

NATO - CCMS and Science Committee Workshop on Desertification in the Mediterranean Region. A Security Issue

Auditorio “Dr. Santiago Grisolí”
Museo de las Ciencias “Príncipe Felipe”
Ciudad de las Artes y las Ciencias

Valencia (Spain), 2-5 December 2003

PROGRAMME



Organizing Committee

José Luis Rubio

Centro de Investigaciones sobre Desertificación-CIDE

William G. Kepner

U.S. Environmental Protection Agency. Office of Research and Development

David A. Mouat

Desert Research Institute. Division of Earth and Ecosystem Sciences

Fausto Pedrazzini

NATO Public Diplomacy Division. Science Committee

Deniz Beten

NATO Public Diplomacy Division. Committee on the Challenges of Modern Society

Technical Secretariat

Vicente Andreu, Carlos Añó, Sabina Asins, Elisabeth Barrachina, Julian Campo, Artemi Cerdá, Martine Deweer, Eugenia Gimeno, Oscar González, Eva López, Juan Antonio Pascual, Dolores Rius, Alison Trapp

Organizing Institutions

- NATO Science Committee and Committee on the Challenges of Modern Society
- Centro de Investigaciones sobre Desertificación-CIDE (CSIC, Universitat de València, Generalitat Valenciana)
- U.S. Environmental Protection Agency, Office of Research and Development
- Desert Research Institute, Division of Earth and Ecosystem Sciences
- United Nations Convention to Combat Desertification

Collaborating Institutions

- Museo de las Ciencias "Príncipe Felipe". Ciudad de las Artes y las Ciencias de Valencia
- Ministerio de Medio Ambiente, Spain.
- Conselleria de Territorio y Vivienda. Generalitat Valenciana
- European Society for Soil Conservation
- Caja de Ahorros del Mediterráneo (CAM)
- Consejo Superior de Investigaciones Científicas (CSIC)
- Alto Consejo Consultivo en Investigación y Desarrollo. Presidència. Generalitat Valenciana
- Universitat de València

PROGRAMME

TUESDAY, DECEMBER 2, 2003

From 8:00 Registration and pickup of materials

9:00 OPENING CEREMONY:

Workshop Presentation: José L. Rubio. ESSC President
Jean Fournet. NATO. Assistant Secretary General. Public Diplomacy Division
Ambassador Diallo. UN Convention to Combat Desertification
Representative of Spanish Ministry of Environment
Rafael Blasco. Hble. Conseller de Territorio y Vivienda. Generalitat Valenciana
José Manuel Aguilar. Director of Ciudad de las Artes y las Ciencias. Generalitat Valenciana

10:30 Coffee-break and Press Conference

11:00 Opening Conference:

William G. Kepner¹ and David A. Mouat². ¹U.S. Environmental Protection Agency. Office of Research and Development. ²Desert Research Institute. Division of Earth and Ecosystem Sciences

Desertification and Security: Perspectives for the Mediterranean Region

11:30 Invited Lecture:

Hans Günter Brauch. AFES-PRESS

Desertification - A New Security Challenge for the Mediterranean? Policy agenda for recognising and coping with fatal outcomes of global environmental change and potentially violent societal consequences

12:00 Invited Lecture:

Uriel N. Safriel. The Hebrew University of Jerusalem

Dryland development, desertification and security in the Mediterranean

12:30 Invited Lecture:

Francisco López-Bermúdez and **Jorge García.** University of Murcia (Spain)

Desertification in the arid and semiarid Mediterranean Regions. A food security Issue

13:00 Invited Lecture:

Gabriele Cascone. NATO Office of Security

Border Security and degradation of the environment: when “hard” meets “soft” security

13:30 Lunch

15:00 Topic 1: Consequences and Implications of Mediterranean Desertification. Southern and Northern Perspectives

Chair: Deniz Beten. NATO Public Diplomacy Division. Committee on the Challenges of Modern Society

