday 21 September 2008

### ***SYMPOSIA 7. LAND DEGRADATION IN EUROPE***

***(09:00 –11:30)***

***Chairman: Dr. Thorunn Petursdottir, Iceland***

***Co-chairman: Dr. Radim Vacha, Czech Republic***

- 09:00 – 09:20 A. Faz Cano: Crop residues recycling to improve soil properties and decrease water pollution from agricultural lands
- 09:20 – 09:40 T. Simoniello: Land degradation study in Mediterranean areas at different scales: results of two years of activities in the framework of MILDMAP-Media project
- 09:40 – 10:00 Mariagrazia D'Emilio: Estimation of sensitivity to land degradation due to land management improvements from the use of a new index of mechanisation level
- 10:00 – 10:20 C. Zucca: Desertification risk assessment in an area characterised by high anthropic impact in NW Sardinia
- 10:20 – 10:40 Castañeda del Alamo: Soil investigation using a participative approach for agri-environmental improvement in Monegros, Spain
- 10:40 – 11:00 M. Iannetta: Severe environmental constraints for Mediterranean agriculture and new options for water and soil resources management
- 11:00 – 11:30 Plenary questions and discussions**
- 11:30 – 12:00 Coffee Break**

### ***SYMPOSIA 8. LAND DEGRADATION IN THE AMERICAS***

***(12:00 –14:00)***

***Chairman: Dr. Joseph Benjamin, USA***

***Co-chairwoman: Drs. Eliane Maria Ribeiro da Silva, Brazil***

- 12:00 – 12:20 José Centeno da Silva: Development of methodology and protocol to monitor soil quality in wetland soils using earthworm as indicator (Brazil)

- 12:20 – 12:40 D. Olivera: Evolution and human land management during Holocene in Southern Altiplano Desert Argentina (26°S)
- 12:40 – 13:00 J. Benjamin: Predicting winter wheat yield from soil compaction in the Central Great Plains of the United States
- 13:00 – 13:20 Angel Faz Cano: Metal pollution by mining activities in Sunchulli mining district of Apolobamba (Bolivia)

**13:20 – 13:40 Plenary questions and discussions**

**13:40 – 15:00 Lunch at MAI –B cafeteria**

**15:00 – 16:00 CLOSING PLENARY SESSION**

**Panel:**

**M. Pagliai (Chair), A. Mermut, S. Kapur, A. Faz Cano, P. Zdruli,  
L. Montanarella, E. Costantini**

**Questions and debate**

**Conclusions and recommendations**

**Venue of the next conference**

**16:00 – 18:00 Poster session**

**(Posters will be on display for the whole duration of the Conference. Authors will be at their respective posters on Sunday between 16:00 – 18:00. For details see the list of posters arranged according to the geographic region they belong)**

**ALL PRESENTATIONS WILL BE MADE IN ENGLISH**

**19:00 Departure from MAI-B for social dinner**

**Monday 22 September 2008**

**Technical Visit:**

**Man made soils of Apulia: Anthropic interventions to expand orchard cultivations**

**Cultural Visit:**

**The UNESCO cultural heritage town of Alberobello**

**Time Table**

**09:00** Departure from the MAI-B campus

**09:30** First stop in Capurso: Visit the Land Reclamation and Mechanization Private Company De Sario and operations on the ground

