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# **MEMORANDUM OF UNDERSTANDING**

**To promote long-term collaboration among  
the Mediterranean Countries in sustainable  
use of natural resources**

**PREPARED AND ENDORSED BY THE MEDCOASTLAND  
THEMATIC NETWORK  
(EC CONTRACT ICA3-CT-2002-10002)**

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**MEMORANDUM OF UNDERSTANDING**

(herein referred to as MoU)

*between the***PARTIES:**

<b>MEMBERS OF MEDCOASTLAND THEMATIC NETWORK</b>		
<b>Member n°</b>	<b>Institution</b>	<b>Country</b>
<b>P1</b>	Istituto Agronomico Mediterraneo di Bari – Centre International de Hautes Etudes Agronomiques Méditerranéennes (ISAGME) <sup>1</sup>	ITALY
<b>P3</b>	Alexandria University (UALEX.FA.SWS)	EGYPT
<b>P5</b>	National Council for Scientific Research (NCSRLB.RS.SS)	LEBANON
<b>P6</b>	Ministry for Rural Affairs and the Environment (MAFMT.PH.ARDC.C)	MALTA
<b>P7</b>	Ministere de l’Agriculture (MATN.DS)	TUNISIA
<b>P8</b>	Ministry of Agriculture (MOAPS.SI)	PALESTINE
<b>P9</b>	Ministry of Agriculture and Agrarian Reform (MAAR.SD.LSSG)	SYRIA
<b>P10</b>	Institut Agronomique et Veterinarie Hassan II (IAVHMA.SS)	MOROCCO
<b>P11</b>	University of Çukurova (UCUK.FA.DSS)	TURKEY
<b>P12</b>	Ministrere de l’Agriculture (MAGRIDZ.FRV)	ALGERIA
<b>P13</b>	The National Authority for Remote Sensing and Space Sciences (NARSSS.A.SMD)	EGYPT
<b>P14</b>	University of Jordan (UJORD.AGRI)	JORDAN
<b>P16</b>	University of Malta (UMT.IA)	MALTA
<b>P17</b>	Institut National Agronomique de Tunisie (INAT.CGRE)	TUNISIA
<b>P18</b>	Land Research Center (LRCPS)	PALESTINE
<b>P19</b>	Tishreen University (UTISH.SSSR)	SYRIA
<b>P20</b>	Ministere de l’Agriculture du developpement Rural et Eaux et Forets (MIAMOR.AF)	MOROCCO
<b>P21</b>	Ministry of Agriculture and Rural Affairs (GDRS.RPC.SWR) (the former General Directorate of Rural Services)	TURKEY
<b>P23</b>	Halazen Development Association (HALAZEN)	EGYPT
<b>P24</b>	The Jordanian Society for Desertification Control & Badia Development (JSDCBD)	JORDAN
<b>P25</b>	Agricultural Cooperative Association (AGRICA)	LEBANON
<b>P26</b>	Farmers central Co-operative Society, Ltd (FCCS)	MALTA
<b>P27</b>	Parcelle El Oueslati (OUESLATI)	TUNISIA
<b>P28</b>	The General Union of Peasants (GUP.AAO)	SYRIA
<b>P29</b>	Ecole Nationale d’Agriculture de Meknes (ENAM.SS)	MOROCCO
<b>P30</b>	Tamout Association (AT.MOROCCO)	MOROCCO
<b>P31</b>	Adana Farmers Association (ADFAS)	TURKEY
<b>P32</b>	Institut National de la Recherche Agronomique (INRA.USI)	FRANCE
<b>P33</b>	Consejo Superior de Investigaciones Cientificas (CSIC.IPE)	SPAIN
<b>P34</b>	Università degli Studi di Sassari (USAS:NRD)	ITALY
<b>P35</b>	Commission of the European Communities (COMC.EI:SWW)	ITALY

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<b>P36</b>	Arab Center for the Studies of Arid Zones and Dry Lands – League of Arab States (ACSAD)	SYRIA
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*on*

## **Promotion of long-term collaboration among the Mediterranean countries in sustainable use of natural resources**

### **INTRODUCTION**

The Parties included in this MoU have been working in the MEDCOASTLAND project since October 2002. This is a Thematic Network funded by the European Commission (EC) within the 5<sup>th</sup> Framework Programme. The project, coordinated by the Centre International de Hautes Etudes Agronomiques Méditerranéennes – Istituto Agronomico Mediterraneo di Bari (CIHEAM IAMB), will officially cease on 30 September 2006. Its major objective is the Mediterranean coordination and dissemination of land conservation management to combat land degradation for the sustainable use of natural resources with particular attention to the coastal zones. Land degradation, desertification and environmental deterioration are threatening sustainable development in the Mediterranean. Linked with economic, social and political constraints the consequences could have far-reaching negative effects for the overall long-term stability of the region and beyond. Moreover, accomplishing United Nation's Millennium Development Goals and other obligations deriving from internationally agreed conventions are proving to be some milestone challenges for the region. It is of great significance that this Memorandum is endorsed in 2006 declared by the United Nations as International Year of Deserts and Desertification and could be a direct contribution in this long struggle. The MoU is intended to tackle the important issues of co-operation, collaboration, networking, exchange of knowledge and expertise among the Mediterranean countries in sustainable use of natural resources and especially of land and soil management. One of the major setbacks of many previous national or international projects had been the lack of follow up activities once the project itself comes to an end. Following the objectives included in the Technical Annex of MEDCOASTLAND, this MoU intends to remedy such shortcoming and allow for continued collaboration particularly among the project members. This collaboration however could be only ensured if there is clear political willingness of all included institutions to share experiences, data, knowledge, expertise and best management practices in ecosystem management.

### **PREAMBLE**

Whereas the Parties wish to establish mutually beneficial relationships;

Whereas the Parties recognise the importance of sustainable development of Mediterranean natural resources;

Whereas the Parties in accordance with the present MoU will encourage joint and co-operative initiatives in the field of scientific-technical collaboration;

Whereas the Parties recognise the need to deepen the studies and research activities in the Mediterranean coastal areas;

Whereas the Parties recognise the need to strengthen cooperation and exchange of knowledge in the field of sustainable land and soil management;

Whereas the European Commission has initiated the establishment of the European Soil Data Centre (ESDAC) at the JRC as the only focal point for soil data and information in Europe;

In consideration of the above, the Parties hereby agree to the following:

### **ARTICLE 1 – PURPOSE**

The purpose of this MoU is to maintain, improve and strengthen collaboration among the Parties. In addition, it is intended to be a platform for extended collaboration in the area of natural resources development and use between all the Mediterranean countries. This MoU pays particular attention to the sustainable Mediterranean land, soil, and ecosystem management. The Parties included in this MoU have a common interest on pursuing joint basic and applied research, training, and exchange of knowledge and data to contribute towards sustainable development of the region. They believe this MoU would increase public awareness on land degradation, desertification, and environmental protection and would improve capacity, institutional building, policy development and implementation.