Keynote: José L. Rubio. President of the European Society for Soil Conservation. Centro de Investigaciones sobre Desertificación-CIDE
The relevance and consequences of Mediterranean Desertification including Security aspects

Rapporteur: Victor Castillo. Centro de Edafología y Biología Aplicada del Segura (CSIC)

15:30 Annica Carlsson. Organization for Security and Cooperation in Europe (OSCE)
The Environment and Security Initiative: Transforming Risks into Opportunities for Co-operation

15: 45 Country Reports: Mediterranean Dialogue Countries (15 minutes each)

Algeria: Ghazi Ali. Ministère de L'Aménagement du Territoire et de L'Environnement
Problématique de la desertification en Algérie: Etat et mesures de lutte

Egypt: Abd El-Monem Hegazi and Ahmed A. Yousef. Desert Research Center
Security Impacts of Desertification in Egypt

Jordan: T.M. Abu-Sharar. Department of Land, Water and Environment. The University of Jordan
The Challenges of Land and Water Resources Degradation in Jordan: Diagnosis and Solutions

Israel: Yossi Inbar. Senior Deputy Director General, Industries. Ministry of the Environment
Combating Desertification in Israel

Tunisia: Salah Essebii. General Director Office of Development. Ministry of National Defence
L'expérience Tunisienne de développement dans les zones désertiques. Le cas du projet de RJIM MAATOUG

Morocco: Abdellah Ouassou and Taieb Ameziane. National Drought Observatory. Institute Agronomique et Vétérinaire Hassan II
Present situation and measures taken to combat desertification in Morocco

17:30 Coffee-break

18:00 Country Reports: NATO North Mediterranean Countries (15 minutes each)

Turkey: Selim Kapur. Department of Soil Science. University of Cukurova. Adana.
Kapur, S.; Yegengil, I.; Kapur, B.: *Land Degradation and Desertification in Turkey*

Italy: Giovanni Quaranta and Piero Gagliardo. Dipartimento di Ecologia. Università degli Studi della Calabria.
Level of realisation of the National Action Plan (PAN) in Italy

Portugal: Luis Santos Pereira. Research Center for Agricultural Engineering. Technical University of Lisbon. President, National Scientific Organisation to Combat Desertification, Portugal
Pereira, L.S.; Louro, V.; Rosário, L; Almeida, A.: *Desertification, Territory and People*

Greece: Dimitri Lalas.
(To be determined)

Spain: Leopoldo Rojo. Ministerio de Medio Ambiente. Dirección General de Conservación de la Naturaleza.
The National Action Programme to Combat Desertification in Spain

18:45 Oral Presentations (15 minutes each)

Zdruli, P.; Steduto, P.; Bogliotti, C.: *Fostering networking and exchange of information in the Mediterranean region: The MEDCOASTLAND Thematic Network*

Costa Pérez, J.C.: *Desertification in the Mediterranean Region's developed countries: Andalusian anti-desertification strategy*

Karakurt, H.: *Combating desertification, erosion control and forestry in Turkey*

WEDNESDAY, DECEMBER 3, 2003

9:00 Topic 2: Consequences of Degradation on Social, Economic, and Political Issues: Especially on Food Security and Migrations

Chair: Juan Sánchez. Centro de Investigaciones sobre Desertificación-CIDE

Keynote: Peter H. Liotta. Jerome E. Levy Chair of Economic Geography and National Security. United States Naval War College
Environmental stress indicators and the Euro-Mediterranean space

Rapporteur: Pandi Zdruli. The International Centre for Advanced Mediterranean Agronomic Studies. Mediterranean Agronomic Institute of Bari

9:30 Oral Presentations

Tirado Herrero, S. *The role of desertification in deepening the historical conflict between farmers and herders in the arid environments of Northern Africa*

Sahakyan, L. *Social-economic factors in development of desertification processes*

Benbekhti, O. *La désertification: menace ou opportunité de stabilité*

Povellato, A.; Ferraretto, D. *The implementation of policies and their effect on land use changes and population dynamics: a case study in Southern Italy*