**11:00** Departure for Casamassima to visit newly created grape plantations under drip irrigation

**12:00** Visit processing and marketing Cooperative O.P. OROFRUIT

**13:00 –15:00** Lunch at a restaurant in Putignano (near Alberobello)

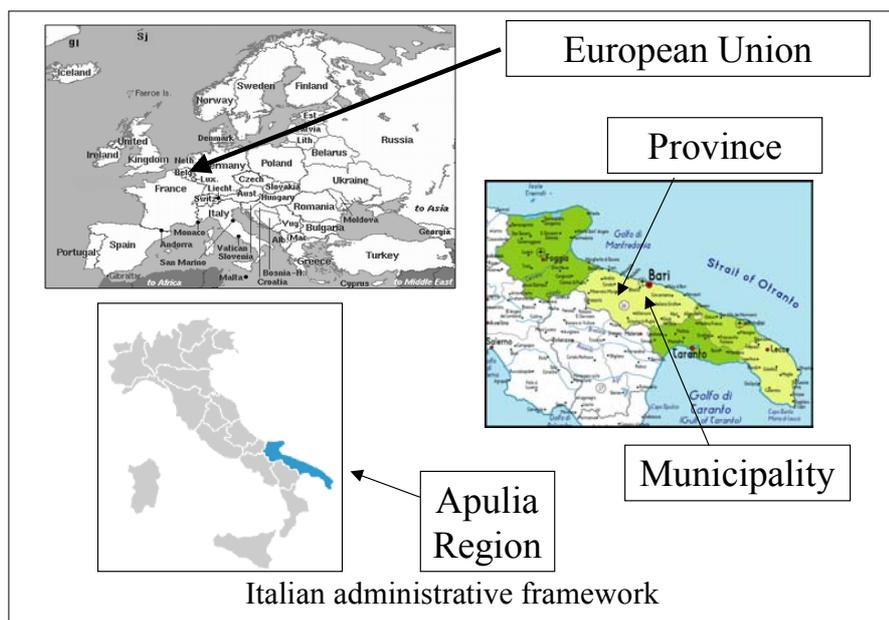
**15:00** Departure for Alberobello

**16:00 –18:00** Visit the town of Alberobello

**18:00** Return for the MAI-B campus

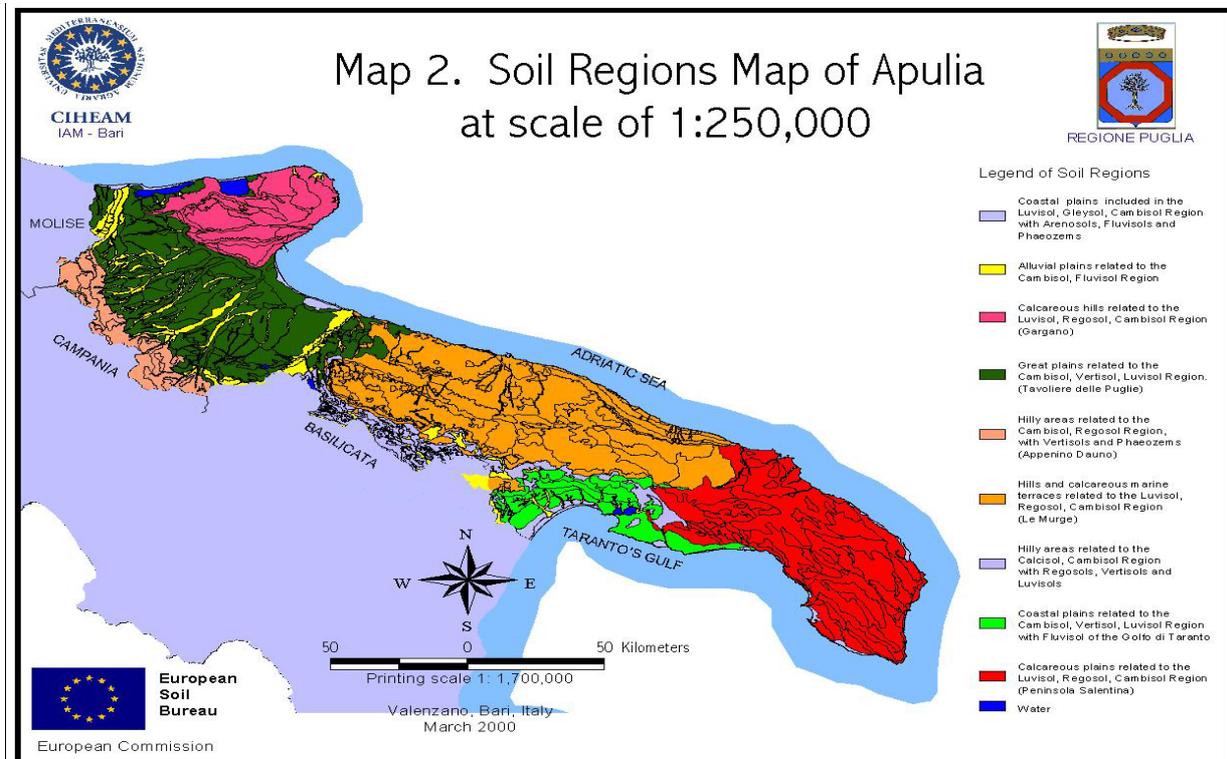
**19:00** Arrival at campus

**Brief description of the technical visit area**

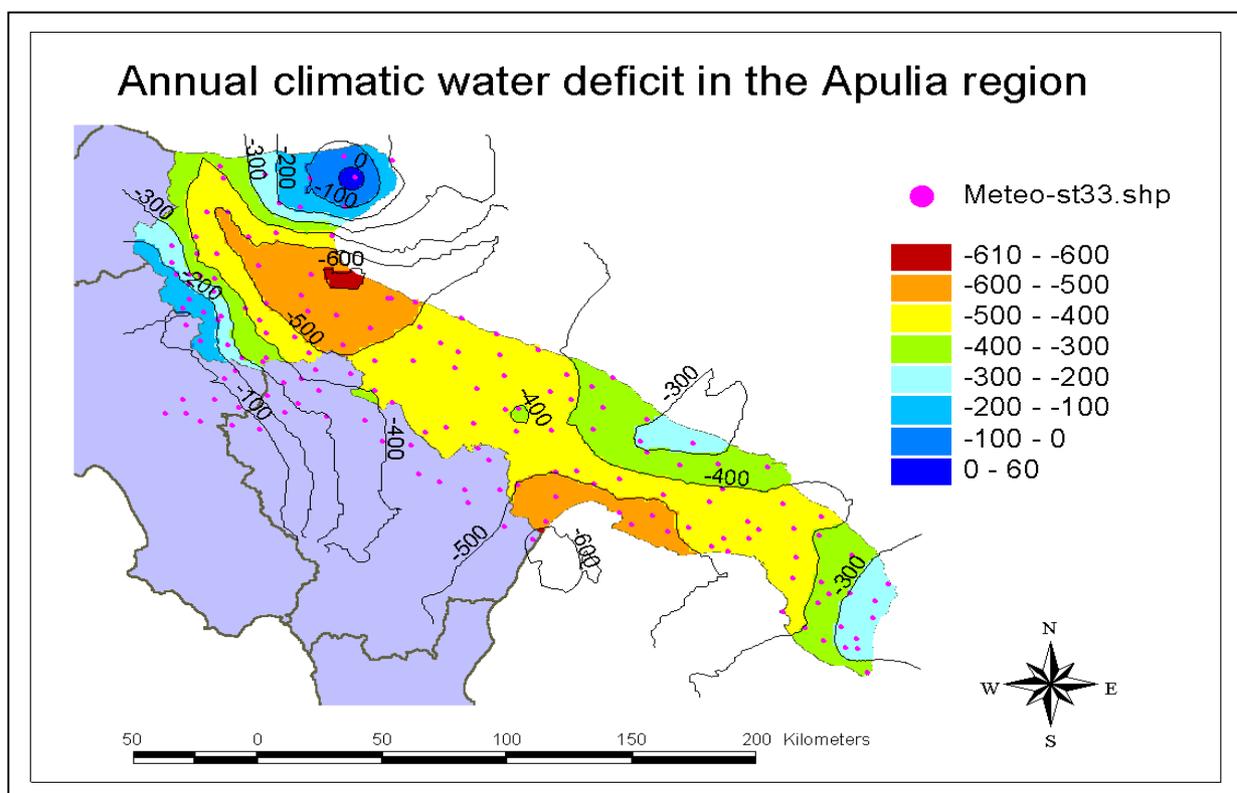


Located in the southeastern part of Italy, the Apulia region is the nation's largest producer and exporter of fresh grapes. Other fruit trees include almonds, cherries, citrus and peaches. Olive groves are also very extensive especially in the central and southern parts of the region. The peculiarities of the Apulian landscapes and the favourable climate conditions have influenced land users to expand drastically fruit trees and grape's cultivation for fresh consumption also in very

shallow calcareous rocky soils often less than 20 cm deep. Breaking and grinding the topsoil using heavy machinery serves this purpose. The goal is to increase soil depth and establish the bases for future plantations. Over the last 20 years such process expanded in an estimated area of more than 20,000 hectares, especially in the surroundings of Bari, the capital city of Apulia.



Source: Zdruli (2000)



Source: Studuto and Todorovic (2001)



Picture shows shallow calcareous soils amended with additional limestones before grinding everything. In the back front already established grape plantations could be seen



**A powerful tractor is used to pull the heavy-grinding machine shown on the right side photo**



**The rock grinding hammers (left) and the outside part of the machine (right)**



Experience shows that when such a process is applied in flat topography areas, erosion is not a problem and such man-made soils (or Anthrosols according to the Word Reference Base for Soil Resources WRB) are quite suitable for production.

The benefits of “grinding” calcareous rocks are two-fold i) increased rooting zone, and ii) release of available calcium. These last is

necessary for the calcium “hungry” grapes and makes them more resistant to transport due to high concentration of Ca in the grape’s grain skin. This gives them also the so-called “*crocante*” sensation that is also an indicator of freshness for the fruit. This is so true that farmers add boulders of calcareous rocks before intervening even in the areas where naturally these rocks are scarce (as shown in the photo above). All new plantations are under drip irrigation systems. Fertigation is also applied, but to a lesser extent. Water comes mainly from groundwater that often could be found as deep as 400 metres. There are two ways of providing water supply: i) the National Aqueduct and ii) private wells. These last are often illegal and this has created problems with lowering even further of the groundwater level due to uncontrolled pumping or even over-pumping.