## **ARTICLE 2 – OBJECTIVES**

The Parties agree that this MoU has the following objectives:

- To facilitate the creation of **regional databases** in the framework of the European Soil Data Centre (ESDAC) as tools to assess and monitor the status of land degradation and especially of the vegetative cover as early warning system to reveal degradation and desertification trends. The Parties agree that there is a need to **harmonise** methodologies for data collection and support analyses to better utilise potential available funds to combat land degradation and support regional sustainable development. This would require **participation at national and regional level** and enhancement of co-operation on land degradation assessment and soil conservation management among all the Parties and other institutions of the region;
- To enhance a **interdisciplinary and integrated approach** in natural resources management and conservation;
- To identify **needs and priority topics** to be targeted for future research on natural resources management and providing indications for further EU and international involvement in the region (Annex 3 of this MoU);
- To prepare land/soil management **strategies** to combat land degradation and enhance wide dissemination of **best management practices** and **traditional** technical knowledge;
- To draft appropriate legislation to support **implementation** of guidelines and policies that target sound use of natural resources while identifying the **roles** of scientific community, policy/decision makers and grass root organisations, and to establish a **stakeholders methodology** that recognises both duties and responsibilities in promoting sustainable rural development and overall enhancement of environmental quality by emphasising the **societal approach** of involvement in addressing natural resources management issues;
- To develop and eventually adapt the EU Thematic Strategy for Soil Protection. The Parties recognise the need to collect new soil data and to confront **national soil protection legislation** with EU and international standards;
- To enhance and support **knowledge sharing** and data dissemination;
- To **establish** the **Regional Office** for sustainable land and **SOil** management in the **Mediterranean (ROSOM)** at CIHEAM IAMB as the focal point for regional soil information as the Mediterranean component of the European Soil Data Centre (ESDAC);
- To **collaborate widely** among themselves and with ROSOM, national institutions (governmental and NGOs), with CIHEAM, EC, FAO, UNEP, UNCCD, GEF, Plan Bleu, MAP<sup>2</sup>, MCSD<sup>3</sup>, and/or other international agencies or projects

## **ARTICLE 3 – MUTUAL VALUES**

The Parties declare their mutual belief in the following values that are relevant to this MoU:

- Full transparency and open communication;
- Co-operative mechanisms to ensure the proper allocation of resources;

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<sup>2</sup> Mediterranean Action Plan

<sup>3</sup> Mediterranean Commission on Sustainable Development

- Cost-effectiveness and professional service delivery;
- Independence and non-partisanship;
- Respect for national traditional customs and international human rights standards;
- Respect for ethical values and the gender issue in conformity with national, EU legislation and international conventions and declarations

#### **ARTICLE 4 - MODALITIES OF CO-OPERATION**

The modalities of co-operation could be the following:

- Identification of specific fields of common interest;
- Exchange of information, experience and knowledge;
- Promotion and co-ordination of research projects between the Parties and other interested institutions or individuals;
- Exchange of scientific-technical personnel between the Parties;
- Joint organization of meetings, symposia and workshops;
- Joint publications;
- Joint organisation of summer schools and training programmes;
- Use of available facilities for national data sharing and for regional assessments;
- Use and enhancement of the Internet based MEDCOASTLAND Knowledge Database;
- On-line electronic communication;
- Provide support for each other in making available office space, whenever possible, and assisting in local logistics for travelling staff;
- Commit at providing (if a joint project is identified and funded) full financial reports for all the project activities (including invoices and receipts) using agreed budget structures and procedures;
- Define one person to act as liaison focal point with the other Parties of this MoU;
- In case the Parties (or some of them) decide, under this MoU, to implement joint projects, they shall, prior to starting work and on a case-to-case basis, conclude in advance, a specific written collaboration agreement related to the joint project. These collaboration agreements will cover technical, legal (including the responsibilities of each Party and intellectual property rights) and financial aspects as far as necessary;
- The Parties recognise the Centre International de Hautes Etudes Agronomiques Méditerranéennes - Istituto Agronomico Mediterraneo di Bari (CIHEAM IAMB) as the coordinating unit of this partnership. This is only a facilitating role assigned to CIHEAM-IAMB and do not give it any legal responsibility on its behalf nor on behalf of the other Parties

Detailed description of cooperation and management activities is given in Annex 4 of this MoU

#### **ARTICLE 5 - COSTS**

This MoU implies no financial commitments by any Party and does not establish any legally binding obligations on the part of any of its signatories. The Parties are entering into this MoU with the explicit understanding that the MoU itself does not give rise to a claim for compensation for services against any of the respective governments or institutions. However, the Parties, within their available resources, will communicate and exchange information between them despite availability of additional external funding. If a project proposal is prepared on behalf of the Parties and funding will be available, budget distribution and allocation will be made according to the activities assigned and completed by each Party.

#### **ARTICLE 6 - CONFIDENTIALITY**

- With respect to all information concerning the activities of the Parties related to this MoU (whether

in oral, written or computerised form) disclosed in confidence to one Party by the other, the said Party will not use any such information for any purpose other than the implementation of its obligations under this MoU;

- Each Party will keep and/or treat the information as confidential and not disclose it to any outside third entity without a prior written consent of the concerned Party(s);
- Confidentiality of information exchanged in connection with this MoU shall be maintained for a period of five (5) years after the termination of the Memorandum of Understanding;
- In the case of accidental disclosure of the information by unforeseen matters such as robberies, the Party concerned shall not be held liable according to this Article.

#### **ARTICLE 7 - ENTRY INTO FORCE, DURATION AND RENEWAL**

The MoU will be in effect 1 month following the date of the signature by the last Party. The duration of the MoU is 5 (five) years. It can be prolonged or modified only by written amendment signed by the duly authorised representatives of each Party.

#### **ARTICLE 8 – FUTURE ENTRIES AND MODIFICATIONS**

The partnership in this MoU could be expanded to additional institutions (other than the Parties) that would be interested to endorse and sign it. They should express in writing to CIHEAM-IAMB their wish to join this MoU. CIHEAM-IAMB will inform all the Parties and if an agreement is reached the partnership may be extended. Modifications to this MoU are subject to multilateral agreement.

#### **ARTICLE 9 - TERMINATION**

By recognising that this MoU is not legally binding the Parties reserve the right to withdraw from it or to participate in similar activities with other agencies, organisations, and individuals. Where a Party of this MoU wishes to end its collaboration, it may do so by providing the CIHEAM-IAMB a written notice to that at least 2 months before the intended date of withdrawal. The CIHEAM-IAMB should inform all the Parties on such decision. Upon termination each Party shall retain the right to use the jointly developed intellectual property under this MoU until the termination (withdrawal) date.

#### **ARTICLE 10 - ADMINISTRATIVE PROVISIONS**

This MoU is signed by the legal representative of each Party and by the liaison focal point(s) appointed by the Party for technical, scientific, and administrative issues related explicitly to this MoU. Each Party reserve the right to decide on these nominations depending on its internal rules and regulations. In principle, the persons that have worked and signed the MEDCOASTLAND Contract ICA3-CT-2002-10002 should be the signatories of this MoU.

Each Party retains two signed originals of this Memorandum.