Alemayehu, T.; Recatalá, L.; Fabbri, A.G.; Sánchez, J. *Land use change detection as a basis for analysing desertification processes; a case study in Tabernas (Almería, Spain)*

11:00 Coffee-break

11:30 Invited Presentations

FAO: José Benites. *The Framework for Land Degradation Assessment in Drylands (LADA)*

Richard Escadafal. *Remotely sensed long term changes for desertification monitoring in Northern Africa*

Pablo Campos-Palacín. *Mediterranean forest for people without deforestation in North Africa*

12:30 Topic 3: Soil and Vegetation Monitoring Techniques and Programs

Chair: Miguel Acevedo-Coutinho. Technical University of Lisbon

Keynote: Constantino Kosmas. Agricultural University of Athens. Laboratory of Soils and Agricultural Chemistry
Kosmas, C. and Yassoglou, N.: ***Environmentally sensitive areas and indicators of desertification***

Rapporteur: Vicente Andreu. Centro de Investigaciones sobre Desertificación-CIDE

13:00 Bidoglio, G. Joint Research Centre-Ispra
The European Union Policy on Soil Protection: Links to Desertification and an Observatory Network of Watersheds

13:15 Oral Presentations

Bing So, H. *Soil dispersion, the common factor in soil degradation: How well can we measure and manage that?*

Salman, R.A. *Fighting land degradation in the Mediterranean through forest landscape restoration*

Panagea, S.N.; Kosmas, C.S. *The size and effect of rock fragments on post fire erosion characteristics*

Rey, F.; Berger, F. *Optimal bioengineering and forests for erosion control in mountainous catchments with Mediterranean climate*

14:15 Lunch

15:15 Oral Presentations (continuation)

Sánchez Díaz, J.; Antolín Tomás, C.; Carbó Valverde, E. *The present state of desertification in the Valencian Community according to environmental factor*

Cerdà, A. *Agriculture and soil water erosion in Spain*

Alados, C.L.; ElAich, A.; Papanastasis, V.P.; Ozbek, H.; Navarro, T. *Monitoring tools to assess vegetation successional regression and predict catastrophic shifts and desertification in Mediterranean rangeland ecosystems*

De Wrachien, D.; Ragab, R.; Giordano, A. *Climate change land degradation and desertification in the Mediterranean environment*

16:15 Topic 4: Water Resources and Management

Chair: Luis Santos Pereira. Research Center for Agricultural Engineering. Technical University of Lisbon. President, National Scientific Organisation to Combat Desertification, Portugal

Keynote: Idefonso Pla. Departament de Medi Ambient i Ciències del Sòl. Universitat de Lleida (Spain)
Hydrological approach for assessing desertification processes in the Mediterranean Region

Rapporteur: Selim Kapur. Department of Soil Science. University of Cukurova. Adana.

16:45 Oral Presentations

Albaladejo, J.; González, G.; Navarro, J.; López-Bermúdez, F.; Castillo, V. *Forest Hydrologic techniques as a tool to increase security against environmental risks leading to desertification*

Coutinho, M.A.; Antunes, C.R. *Management of forest soils considering water erosion as a control factor*

17:15 Coffee-break

17:45 Oral Presentations (continuation)

Abdelly, C.; Bustan, A.; Harrouni, C.; Huchzermeyer, B.; Koyro, H.W.; Ranieri, A. *Demonstration-site-based research, education, and exchange of information on sustainable land use in arid and semiarid areas*

Martínez de Azagra, A.; Mongil, J.; Rojo, L. *Oasification: a forest solution to many problems of desertification*

Van Dijck, S.; Laouina, A.; Carvalho, A.V. *Surface runoff and groundwater recharge under climate change in semiarid agricultural land (Rabat region, Morocco)*

Tarchitzky, J.; Bar-Hai, M.; Loewingart, A.; Sokolovsky, E.; Pozin, Y. *Wastewater effluent survey*