**Man made cultivated fields after being grinded up to 70 cm deep**



**Newly established grape plantations under drip irrigation**



**Average fresh grape yields of 30-35 tons per hectare are normal for intensive plantations**

There have been subsidies for such expansion of grape cultivation, but this was not always the case. The business was very profitable until a few years ago; hence, farmers and/or land user invested their own financial resources to grind (in Italian *frantumazione*) all over the place. Unfortunately, when such a process expanded also in sloping lands for the cultivation of cereals, especially the EU subsidised *durum wheat*, severe erosion problems were encountered followed also by landslides in some cases. This intensified a strong reaction from environmental groups that were worried for the loss of natural pastures being converted to crop lands, despite the cereal yields were far less than the region's average. For worst, there is not a monitoring system in place to check all the physical, chemical and biological characteristics and status of such soils. The process "soil grinding" almost halted in 2007.

**References:**

- Trisorio-Liuzzi G., Mairota P, Ladisa, G., and Grittani, R. (2004). *A cross-scale perspective on resource degradation assessment in Mediterranean coastal areas: A case study from Apulia (Southern Italy)*. In: Ecosystem-based Assessment of soil Degradation to facilitate land users' and land owners' prompt actions (P. Zdruli, P. Studuto, S. Kapur and E. Akca (Eds). Workshop proceedings, Adana, Turkey 2-7 June 2004. MEDCOASTLAND publication 1. IAM Bari, Italy, p. 35-50. ISBN 2-85352-291-1
- Trisorio-Liuzzi G., Ladisa, G., and Grittani, R. (2005). *The effects of two human activities on land degradation in a typical area of Southern Italy (the Lama Balice-Tiflis watershed in the Apulia region)*. In: Determining an Income-Product Generating Approach for Soil Conservation Management (P. Zdruli and G. Trisorio Liuzzi (Eds). Workshop proceedings, Marrakech, Morocco 12-16 February 2004. MEDCOASTLAND publication 2. IAM Bari, Italy, p. 297-315. ISBN 2-85352-311-X



## **The UNESCO Cultural heritage town of Alberobello**

Alberobello is situated upon two hills, once separated by a riverbed. On the eastern hill is the new town, with modern architectural features; on the other top, set out to west, the trulli are lined up in an urban conglomeration, subdivided into two districts: Monti and Aia Piccola, both National Monuments today World Heritage. A thick vegetation of almonds and olives, which thrive on karstic land, characterizes the agricultural landscape.



Since the birth of Alberobello, it is from the stratified calcareous rock that it has been taken the building materials, used for the trulli roof covering. The history of this unusual town dates back to the second half of the XVI century, when, being a little feud under the control of the Acquaviva family, Counts of Conversano, it began to be filled up with farmers who made the (so called) Selva a fruitful land.



The Counts authorized the colonists to build dry dwellings, in order to get them easily pulled down in case of royal inspection; as a matter of fact, according to the 'Prammatica de Baronibus', the birth of an urban conglomeration required the payment of a tax. This trick allowed then sparing this unjust tax.

It was the year 1797 and a group of brave people from Alberobello, tired of their precarious condition, went to Taranto to ask for help to king Ferdinando IV of Bourbons who listened and made a promise. On the 27th of May 1797, the king sent a Decree by means of which the little village became free. The trullo dwellings are dominated by the external use of sheets, the chiancole, which cover the conic roof and create a wonderful urban centre, unique in the world, that today everybody come and admire.

The Eastern hill is home to the modern town and the other hill towards the West is where the "trulli" are to be found. These buildings are clustered into two quarters forming an urban settlement: Monti and Aia Piccola, and are both considered National Monuments. The "Trulli di Alberobello" were inscribed on the UNESCO World Heritage Site in December 1996. The surrounding countryside features dense plantations of almond and olive trees that are typical in karstic areas whereas the materials used for building the trulli come from stratified limestone rocks from thereabouts.

The trulli are built from overlapping stone slabs, known to architects as corbelled "chiancole" and form the characteristic cone shaped roofs that go towards creating this unique, wonderful town that is so much admired by visitors from all over the world.



**The trulli's of Alberobello in winter and summer**



**Shops selling typical local products**



**The well preserved Alberobello narrow streets**

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