#### **ARTICLE 11 – ANNEXES**

Four annexes complement this MoU:

- Annex 1. The Mediterranean context and its dominant features
- Annex 2. The MEDCOASTLAND project: summary of the major conclusions and recommendations
- Annex 3. Areas of cooperation among the Parties and some indications on further EU and international involvement in natural resources management in the Mediterranean region
- Annex 4. Cooperation and management activities derived by this MoU

**This Memorandum of Understanding is agreed upon and signed by:**

Member <sup>4</sup>	Institution	Legal person	Liaison Focal point(s)	Signature
P1	C.I.H.E.A.M. – Istituto Agronomico Mediterraneo di Bari Via Ceglie, 9 – 70010 Valenzano Bari <b>ITALY</b>	Cosimo LACIRGNOLA Director <a href="mailto:iamdir@iamb.it">iamdir@iamb.it</a> <b>Tel: 39 080 4606 284</b>		
			Giuliana TRISORIO LIUZZI <a href="mailto:giuliana.trisoriol@agr.uniba.it">giuliana.trisoriol@agr.uniba.it</a> <b>+39 080 544 2958</b>	
			Pandi ZDRULI <a href="mailto:pandi@iamb.it">pandi@iamb.it</a> <b>Tel: +39 080 4606 253</b>	
P3	Alexandria University Faculty of Agriculture El-Chatby – Alexandria <b>EGYPT</b>	Fawzi ABDEL-KADER <a href="mailto:sfawzy01@hotmail.com">sfawzy01@hotmail.com</a> <b>Tel: +203 5911172</b>	Fawzi ABDEL-KADER <a href="mailto:sfawzy01@hotmail.com">sfawzy01@hotmail.com</a> <b>Tel: +203 5911172</b>	
P5	National Council for Scientific Research National Center for Remote Sensing/Soil Sector P.O. Box 11/8281 Cit� Sportive, 2047- 8602 Beirut <b>LEBANON</b>	Mouin HAMZE Secretary General <a href="mailto:hamze@cnrs.edu.lb">hamze@cnrs.edu.lb</a> <b>Tel: 961 1 850 125</b>		
			Talal DARWISH <a href="mailto:tdarwich@cnrs.edu.lb">tdarwich@cnrs.edu.lb</a> <b>Tel: +961 4 409845</b>	
P6	Ministry for Rural Affairs and the Environment National Soil Unit National Agricultural Research and Development Centre Ghammieri, Marsa <b>MALTA</b>	Anthony MIFSUD Director General <a href="mailto:anthony.b.mifsud@gov.mt">anthony.b.mifsud@gov.mt</a> <b>Tel: +356-25904245</b>		
			Sonya SAMMUT <a href="mailto:sonya.sammud@gov.mt">sonya.sammud@gov.mt</a> <b>Tel: +356 259 04 179</b>	
P7	Ministere de l'Agriculture Direction des Sols 30 rue Alain Savary 1002 Tunis <b>TUNISIA</b>	Hedi HAMROUNI Director <a href="mailto:hamrounihedi@yahoo.fr">hamrounihedi@yahoo.fr</a> <b>Tel: +216 71 718901</b>	Hedi HAMROUNI <a href="mailto:hamrounihedi@yahoo.fr">hamrounihedi@yahoo.fr</a> <b>Tel: +216 71 718901</b>	
P8	Ministry of Agriculture Rammallah P.O. Box 197 <b>PALESTINIAN AUTHORITY</b>	Azzam Tubaileh Deputy Minister		
			Kasim ABDO <a href="mailto:kasimabdo@yahoo.com">kasimabdo@yahoo.com</a> <b>Tel: 97 02 2961 220</b>	

<sup>4</sup> Reflect the membership number in the MEDCOASTLAND project

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Member	Institution	Legal person	Liaison Focal point(s)	Signature
P9	Ministry of Agriculture and Agrarian Reform P.O. Box 113, Kowatly Street – Douma- Damascus <b>SYRIA</b>	Jamal MAJD General Director		
			Ibrahim WAAD <a href="mailto:WI_MAAR@hotmail.com">WI_MAAR@hotmail.com</a> Tel: 963 11 5743 099	
P10	Institut Agronomique et Veterinarie Hassan II PB. 6202 Rabat- Instituts Av. Allal Fassi Rabat <b>MOROCCO</b>	Fouad GUESSOUS Director General <a href="mailto:dg@iav.ac.ma">dg@iav.ac.ma</a> Tel: 212 3777 17 45/58		
			Ahmed BAMOUH <a href="mailto:a.bamouh@iav.ac.ma">a.bamouh@iav.ac.ma</a> Tel: 212 37 77 8135	
			Allal MHAMDI <a href="mailto:a.mhamdi@iav.ac.ma">a.mhamdi@iav.ac.ma</a> Tel: 212 37 77 17 58	
P11	University of Çukurova Dept. of Soil Science 01330 Balcali, Adana <b>TURKEY</b>	Nedim UYGUN Dean		
			Selim KAPUR <a href="mailto:kaprur@cu.edu.tr">kaprur@cu.edu.tr</a> Tel: 90 322 3386084	
			Erhan AKCA <a href="mailto:erakca@mail.cu.edu.tr">erakca@mail.cu.edu.tr</a> Tel: 90 322 3386084	
P12	Ministère de l'Agriculture Boulevard Amirouche 12, Alger <b>ALGERIE</b>	Ramdane LAHOAUTI <a href="mailto:r_lahouati@yahoo.fr">r_lahouati@yahoo.fr</a> Tel: 213 21 71 87 63	Ramdane LAHOAUTI <a href="mailto:r_lahouati@yahoo.fr">r_lahouati@yahoo.fr</a> Tel: 213 21 71 87 63	
P13	The National Authority for Remote Sensing and Space Sciences P.O. Box 1564 Alf Maskan Heliopolis 23 Joseph Bros Tito St., El Nozha El Gededa – Cairo, <b>EGYPT</b>	Atef SHERIF Director <a href="mailto:aosherif@narss.sci.eg">aosherif@narss.sci.eg</a> Tel: 202 622 5801		
			Abd Alla GAD <a href="mailto:gadabdalla@yahoo.com">gadabdalla@yahoo.com</a> Tel: 202 622 5817	
P14	University of Jordan Faculty of Agriculture P.O. Box 13042 University Road 11942 Amman <b>JORDAN</b>	Muhamad SHATANAWI Dean Tel: 962 6 535 5000		
			Jawad Al-Bakri <a href="mailto:jbakri@ju.edu.jo">jbakri@ju.edu.jo</a> Tel: +962 6 5355000, Ext. 2532	

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<b>P16</b>	University of Malta Institute of Agriculture Msida MSD. 06 <b>MALTA</b>	George ATTARD Dean <a href="mailto:gorge.attard@um.edu.mt">gorge.attard@um.edu.mt</a> <b>Tel: 356 23 402325</b>	George ATTARD Dean <a href="mailto:gorge.attard@um.edu.mt">gorge.attard@um.edu.mt</a> <b>Tel: 356 23 402325</b>	
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Member	Institution	Legal person	Liaison Focal point	Signature
P17	Institut National Agronomique de Tunisie 43 Avenue Charls Nicole, 1082 – Tunis <b>TUNISIA</b>	Hedi DAGHARI Head <a href="mailto:Daghari.hedi@inat.agrinet.tn">Daghari.hedi@inat.agrinet.tn</a> Tel: +216 71 892785	Hedi DAGHARI <a href="mailto:Daghari.hedi@inat.agrinet.tn">Daghari.hedi@inat.agrinet.tn</a> Tel: +216 71 892785	
P18	Land Research Center P.O. Box 20479, Abu Obaidah St.4, Jerusalem <b>PALESTINIAN AUTHORITY</b>	Jamal TALAB <a href="mailto:lrc@palnet.com">lrc@palnet.com</a> Tel: 972 2 6264 089		
			Basim DUDEEN <a href="mailto:basim.dudeen@lycos.com">basim.dudeen@lycos.com</a> Tel: 972 2 6264 089	
P19	Tishreen University Dept. of Soil Science and Soil Reclamation P.O. Box 1467 Lattakia <b>SYRIA</b>	Najeeb GHAZAWI President Tel: 963 41 437 840/1		
			Leila HABIB <a href="mailto:leilahab@scs-net.org">leilahab@scs-net.org</a> Tel: 963-41 438 023	
P20	Ministere de l'Agriculture du developpement Rural et Eaux et Forets Direction des Amenagements fonciers BP 1069 Avenue Hassan II Rabat <b>MOROCCO</b>	Moha MARGHI Secrétaire Général Tel: 212 37 29 99 45		
			Ljouad LAHCEN <a href="mailto:lahcenljouad@yahoo.fr">lahcenljouad@yahoo.fr</a> Tel: 212 37 75 10 44	
P21	Ministry of Agriculture and Rural Affairs General Directorate of Organisation and Support Ankara <b>TURKEY</b>	Dursun Murat OZDEN <a href="mailto:dmozden@yahoo.com">dmozden@yahoo.com</a>	Dursun Murat OZDEN <a href="mailto:dmozden@yahoo.com">dmozden@yahoo.com</a>	