19:00 Posters + " Walking Dinner"

THURSDAY, DECEMBER 4, 2003

9:00 SPECIAL SESSIONS IN PARALLEL:

Special Session 1: Is it possible to stop desertification? Main constraints and problems

Facilitator: Luis Veiga da Cunha. Portuguese representative in the NATO Science Committee

Rapporteur: (to be determined)

Special Session 2: Combating the lack of society perception of desertification threat. Improving communication

Facilitator: Christopher R. Dowsell. Sasakawa Africa Association. Director of Communications

Rapporteur: Artemi Cerdá. Departamento de Geografía Física. Universitat de València

Special Session 3: Is international cooperation on sustainable development the key issue to stop human displacement from Africa to Europe?

Facilitator: Bruce Jones. Chief, Landscape Ecology Branch. US Environmental Protection Agency. Las Vegas

Rapporteur: Gabriele Cascone. NATO Office of Security

Special Session 4: The role of new technologies and traditional knowledge to alleviate famine and poverty

Facilitator: T.M. Abu-Sharar. Department of Land, Water and Environment. The University of Jordan

Rapporteur: Fausto Pedrazzini. NATO Public Diplomacy Division. Science Committee

11:00 Coffee-break

11:30 Topic 5: Forecasting Techniques and Advances Technologies

Chair: William Kepner. U.S. Environmental Protection Agency. Office of Research and Development

Keynote: David Mouat.

David Mouat and Scott Bassett. Desert Research Institute. Division of Earth and Ecosystem Sciences

The use of alternative futures in a strategy to assess the likelihood of increased land degradation and subsequent political instability

Rapporteur: Luis Recatalá. Centro de Investigaciones sobre Desertificación-CIDE

12:00 Oral Presentations

Nunes, J.M.; Muñoz, A.; Coelho, J.P.; López-Piñeiro, A. *Using a GIS to sustainable use and management of a irrigated area border between Spain and Portugal*

López-Baeza, E.; Bodas, A.; Gimeno Ferrer, J.F.; Velázquez, A.; Saleh, K.; Doménech, C.; Sánchez Alandi, M.A. *Use of Anchor Stations in land surface process studies. Validation activities at the Valencia Anchor Station site*

McDonald, E.; Mouat, D. *A strategy using soil surface information to assess risk to desertification and social security*

Millán, M. *Climatic feedbacks and desertification: The Mediterranean model*

Marini, A.; Melis, M.T.; Naitza, L.; Careddu, M.B. *The ANTENNA Project: a satellite data network in the Mediterranean Basin.*

COOPERATION AND PARTICIPATORY PROGRAMMES

13:15 Maurizio Sciortino

Participatory experience for the evaluation and mitigation of Desertification in the Sicilian Region

Josep Ferre. Agencia Española de Cooperación Internacional

The fight against desertification in the Mediterranean and the Spanish Co-operation of Development: The Azahar Programme

Chris de Wispelaere. NATO

Science for Peace: a tool for collaboration in applied science

14:00 Lunch

15:00 Rapporteurs Sessions (5 minutes each)

Chair: David Mouat. Desert Research Institute. Division of Earth and Ecosystem Sciences

Plenary General Discussion

16:15 Conclusions

Chair: Fausto Pedrazzini. NATO Public Diplomacy Division. Science Committee

Panel: Deniz Beten, William Kepner, David Mouat, José Luis Rubio

17:15-17:30: Closing Ceremony by a representative of Generalitat Valenciana

FRIDAY, DECEMBER 5, 2003

8:30-18:00 Field trip

POSTER PRESENTATIONS

Topic 2: Consequences of Degradation on Social, Economic, and Political Issues: Especially on Food Security and Migrations

Cots-Folch, R.; Martínez Casanovas, J.A.; Ramos, M.C. *Past and present land use changes in the Priorat vineyard region (NE Spain): Historical aspects and new trends*

