

# Geo-Cradle Regional Workshop

25 May, 2017

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# CEDARE

- The Center for Environment and Development for the Arab Region and Europe (CEDARE) was established in 1992 as an international inter-governmental Organization with diplomatic status. This was in response to the convention adopted by the Council of Arab Ministers Responsible For the Environment (CAMRE) , in 1991 and upon the initiative of the Arab Republic of Egypt, the United Nations Development Programme (UNDP) and the Arab fund for Economic and Social Development (AFESD).

# Board of Trustees

*Cedare is governed by a high-level Board of Trustees, comprising environmental policy and decision leaders.*

<b>Chairman - Kingdom of Saudi Arabia</b> <b>Vice Chairman - Minister of the Environment Egypt</b>	
<b>Germany - Minister of the Environment, Nature Conservation and Nuclear Safety</b>	<b>Arab Fund for Economic and Social Development Kuwait</b>
<b>Jordan - Minister of the Environment</b>	<b>League of Arab States</b>
<b>Bahrain - Public Commission for the Protection of Marine Resources, Environment and Wildlife</b>	<b>Islamic Development Bank</b>
<b>Spain - Minister of Agriculture, Food and Environment</b>	<b>United Nations Development Programme</b>
<b>Yemen - Minister of Water and Environment</b>	<b>United Nations Environment Programme</b>
<b>United Arab Emirates - Minister of the Environment and Water</b>	<b>Malta - University of Malta</b>
	<b>USA - Earth Institute Columbia University</b>

# **CEDARE's Programmes**

- Water Resources Management Programme
- Land Resources Management Programme
- Knowledge Management Programme
- Sustainable Growth Programme
- Environmental Governance Programme

# Mechanisms for Action

- Promoting Success Stories
- Enhancing Partnerships with the Civil Sector
- Participation in International Treaties and Conventions on the Environment
- Enhancing Human and Institutional Capacities.

## *Knowledge Sub-Network on Water, Energy and Food Nexus” (WEF Nexus)*



sub-network: to increase, share and disseminate Knowledge on “*Water, Energy and Food Security (WEF) Nexus*” perspectives and approaches; and Illustrating through case studies

- Sharing and developing knowledge among relevant stakeholders
- Innovating new models that address resource challenges through new technologies and efficiency gains



# Sustainable water use for securing food production in dry areas of the Med Region (SWUP-MED)



The strategic objective is to *improve food crop production in the Mediterranean region, while meeting future constraints imposed by climate changes.*

Partners: *Denmark, Italy, The United Kingdom, Portugal, Turkey, Australia, Egypt, Syria and Morocco.*



*Social, Ecological and Agricultural Resilience in the Face of Climate Change”  
(SEARCH) Project*

to increase the **resilience** of the (SES) local **communities** and the **ecosystem** by developing a resilience framework for **local action planning**; and testing through demonstration projects



# Approach

- ✓ **Participatory Planning Cycle (PPC)** -  
The PPC is a framework that works at different levels
- ✓ Stakeholders dialogue for **concerted actions**
- ✓ **Demonstrating** and testing through **pilot projects**
- ✓ **Documentation** of case studies, learning process





CIRCE aims at developing for the first time an assessment of the climate change impacts in the Mediterranean area.

The objectives of the project are:

- to predict and to quantify physical impacts of climate change in the Mediterranean area;
- to evaluate the consequences of climate change for the society and the economy of the populations located in the Mediterranean area;
- to develop an integrated approach to understand combined effects of climate change;
- to identify adaptation and mitigation strategies in collaboration with regional stakeholders.

## **Impact of Climate Change on Agricultural Cropping Pattern in the MENA Region (ICCAC)**

The aim of this research is to improve agriculture water management and cropping patterns under the climate change risks by optimizing the cropping pattern of the main strategic crops in Egypt, Jordan and Yemen.

What are the best possible cropping patterns for the main strategic crops in Egypt, Jordan, and Yemen under climate conditions scenarios?

# Promotion of a New Generation of Solar Thermal Systems in the MPC. (SOLATERM)

- 18 partners from Mediterranean and EU countries
- Objective: widespread application of a new generation of solar thermal systems.

**SOLATERM PARTNERS**

Bundesministerium für Umwelt, Naturschutz und  
Raumordnung (Germany)  
Agence Nationale pour la Maitrise de l'Energie  
(Tunisia)  
Barcelona Energy Agency (Spain)  
Centre de Développement des Energies Renouvelables  
(Morocco)  
Center for the Environment and Development for  
Arabic Region and Europe (Egypt)  
Centre d'Information sur l'Energie Durable et  
l'Environnement (Morocco)  
Cyprus Institute of Energy (Cyprus)  
Deutsche Gesellschaft für Technische Zusammenarbeit  
(GTZ) GmbH (Germany)  
Fraunhofer-Institut für Solare Energiesysteme  
(Germany)  
Lebanese Association for Energy Saving and  
Environment (Lebanon)  
Malta Resources Authority (Malta)  
National Energy Research Center (Jordan)  
National Energy Research Centre (Cyprus)  
New Energy Algeria (Algeria)  
New and Renewable Energy Authority (Egypt)  
Palestinian Energy & Environment Research Center  
(Palestinian Territories)  
Technological Education Institute Centre (Greece)  
Universität Stuttgart Institut für Thermodynamik  
und Wärmetechnik - ITW (Germany)