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<b>P23</b>	Halazen Development Association Halazen Village, Matrouh, <b>EGYPT</b>	Ibrahim DAOUD <a href="mailto:idaoud23@hotmail.com">idaoud23@hotmail.com</a> <b>Tel: 203 5911 172</b>	Ibrahim DAOUD <a href="mailto:idaoud23@hotmail.com">idaoud23@hotmail.com</a> <b>Tel: 203 5911 172</b>	
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Member	Institution	Legal person	Liaison Focal point	Signature
P24	The Jordanian Society for Desertification Control & Badia Development P.O. BOX 910994 11191 Amman <b>JORDAN</b>	Yasin ALZu'bi <b>Tel: 962 6 565 1081</b>		
			Raed AL TABINI <a href="mailto:altabini@yahoo.com">altabini@yahoo.com</a> <b>Tel: 962 6 565 1081</b>	
P25	Agricultural Cooperative Association Jieh Main Road, Jieh <b>LEBANON</b>	Kamel EL HAJJ President <b>Tel: 961 7 995 332</b>		
			Safi RAAD <b>Tel: 961-7 995 332</b>	
P26	Farmers central Co-operative Society, Ltd Shed 3 Ta Qali Market Centre Balzan BZN 09 <b>MALTA</b>	Peter CAMILLERI President <a href="mailto:petercamilleri@keyworld.net">petercamilleri@keyworld.net</a> <b>Tel: 356 2141 4955</b>		
			Keith SCICLUNA <a href="mailto:fccs@keyworld.net">fccs@keyworld.net</a> <b>Tel: 356 21 41 4955</b>	
P27	Parcelle El Oueslati 10 Rue Mougi SLIM 1130 – Tebourba <b>TUNISIA</b>	Faouzi EL OUESLATI President <a href="mailto:faouzi.el-oueslati@ch.abb.com">faouzi.el-oueslati@ch.abb.com</a> <b>Tel: 216 98 458 048</b>	Faouzi EL OUESLATI <a href="mailto:faouzi.el-oueslati@ch.abb.com">faouzi.el-oueslati@ch.abb.com</a> <b>Tel: 216 98 458 048</b>	
P28	General Union of Peasants P.O. BOX 123, Kafar Soussa St. Damascus <b>SYRIA</b>	Moufak AL SHAAR <a href="mailto:min-trans.msd@mail.sy">min-trans.msd@mail.sy</a> <b>Tel: 963 11 2237 386</b>	Moufak AL SHAAR <a href="mailto:min-trans.msd@mail.sy">min-trans.msd@mail.sy</a> <b>Tel: 963 11 2237 386</b>	
P29	Ecole Nationale d'Agriculture de Meknes Département des Sciences du Sol Km 10, Route Haj Kaddour 50000 Meknes <b>MOROCCO</b>	Abdelhafid DEBBARH Director <a href="mailto:ena@enameknes.ac.ma">ena@enameknes.ac.ma</a> <b>Tel: 212 55 30 02 39 / 40</b>		
			Rachid BOUABID <a href="mailto:rbouabid@enameknes.ac.ma">rbouabid@enameknes.ac.ma</a> <b>Tel: 212 37 773 788</b>	
P30	Tamount Association Imm A7, Appart 5 Résidence Ibn Sina, 50000 Meknes <b>MOROCCO</b>	Kamel SAID <a href="mailto:skamels@yahoo.fr">skamels@yahoo.fr</a> <b>Tel: 212 061 38 66 93</b>	Kamel SAID <a href="mailto:skamels@yahoo.fr">skamels@yahoo.fr</a> <b>Tel: 212 061 38 66 93</b>	

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Member	Institution	Legal person	Liaison Focal point	Signature
P31	Adana Farmers Association Ciftciler Birligi Adana TURKEY	Cumali DOGRU <a href="mailto:adanaciftciler@superonline.com">adanaciftciler@superonline.com</a> Tel: 90 322 352 7859	Cumali DOGRU <a href="mailto:adanaciftciler@superonline.com">adanaciftciler@superonline.com</a> Tel: 90 322 352 7859	
P32	Institut National de la Recherche Agronomique Unité INFOSOL BP 20619 45166 OLIVET CEDEX FRANCE	Dominique KING Director <a href="mailto:Dominique.King@orleans.inra.fr">Dominique.King@orleans.inra.fr</a> Tel: 33 (0) 238 41 78 45		
			Christine LE BAS <a href="mailto:Christine.Le-Bas@orleans.inra.fr">Christine.Le-Bas@orleans.inra.fr</a> Tel: 33 (0) 2 38417843	
P33	Consejo Superior de Investigaciones Cientificas Istituto Pirenaico de Ecologia Avd. Montanana 177, Apd 202 Zaragoza 50080 SPAIN	????? Tel: 34 976 71 6028		
			Concepción Lopez Inma ALADOS <a href="mailto:alados@ipe.csic.es">alados@ipe.csic.es</a> Tel: 34 976 716028	
P34	Centro Interdipartimentale di Ateneo NRD-UNISS (Nucleo Ricerca Desertificazione) c/o Dip. Struttura Servizi Generali, Facoltà di Agraria, Università degli Studi di Sassari Via Enrico de Nicola, 9 07100 Sassari ITALY	Giuseppe ENNE Director <a href="mailto:nrd@uniss.it">nrd@uniss.it</a> Tel: 39 079 211 1016		
			Claudio ZUCCA <a href="mailto:nrdgis@uniss.it">nrdgis@uniss.it</a> Tel: 39 079 211 1016	
P35	Commission of the European Communities DG JRC Institute for Environment and Sustainability I-21020 Ispra (VA) ITALY	Manfred GRASSERBAUER Director <a href="mailto:Manfred.Grasserbauer@jrc.it">Manfred.Grasserbauer@jrc.it</a> Tel: 39 0332 78 98 34		
			Luca MONTANARELLA <a href="mailto:Luca.Montanarella@jrc.it">Luca.Montanarella@jrc.it</a> Tel: 39 0332 78 5349	

<b>P36</b>	Arab Center for the Studies of Arid Zones and Dry Lands – League of Arab States ACSAD – P.O. Box 2440 - Damascus <b>SYRIA</b>	Farouk Saleh FARES Director General <a href="mailto:acsad@scs-net.org.it">acsad@scs-net.org.it</a> <b>Tel: 963 11 5743 039</b>		
			Abdul Rahim LOULOU <a href="mailto:arloulou@scs-net.org">arloulou@scs-net.org</a> <b>Tel: 963 11 5743087</b>	

## **Annex 1: The Mediterranean context and its dominant features**

This Memorandum of Understanding is intended to tackle the important issues of co-operation, collaboration, networking, exchange of knowledge and expertise throughout the Mediterranean region. Historically people on both northern and southern shores of this *Mare Nostrum* as the Romans used to call the Mediterranean Sea traded goods and exchanged cultural traditions. The sea in between was not the separation between Europe, Africa, Asia and the rest of the world, but the link. People often crossed the sea in both directions and left behind their signs of civilisation as could be seen throughout the region.