Marín Sanleandro, P.; Romero Díaz, A.; Sánchez Soriano, A. *Erosion processes caused as consequence of the abandonment of cultivation lands in semiarid environment*

Pascual Aguilar, J.A.; Añó, C.; Valera, A.; Sánchez, J. *Urban growth dynamics (1956-1998) in Mediterranean coastal regions: the case of Alicante, Spain*

Pascual, J.A.; Añó, C.; Sanjaime, V.; Sánchez, J. *Soil sealing in the Province of Valencia, Spain. Preliminary results*

Scardigno, A.; Zdruli, P. *Use of economic incentives to enhance soil conservation in the Mediterranean countries: selected case studies*

Topic 3: Soil and Vegetation Monitoring Techniques and Programs

Ben-Hur, M.; Wakindiki, I.I.C.; Lado, M.; Shainberg, I. *Soil mineralogy effects on runoff and soil erosion*

Fuleky, Gy.; Végh, K.R. *Some consequences of desertification on soil fertility and food security*

Gevorgyan, S. *Land resources degradation optimal management model application in Armenia*

González, O.; Andreu, V.; Gimeno-García, E.; Rubio, J.L. *Impact of forest fires on hydrological properties of a typical Mediterranean forest soil*

Gristina, L.; Poma, I.; Ferrotti, F.; Caruso, A.; Saladino, S. *Influence of Durum wheat-Field pea cropping system at different nitrogen fertilization rate on soil organic carbon in Sicily*

Lado, M.; Ben-Hur, M. *Organic matter and aggregate size interaction on soil structural changes and hydraulic properties*

Messedji, D.; Slama, I.; Abdelly, Ch. *Physiological aspects of Sesuvium Portulacastrum responses to salinity and drought*

Motuzova, G. *Soil chemical base of soil sustainability to technogenic desertification and ecological consequences of the environmental pollution*

Pérez Cabello, F.; Ibarra, P.; Echeverría, M^aT.; de la Riva, J. *Fire and sediment production in two pre-Pyrenean forest basins (Aragón, Spain)*

Ruiz-Sinoga, J.D.; Martínez-Murillo, J.F.; Gallegos, A.; Márquez, J.; Romero, A.; Lucas, B.; Noguera, M.J. *Physical and hydrological soil properties as indicators of desertification processes along a Mediterranean climatological transect in the South of Spain*

Sternberg, M.; Tielbörger, K.; Kigel, J. *From Mediterranean to desert ecosystems: An experimental approach for studying the effects of climate change on plant community dynamics*

Theocharopoulos, S.P.; Florou, H.; Adam, L.; Kalatzakos, H.; Karagianni-Christou, S.; Tountas, P.; Doula, M.; Karetsos, S.; Spyropoulou, I.; Georgiou, P. *Modelling soil erosion in Central Greece*

Vallejo, R.; Alloza, J.A. *Post-fire restoration to combat desertification in Mediterranean climate*

Zucca, C.; Canu, A. *Temporal evolution of soil roughness in areas subjected to channelled erosion*

Topic 4: Water Resources and Management

Alvarez Rogel, J.; Jiménez Cárcelos, F.J.; Egea, C. *Water quality in a coastal salt marsh in semiarid SE Spain: monitoring nutrients and salts inputs from areas with intensive soil use*

Bautista Carrascosa, I.; Cocina, L.; De la Iglesia, F. *Effects of soil management (organic vs conventional) on water retention and drainage in two horticultural crops in Valencia*

Ben Hamed, K.; Castagna, A.; Scebba, F.; Ranieri, A.; Abdelly, Ch. *Changes induced by NaCl in lipid peroxidation and antioxidant enzyme activities of oleaginous halophytic plants: *Crithmum maritimum**

Calvo, A.; Ruiz, J.D.; Sarah, P.; Katra, I.; Zvikel, S.; Arnau, E.; Lavee, H. *The Spatial Distribution of Surface Cover Componentes that Control Geomorphic Processes on Hillslopes along a Mediterranean - Arid Transect*