The Mediterranean is placed at the crossroads of three continents and yet continues to have a strategic importance at global scale. In itself, is a unique fragile ecosystem, which includes many natural features and a great variety of landscapes, soils, vegetation, geology, climate, water and biodiversity. Most importantly, at the centre are its people, a family of 428<sup>5</sup> million members that call the Mediterranean their home.

The area under consideration is very large, comprising a length of about 46,000 km for the Mediterranean Basin coastline, from which 19,000 km represents island coastlines. The entire coastal region including Mediterranean Europe, North Africa the Middle and the Near East covers an area of nearly 1.5 million km<sup>2</sup> or about 17 percent of the total area of twenty-two bordering countries. Wetlands cover almost 1 million hectares and paralic ecosystems (deltas, mud flats, lagoons, ponds, and coastal marshes) as dominant features of the Mediterranean coastal zone occupy more than half of the overall area covered by wetlands<sup>6</sup>.

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Plan Blue (2005) A Sustainable Future for the Mediterranean, The Blue Plan's Environment & Development Outlook, (Eds. Benoit and Comeau), Earthscan, ISBN –13: 978-1-84407-259-0, page 5

<sup>6</sup> same source as above, pages 306 and 307

## Mediterranean countries and their different limits



Source : Gaussen & De Philippis - FAO

The Mediterranean has 162 islands larger than 10km<sup>2</sup>, including big ones like Sardinia, Sicily, Corsica and Crete and two island states of Malta and Cyprus. In total they house 11 million people. The development of tourism has generated income both for the islands and the entire region, but has exacerbated as well environmental problems and concerns especially along the coastal lines. Malta alone with a population of less than half a million people receives 1.2 million tourists annually. Overall the whole Mediterranean basin receives around 300 million tourists per year making it the third largest tourist destination in the world and predictions are for further increase.

Even though the size of the Mediterranean basin is relatively small, it is currently inhabited by several hundred millions people of which 286 million living in North Africa and the Middle East. The population has increased by 50 % over the last 30 years and the trend remains high especially in the southern part of the basin at 2.1 % change annually while the population increase in the urban areas of North Africa and the Middle East reach as high as 4% and is mainly concentrated in the coastal zones. The population in the southern part of the basin could reach 300 million people by the year 2020<sup>7</sup>.

The stakes for the very existence of the Mediterranean people have been continuously the same: **scarcity of water and land resources**. Confronting these realities required for instance the development of some of the most antique and efficient irrigation systems of the world. Only 13 percent of the Mediterranean land is considered fit for agricultural use<sup>8</sup> and around 5 percent of the land resources included in the North African and the Middle Eastern countries are suitable for agriculture; the rest is made of pastures, forests, shrubs, urban zones, badlands, rocky areas, and deserts. The ratio between hectares of arable land per capita is around 0.2 in North Africa and the Middle East. Still today's agriculture relies on these natural resources to provide food and fiber for the rapid growing population and the tourism industry that both provide important revenues for the local economies, but

<sup>7</sup> same source as footnote 3, page 6

<sup>8</sup> FAO (2000) Land Resource Potential and Constraints at Regional and Country Levels. FAO, Rome (World Soil Resources report 90)

put as well a strong pressure especially on natural resources. Sustainable land management and land use planning has yet to become a common practice in the region and endorsing international agreements such as the UNCCD or the Biodiversity Convention are important prerequisites for the future.

The Mediterranean is the cradle of European civilisations and possesses an enormous cultural heritage. The coastal areas alone include 48 UNESCO world heritage sites of exceptional importance<sup>9</sup>. The magnificence of Cinque Terre terraces in Italy and several other important sites from Morocco to Lebanon and Turkey require the attention and the care of the Mediterranean people in the first place.

The region is faced with many challenges. Issues like land degradation, soil sealing and urban sprawl especially along the coastal areas, desertification, salinisation, sand encroachments, overgrazing, deforestation and forest fires, drought frequency, impoverishment of soil fertility and reduction of organic matter in the soil, often accelerated by human mismanagement, are present throughout the Mediterranean and should be addressed without any further delay.

Developing sustainable agricultural production region wide reduces the internal and external migration of the labour force; which in itself is an effective way to reach the food security goal through the efficient use of natural resources. As the population is increasing, natural resources are under increasing human-induced pressure. In particular the issue of the reduction and misuse of water and land resources is very sensitive. This could dramatically imbalance further more the overall degradation of the resources and could lead for wars and conflicts, thus increasing poverty and social/political instability. Optimising the use of natural resources in order to reach the ardent goals of sustainable development should be considered a strategic priority for the whole region.

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<sup>9</sup> MAP Programme for the protection of coastal historic sites (100 HS), Marseille

## **Annex 2: The MEDCOASTLAND project: summary of the major conclusions and recommendations**

Strengthening the links between all the Mediterranean countries is not merely a political question related to migration and social problems. It is a question of stability and long-lasting development of the region. The European Union is convinced about this fact and since many years has been very active in its Mediterranean policy. In 1976 in Barcelona was held the first Intergovernmental Conference on the Protection of the Mediterranean that approved the Mediterranean Action Plan. This was followed by a series of conferences and treaties. One of the most important events was again held in Spain known as the Barcelona Convention for the Protection of the Mediterranean that was signed in 1995. The initial Barcelona Convention of 1976<sup>10</sup>, which entered into force in 1978 and amended in 1995, and the Protocols drawn up in line with this Convention aim to reduce pollution in the Mediterranean Sea and protect and improve the marine environment in the area, thereby contributing to its sustainable development. In 1996 the governments of the region and the European Community put in place the Mediterranean Commission on Sustainable Development (MCSD) with a very broad and ambitious mandate in terms of sustainable development strategy. Additionally the EU has funded a large number of research projects through the International Cooperation in the Mediterranean (INCO and MEDA Programmes). They all have contributed in enhancing sustainable development and environmental protection.

Following the EU's long-term policies and involvement in the region, to narrow the lack of coordination and to fill in the information gaps between policy and decision makers, researchers and rural communities, the EC funded also the MEDCOASTLAND Thematic Network (ICA3-CT-2002-10002) within the 5<sup>th</sup> Framework Programme<sup>11</sup>. The project includes partners from 13 Euro-Mediterranean countries (Italy, France, Spain, Malta, Morocco, Algeria, Tunisia, Egypt, Palestinian Authority, Jordan, Syria, Lebanon, and Turkey) totalling 32 members. They represent governmental and scientific/educational institutions, international centres, as well as Non Governmental Organisations (NGOs) and farmer's associations. The project runs from 2002 until the end of 2006. The Mediterranean Agronomic Institute of Bari (IAMB), one of the four affiliated Institutes of the International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM) coordinates the project. CIHEAM-IAMB has more than 40 years experience in the Mediterranean dealing with rural and policy development, cooperation, training and education, as well as scientific research in many areas including irrigation, land management, pest control, organic farming and sustainable agriculture.

Findings of the project show that the fight against land degradation and desertification could be successful if income-generating activities are used to enhance the interest of the local people for conservation of their land and the right balance between bottom-up and top-down decision making is found. All of these have to be supported by policy instruments and appropriate national/regional guidelines. Last but not least, policies should be implemented. It is encouraging to notice that despite troubling existing land degradation data and future predictions exacerbated also by climate change scenarios, there are many examples throughout the region that clearly show excellent results in sustainable natural resources management. MEDCOASTLAND has made them visible through Newsletters, publication of 5 volumes totalling more than 2,000 pages and numerous files of information retrieval downloaded in the Knowledge Database of the project available on the Internet. The project is well received both by the EC and throughout the Mediterranean. It is worth mentioning that MEDCOASTLAND has provided its modest contribution towards reaching the goals of sustainable development in the region.

The following conclusions and recommendations are based upon the results of the whole duration of the project and are unanimously agreed by all the members of the network:

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<sup>10</sup> [http://www.unep.ch/regionalseas/regions/med/t\\_barcel.htm](http://www.unep.ch/regionalseas/regions/med/t_barcel.htm)

<sup>11</sup> <http://medcoastland.iamb.it>

1. Sustainable use of natural resources requires application of an eco-system based management approach that considers both bio-physical (soil, water, biodiversity) and socio-economic indicators
2. Harmonized assessment of land degradation and desertification is needed at local, national and regional level
3. Networking is the best tool for national and international organisations to boost knowledge distribution and most importantly enhance application of scientific and technological advancement, especially in the developing nations; networking is an efficient mechanism to fill the communication gaps between all stakeholders
4. It is recognised that both national and international organisations (including the EU) have supported numerous scientific and development projects throughout the Mediterranean, however their impacts vary either inside each country or region wide
5. Basic research is always needed, however all means should be explored to make sure that research results are ultimately applied and disseminated
6. An interdisciplinary and integrated approach is needed to face the challenges of resource degradation and most importantly to propose solutions to these problems. Land degradation should not be seen as a purely physical process separated from its socio-economic and political context
7. Many shortcomings in land/soil degradation assessments derive from lack of cause-effect relationships between severity of degradation and agricultural productivity level
8. A clear distinction should be made between areas affected by land degradation and those highly vulnerable to this process
9. It is realized that, both the degradation process and conservation management actions depend critically on farmer's and society's decisions and that each soil conservation measure must be economically sustainable to be implemented and maintained over long time periods
10. It is recognised that a thorough investigation of socio-economic factors is needed in inducing or preventing land owners/users to adopt sustainable land management practices, including the level of income, farmer's perception of land degradation, potential impacts, and access to credit and markets
11. It is very important to elaborate and establish conceptual schemes that could assess and monitor the success and impacts of soil conservation measures
12. Both income-product generating activities and participatory management of the farming system are complementary to each other
13. Sustainability of rural development depends by large on the match between productivity concerns and enhanced environmental quality; food security is an important aspect of this approach, especially in the developing countries
14. Almost half of the food needs of North African and Middle Eastern countries derive from imports that drain out considerable precious national financial resources that otherwise could be used for social programmes. Consequently, political stability, the state of the economies of these countries, their exports and the tourism industry will continue to play a very important role in the forthcoming food security outlook
15. Available land for further crop expansion in North Africa and the Middle East is limited. If this happens will require high investments in improving soil fertility and establishing efficient irrigation and draining systems as the newly cultivated land will be of poor quality and will require continuous investments for its amelioration
16. There are countries in the region who have opted large scale irrigation programmes to compliment their food producing capacity, but they are generally at risk due to salinisation and alkalisation, which slowly but surely accompanies irrigation in arid and semiarid environments
17. It is recognised however that the Mediterranean region is not exploiting all its potentials in terms of natural and human resources; better exchange of knowledge, cooperation and trade is needed

18. There are numerous good achievements in sustainable natural resources use and management in the region. They clearly indicate that if rural development projects are supported by the local population and the right policies are implemented chances of success are largely increased and agro-technology transfer thus becomes a very useful approach for boosting productivity and environmental quality at regional level
19. Environmental concerns in the region are rising as the societies develop and compete for water and land resources. It is mainly the rainfed agriculture that can support crop growth, however these soils themselves are susceptible to desertification due to the vagaries of climate and human mismanagement. With time, the situation may worsen because of land degradation resulting from mismatch between land quality and land use, which reduce the performance of the soil itself
20. Agri environmental policies should consider the major threats that soils of the Mediterranean are facing and the necessary remedy actions should promote environmentally friendly farm practises
21. Indigenous, traditional crops and agricultural practices of the Mediterranean could be used as remedy to land degradation and as a profitable source of income for the local population
22. Legislative aspects of participatory approach including gender issues, economic, social and institutional aspects have a strong impact in the sustainable use and management of natural resources
23. The relation between effective land management and farmer's active participation is crucial for success. Farmers alone could not bear the burden of land degradation. Top-down decision-making is also dangerous as could ignore real problems; therefore a compromise should be found between bottom-up and top-down approaches
24. Land owners/users need to be involved in project formulation, drafting and execution and decisions makers should provide the necessary guidelines and leadership
25. Centralisation and decentralisation of decision making power in the management of natural resources should be based on local conditions in addition to regional and global concerns that relate to land degradation and sustainability
26. Decentralisation of power and local involvement in decision making through a bottom-up approach could increase chances of success in sustainable natural resources management; public awareness and active participation are also equally important
27. However, experience shows that when the transition period is too long or badly managed by the societies that switch from centrally-controlled forms of governance to free market economic reforms they tend to accelerate degradation of the natural ecosystem due to the diminishing role of governmental institutions, mistrust on them by the local people and ambiguous property rights
28. All stakeholders including rural communities, scientists, researchers, policy and decision-makers should concentrate their efforts to enhance soil conservation and improve environmental quality
29. Recent expansion of urban areas into the rural hinterlands, especially in southern European countries has reduced drastically the divisions between farmers and city dwellers, thus rural and urban participation converge towards the same goals of sustainability and environmental protection
30. Successful management of natural resources requires that the right policies are put in place, that international donors coordinate their efforts with national institutions, and last but not least the local community finds itself as an important stakeholder in the whole process
31. International donors and development agencies should consider themselves as stakeholders in the projects implemented in the developing countries and not as outsiders or just financing institutions
32. Finding the perfect match between soil quality, land use and participatory management is another key for success
33. Applying alternative development models based on social equity and participatory decision-making could reverse the degradation process and results may be achieved with much less ecological, social and financial cost

34. The impact of land degradation becomes heavier with the weakness or lack of societal commitment and/or governmental responses
35. Coordination gaps and lacks in decision making at national, regional or local level are both real in the region's developing nations as well as in the developed EU countries
36. The slow process of policy implementation otherwise known as the "*Mediterranean syndrome*" characterised by the lack of comprehensive plans or programmes to combat environmental problems and poor cooperation between the various administrative sectors is hampering sustainable development in the region
37. Legislation framework is much more elaborated in the developed EU nations compared to developing countries of North Africa and the Middle East; notwithstanding from this, results on the ground show that both areas face similar problems in natural resources management;
38. Competing forms of land use and issues like food security, food safety, trade and market instruments strongly influence the status and quality of natural resources;
39. Agricultural productivity and environmental quality are very much linked to each other; legislation should consider them both in an ecosystem-based context
40. Interference between different aspects of legislation makes it difficult to establish the roles and responsibilities of governmental structures at all levels, thus a more flexible and self-managed administration is needed; In addition, legislation needs to be renewed and updated continuously
41. Policy and politics are two different issues; being a politician does not necessarily mean being a good policy-maker. Following this, the support of the scientific community in policy development is essential and should be strengthened
42. The inability to include environmental thinking into economic and development decisions translates into a failure of economic development, and imbalance between social and economic concerns
43. Corruption could have devastating repercussions on natural resources. It should be combated with the same strength as the naturally occurring land degradation processes
44. Good governance should be based on sound institutions, prudent policies, transparent processes, open access to information, and equitable participation in decision making. The lack of implementation of policies and guidelines in land and water management has accelerated land degradation in the Mediterranean region
45. MEDCOASTLAND has managed to create a solid network and a functional communication structure between researchers, decision makers, land users (farmers' association) and other non-profit organisations involved in the fight against land degradation. The MEDCOASTLAND approach has shown that efficient coordination is essential to achieve success. However, without the active participation of all of its members results may have been less evident
46. MEDCOASTLAND has managed to provide and disseminate knowledge from previous research and national practical experiences and allows easy access to knowledge information
47. Internet communication technology is an excellent tool of communication; despite this, MEDCOASTLAND has shown that direct contact with all stakeholders is equally important
48. It is a great achievement of MEDCOASTLAND that regardless of the fact that the majority of its members are soil/land specialists they have deepened into other topics including socio-economic concepts and, participatory, legislative, policy and institutional aspects related to the sustainable use and management of natural resources
49. Finally, MEDCOASTLAND was able to generate scientific debate, experience sharing, excellent networking, ideas for new projects, solid social capital and moreover ever-lasting friendship