Fernández Gálvez, J.; Simmonds, L.P.; Barahona, E. *Monitoring soil water in the vadose zone*

Gisbert Blanquer, J.; Ibáñez Asensio, S.; Preciado Biurrun, B. *Anthropic salinization of new irrigation*

Ingelmo, F.; Gamón, S.; Albiach, R. *Available water capacity of a soil amended with composted sludges and affected by simulated processes of soil degradation*

Josa, R. *Effects of soil use on topsoil water content in plots of the North side of the Mediterranean Region (NE Spain)*

Mangul, I.; Fedotova, L. *Evaluation of drought on the territory of the Republic of Moldova*

Pardini, G.; Gispert, M. *Soil and nutrient removal by water erosion in terraced soils under different land use*

Soriano Soto, M.D.; Lloret, I.; Molina, M.J.; Pons, V. *Organic fraction, biological activity and water contents of soil in relation to vegetal cover in Mediterranean Areas*

Topic 5: Forecasting Techniques and Advances Technologies

Amézketa, E.; Del Valle de Lersundi, J.; Donézar, M.; Arnaiz, A. *Using the ESAP-95 software package as a tool for assessing soil salinity/salinization, a pre-condition for land desertification*

Canu, A.; Castrignanò, A.; Zucca, C.; Madrau, S. *Assessment of soil erosion risk using multivariate geostatistics*

Casermeiro, M.A.; Espluga, A.P.; Otero, I.; Cruz Caravaca, M.T.; Hernando, I; Molina, J.A. *Prediction of soil erosion in a small Mediterranean basin using a USLE-SIG application modified by rainfall simulation tests*

Gimeno-Ferrer, J.; Gilabert, A.; Meliá, J.; Koslowsky, D. *Desertification monitoring over the Iberian Peninsula using the Wavelet transform technique*

López Fernández, J.I.; Navarro González, M.; González Carcedo, S. *Influence of inorganic fertilizers and organic amendments on potential phosphohydrolytic in a soil*

Nash, M.S., Wade, T.[†] ; Heggem, D.T. *Does Anthropogenic Activities or Nature Dominate the Shaping of the Landscape in the Oregon Pilot Study Area for 1990-1999?*

Nunes, J.M.; López-Piñeiro, A.; Muñoz, A.; Coelho, J.P. *Monitoring soils to detect temporal changes in selected properties and to prevent desertification process in an irrigation area from Portugal*

Pérez-Cabello, F.; de la Riva, J. *Post-fire regeneration monitoring using multitemporal Landsat TM images*

Rubio, J.L.; Recatalá, L. *How could indicators contribute to approach desertification as a security issue? A framework proposal for the Mediterranean Region*

Ruiz-Gallardo, J.R.; Castaño, S.; Valdés, A. *Use of remote sensing and GIS techniques to determine susceptibility of soil to runoff erosion*

Skripnikova, M.I.; Uspneskaya, O.N. *Current natural and anthropogenic climate change and aridization in the East margin of the Mediterranean Region*

Triantakonstantis, D.P. *Development of a spatio-temporal GIS to model land use changes in the forest of Dadia in northeastern Greece*

Vall-Ilosera, M.; Camps, A.; López-Baeza, E.; Antolín, C.; Selva, D.; Monerris, A.; Sabia, R.; Ferrer, F.; Saleh, K. *SMOS REFLEX 2003: Preliminary results of soil moisture dependence of the L-band brightness temperature of vineyards measured with the LAURA radiometer*

Vidal, J.; Pérez-Sirvent, C.; Martínez-Sánchez, M.J.; Molina, J.; Navarro, M.C.; Marimón, J.; Tovar, P.J.; Barberán, R.; Villar, R.; Solano, A.M. *GIS methodology applied to chemical degradation monitoring in agricultural soils*

Yagüe Ballester, J. *Multitemporal remote sensing of land surface temperatures over the Iberian Mediterranean fringe*