**Annex 3. Areas of cooperation among the Parties and some indications on further EU and international involvement in natural resources management in the Mediterranean region**

1. Land degradation is the process of reduction of the quality of the land, especially when non-appropriate forms of land use are applied to particular areas. Even though the care and respect for the land is ingrained in most agrarian societies, localised pressures for food and fiber production or high demand for forest products have historically led to an overexploitation of the Mediterranean land resources. In-depth multidisciplinary studies are needed to understand and turn around the trend of natural resources degradation
2. The land-sea-atmosphere link, though not obvious, is most relevant in the Mediterranean region. Land degradation and desertification also includes “desertification” or eutrophication of the sea. An assessment of the land resource stresses, which are reflected in the quality of the land, is one of the most important issues the science of soil has to provide
3. Moreover than the immediate human-induced problems of land degradation, there is the question of the impacts of global climate change. There is adequate scientific information to suggest that atmospheric temperature would increase over the next few decades. Studies conducted with climatic stations in the Eastern Mediterranean suggest an enhanced evapotranspiration rate resulting from much warmer summers. Areas near the coast are expected to be affected to a greater extent
4. Despite the low organic matter content in the Mediterranean soils, the carbon sequestration capacity of these soils is an important factor to be studied and sustained to reverse the negative trends of CO<sub>2</sub> emissions and meet the challenges of the Kyoto Protocol
5. Concentration of economic activity in coastal areas as a result of urban growth, industrial activities, tourism and irrigated agriculture has augmented pressures on natural resources and often disrupted ecological balance. Consequently, sustainable natural resources use and management in the region is not a choice but a prerequisite to secure prosperity and improve the livelihoods of its people
6. Establishing societal responsibilities and priorities on cost benefit analyses of land degradation effects should follow the paradigm: “*what is the cost tomorrow by doing nothing today*”
7. It is utmost important to identify and establish the link between soil conservative measures, income-product generating activities and farmer’s involvement and is much to be done in determining an income-product generating approach for soil conservation management in relation to economic and production aspects generated by the sustainable land management practices
8. There is rarely a better place other than the Mediterranean where soil and water could complement each other in terms of scarcity and impacts on every day life. Thus, they should receive equal attention. It is impossible to divide the techniques of water harvesting from soil erosion control and waterlogging from flooding and salinisation, just to mention a few examples
9. Addressing sustainability concerns in natural resources management requires the adaptation of an ecosystem based management approach that considers both natural conditions and socio-economic factors. This approach should be ecologically sound, economically viable, socially just, culturally appropriate, humane and based on a scientific holistic approach
10. The Driving forces, Pressures, State, Impact, Response (DPSIR) framework applied by the European Environmental Agency could be used to assess future scenarios and possible responses to land degradation process. By endorsing the DPSIR, the signatories of this Memorandum reserve the right to adopt it according to national or local conditions. They remain open to other methodologies and approaches tackling environmental degradation and its remediation responses
11. Assessment of land degradation and desertification in the Mediterranean and especially of its economical damage should be based on *benchmarks and indicators* and on real data derived through collaborative efforts of the Parties and other national and international institutions. The time has come to replace *ad hoc “quick and dirty”* assessments with scientifically proven results

12. Developing and adopting a common methodology to make harmonised estimates of land degradation throughout the Mediterranean regions could be a first step to perform and apply regional environmental impact assessments. Addressing different scales and allowing for data compatibility by making the best use of available information should be supported
13. Completing and updating the Euro-Mediterranean Geographical Soil Database at the scale of 1:1 million is a necessity for additional studies in the region. CIHEAM-IAM Bari in collaboration with the Parties should take the lead in finalising this database along with the soil map as it was agreed in the Memorandum of Understanding signed in Bari, Italy in December 1999. This database should be complemented with climate, land use land cover, and other possible data. All sources of funding should be explored to support this effort. The final result of this activity will form the Mediterranean component of the European Soil Data Centre (ESDAC) hosted by the JRC, Ispra.
14. Using the 1:1 million-scale soil database could be only the starting point of a long process that would require country-based assessments as scale dependency especially in soil survey is closely related to the national territory of a given country (compare Algeria with Lebanon for instance)
15. The use of contemporary tools such as Remote Sensing (RS) and Geographic Information Systems (GIS) and data derived from them should be encouraged to evaluate and monitor land degradation. However, ground data, field surveys and future databases should be combined with these tools to provide valid and accurate results on soil degradation process.
16. Harmonization and standardization of RS data is urgently needed. Standard methods of radiometric and atmospheric corrections are necessary to generalize results of research and enable comparison between different countries
17. Identification of remotely sensed indices related to land degradation is also needed. Such indices could be further developed to derive food security indicator for the Mediterranean countries
18. The first exercise to be implemented by the Parties could be the Mediterranean Assessment of Soil Degradation (MEDSOD) as a multidisciplinary integrated assessment of soil degradation to be able to show both “*hot and bright spots*” in natural resources management and conservation
19. Showing “*bright spots*” and success stories in ecosystem management is particularly important to demonstrate that investing in sustainable use of natural resources is worthy and should be continued
20. An interesting area of cooperation should be the preservation and valorisation of traditional technical knowledge to contribute to the conservation and enhancement of biodiversity, natural and ecological habitat, cultural heritage, and environmental quality
21. Following the development and eventual adaptation of the EU Thematic Strategy for Soil Protection by the European Commission the Parties agree on the need to collect new soil data and to confront their national soil protection legislation with the EU standards
22. Promotion of public and private partnerships in natural resources management should be strengthened
23. Extensive experience in Participatory Irrigation Management (PIM) should be expanded in Participatory Land Management (PLM) and finally into Integrated Natural Resources Management (INRM)
24. Participatory Land Management at Mediterranean region should involve both identification of threats to the ecosystem and the ways to confront these threats by assuring the direct involvement of the local communities as this process empowers them in enhancing their skills, knowledge and experience leading to greater self-reliance. The institutional capacity of National Resource Management Projects should be strengthened to realize integration and coordination among local institutions
25. Local Development Strategies (LDS) should involve new approaches and common features of bottom up, multi-sectoral partnerships, participation, and institutional support. Local governance as an institutional environment should work with other stakeholders to move towards a more integrated approach that involve: Creating an enabling environment; Identification of roles and

- responsibilities of stakeholders; Enhancing communication; Empowerment through capacity building; Efficient mobilization and allocation of resources; Participatory evaluation and monitoring; and Strengthening local governance
26. Social Capital Development (SCD) is the core of the sustainable development that brings towards Sustainable Land Management and Local Development. SCD deals with the creation of networks that enable collective actions and enhance project's effectiveness and sustainability. The social capital development should be built on the bases of trust and solidarity, collective action and cooperation, social cohesion and information communication
  27. Drought Risk Management is another important aspect of future research. National-level integrated drought monitoring systems are not operational in the region. There has been limited regional coordination among irrigation authorities, agricultural extension services, meteorological departments, and NGOs, about the extent and impact of drought. The region has an overwhelming need for modern and effective drought early warning systems
  28. Landmines and unexploded ordnance (UXO) dating since World War II and after, affect large areas in the South Mediterranean. They hinder significantly the regional agricultural, industrial and tourist developmental programmes. There are no databases in geo-referenced digital form for the landmine-affected and de-mined areas that insure the implementation of sustainable integrated developmental programs. National humanitarian de-mining programs should be further strengthened
  29. The *good farming practices* incentives that the European Community encourages in the EU member states could be expanded and applied in other non-EU countries following detailed analyses on the particularities of each Mediterranean country
  30. Studies are needed for endorsing *productive farming systems* that mostly promote reduced fertiliser use, backing of organic farming, conversion of arable land to grassland, cover crops and strips preventing erosion and fires, preserving areas of special biodiversity, maintenance of existing sustainable and extensive systems, and preserving farmed landscapes
  31. Endorsing *non-productive land management* measures including set-aside land, up-keep of abandoned land and woodland, maintenance of landscape features including ancient terraces and supporting training, farm incomes, employment and societal attitudes should be encouraged and better explored
  32. Future rural development projects should promote sustainable agricultural intensification and diversification, strengthen rural education by targeting the rural poor and achieving a better balance between genders towards sustained development and societal equity agreement. Policy briefings could serve as guidance for countries updating or developing policies on sustainable management of natural resources, codes of conduct, laws and regulations

#### Annex 4. Cooperation and management activities derived by this MoU

In December 1999, in a concerted action with the European Commission, in Bari, Italy was convened the first Euro-Mediterranean Meeting on soil information where some of the current signatories were invited to attend. At the end they all agreed to, as a first step, to establish the Euro-Mediterranean Network of Soil Information that later paved the way for future successful projects like MEDCOASTLAND. The Parties remain hopeful that this MoU would follow such good examples and could further strengthen collaboration between all the Mediterranean countries. They are grateful to the European Commission for funding MEDCOASTLAND and to CIHEAM IAM Bari for successfully coordinating the project.

1. The Parties express their will and interest to support collaboration among them and throughout the whole Mediterranean region. This will depend also on the willingness of the Mediterranean countries and could be done only on the basis of unconditional participation and collaboration
2. Coastal areas are particularly fragile ecosystems. The Parties are confident that protecting them from degradation requires adoption of integrated management strategies, in which the soil and land components are of primary importance
3. Following the objectives of the MEDCOASTLAND project, included in its Technical Annex and in order to better coordinate region-wide efforts and programming actions in natural resources management the Parties agree on the establishment of the **Regional Office for Sustainable Land and SOil Management in the Mediterranean (ROSOM)** hosted by CIHEAM IAMB as the Mediterranean component of the European Soil Data Centre (ESDAC),
4. While appreciating the existence of similar structures in the area of water management (i.e. Arab Water Council or Global Water Partnership) no such entity exists in land and soil management in the Mediterranean
5. Funding for ROSOM could be sought at national and international donors. The CIHEAM IAMB will be the hosting location of ROSOM. The Parties could make concrete proposals for in-kind or cash offers, if any
6. A Mission Statement and the Terms of Reference would be developed for this Office by a Group of Experts composed by Parties 1,3,6,7,11,35,and 36, of this MoU and will be made available to all the Parties in June 2006
7. Whenever established and if this becomes a reality, ROSOM should possess in digital GIS format, among other georeferenced databases, the Euro-Mediterranean Geographical Soil Database at the scale of 1:1 million. It would be also responsible for updating this database. In addition, ROSOM should support the preparation of the Mediterranean Assessment of Soil Degradation (MEDSOD), preparation of a Soil Atlas of the Mediterranean and the establishment of a Mediterranean Soil Museum to be located in the premises of one of the Parties of this MoU. Final decision on the location of this Museum will be made at a later stage. Interested Parties to host the Museum could make concrete proposals
8. ROSOM should organise soil science training programmes and soil survey summer schools for students and extension service agents coming from all the Mediterranean countries. Training would be provided also on the field assessment of land degradation and application of soil conservation measures.
9. ROSOM could provide much needed regional soil information for developing reliable drought and desertification early warning systems
10. Collaboration among the Parties and with ROSOM, national institutions (governmental and NGOs), with CIHEAM, EC, FAO, UNEP, UNCCD, GEF, Plan Bleu, MAP, MCSD, WOCAT<sup>12</sup>, GLCN<sup>13</sup> and/or other international agencies or projects operating in the Mediterranean region should be promoted and strengthened

<sup>12</sup> World Overview of Conservation Approaches and Technologies

<sup>13</sup> Global Land Cover Network

11. Institutional back-up and capacity building is needed towards the reinforcement of existing land and soil structures or the establishment of the national focal points for land and soil information in each Mediterranean country
12. A considerable wealth of knowledge and expertise on land and soils is available in all the participating MEDCOASTLAND countries as well as in other countries in the region. It is very important that this information is preserved and further updated according to European and international standards as the interest for soil information is increasing in order to respond to land degradation, desertification and climate change concerns
13. All signatories of this MoU agree that increasing public access to relevant information and increased transparency and accountability in natural resources decision making process is a fundamental democratic principle that should be supported and strengthened
14. They agree to support the farming communities and other non governmental or non profit organisations in topics related to protecting rural interests and environmental quality
15. They agree to seek for additional and continued funding for basic and applied research in natural resources management in the region
16. They support linkage with similar networks or those of the future and with related institutions located either in MEDCOASTLAND participating countries or in other countries of the region
17. They agree to accelerate the process of free-of-charge exchange of data at their possession (soil, water, biodiversity, geology, vegetation cover, remote sensing, GIS coverage, etc) for scientific purposes and not-for-profit activities
18. All signatories are aware of bureaucrat and administrative constraints and internal regulations. While respecting the rules and regulations of every institution, they commit themselves to speed up free distribution of data among themselves and other similar parties
19. They agree to provide their expertise in monitoring the success of actions derived from the National Actions Plans to combat desertification and mitigate the effects of drought following the endorsement of the UNCCD Convention by every particular country and to offer their support for the implementation of sub regional action plans to combat desertification
20. Networking in the future: MEDCOASTLAND experience shows that careful selection of partners is the key for the success of any project. People should be motivated by scientific interests and collaboration attitudes, including tolerance and respect for all
21. Notwithstanding from the core of MEDCOASTLAND activities (land and soil) it is recognised that not only soil/land scientists should constitute these types of networks. They have to be open also to water, ecology, geology, biodiversity, agronomy, forestry, and socio-economic specialists. Networking is an important aspect of today's global economy and should be based on a participatory approach and contributions from a wide number of scientific disciplines
22. A clear emphasis should be put on capacity building efforts for policy makers, academia, NGOs, farmer's groups, etc. by promoting an overall enabling environment in their countries for improved understanding and sustainable management of coastal areas, land and soil