**CONTACT**

GTZ Programmes of Public Sector Clients  
Business Area Agriculture, Environment, Renewable  
Energies  
c/o Federal Ministry of Economics and Technology  
10119 Berlin

**MRS. ANITA REICHERT**  
Project Coordinator  
Tel.: 0049 (0)30 2014-5777  
Fax: 0049 (0)30 2014-5762  
E-mail: anita.reichert@gtz.de  
Web: www.solaterm.eu

**GTZ**

**SOLATERM**  
A NEW GENERATION OF SOLAR THERMAL SYSTEMS FOR  
THE SOUTHERN MEDITERRANEAN REGION

**POTENTIALS**

The countries of the Southern Mediterranean  
region are confronted with a rapidly increasing  
energy demand caused by economic and demo-  
graphic growth.

At the same time this region has a great potential  
for the use of renewable energies notably solar  
energy due to its high level of solar radiation.

The climatic conditions in the Southern Mediter-  
ranean region are favourable for the application of  
large solar thermal systems but barriers exist due  
to high prices and a lack of technologies adapted  
to the specific needs of the region.

Political decision makers, researchers and the busi-  
ness community in the Southern Mediterranean  
region become increasingly aware of the solar ther-  
mal potentials.

The SOLATERM partners from 8 Southern Mediter-  
ranean and 5 EU countries work together to further  
this process.

**PROJECT OUTPUTS**

**REPORT ON FRAMEWORK CONDITIONS FOR SOLAR THERMALS**  
The report describes market drivers, support  
schemes, main actors and important barriers for  
the solar thermal market in the Southern Medi-  
terranean region. The situation differs widely be-  
tween the countries in the region making specific  
support strategies necessary.

**TECHNOLOGICAL KNOW-HOW ON SOLAR COOLING SYSTEMS AND SOLAR THERMAL SYSTEMS**  
The spectrum of solar thermal and  
cooling systems through the promotion  
has solutions.  
The R&D and application of solar  
cooling systems with political measures.

**POTENTIAL ANALYSE**  
The project partners provide an analysis of the re-  
gional potential to use and produce solar thermal  
installations. A focal point of the analysis is the ho-  
tel sector because of the high potential for large  
solar thermal systems. Quality management for so-  
lar thermal products and maintenance of installa-  
tions is necessary to tap the full potential in future.

**ENERGY CONCEPTS**  
Solaterm supports the equipment of selected  
buildings with large solar thermal systems imple-  
menting two case studies for a comprehensive  
energy concept. Guidelines for planning and di-  
mensioning of solar thermal systems are produced.

**KNOW-HOW TRANSFER**  
The main instruments for know-how transfer in  
the Solaterm project are close cooperation in joint  
working groups, expert missions and interships.  
The partners jointly develop new pilot projects.

**WORKING GROUPS**  
The concept is designed to bring together ac-  
tors from the EU and Southern Mediterranean  
countries and from different institutions (indus-  
tries, research institutes, energy agencies). Solaterm  
strengthens the existing regional cooperation  
of energy agencies in the Southern Mediterranean.  
Solaterm initiates also the solar thermal industry to  
benefit from the network.

**SOLAR THERMAL TECHNOLOGIES**

Simple solar water heating systems for households  
are the most widely used solar thermal applications  
in the Southern Mediterranean region up to now.  
SOLATERM promotes the use of large solar thermal  
systems because experiences in producing, plan-  
ning, dimensioning, and maintaining of large sys-  
tems are still limited in the Southern Mediter-  
ranean region.

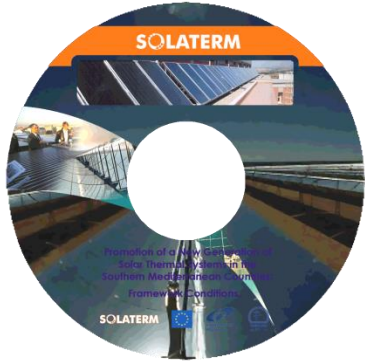
**COMBINED SYSTEMS FOR WATER AND SPACE HEATING**  
In the EU a trend towards solar combi systems can  
be observed. Combi systems can cover a consid-  
erable share of hot water and heating demand of  
buildings.

**SOLAR COOLING SYSTEMS**  
Solar cooling systems use heat on a low tempera-  
ture level to produce cold for air conditioning. Solar  
cooling has a great potential in the Mediter-  
ranean countries due to the high cooling demand  
during summer.

**HIGH EFFICIENT SOLAR COLLECTORS**  
High efficient solar collectors are necessary to  
drive large solar thermal systems. Flat plate col-  
lectors and to a lesser extent vacuum tube collectors  
are standard collector types in the Southern Medi-  
terranean countries.

**Logos of participating organizations:**  
Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit  
BARCELONA ENERGY AGENCY  
CYPRUS INSTITUTE OF ENERGY  
gtz  
C  
Institut Solare Energiesysteme  
ITW  
Institut für Thermodynamik und Wärmetechnik Universität Stuttgart  
MRA  
ALMEE  
NERC  
CEDARE  
NREA

Germany, Spain, Cyprus, Malta, Greece, Jordan, Tunisia, Morocco, Egypt, Morocco, Lebanon, West Bank and Gaza Strip, Algeria, Syria



# Outputs of SOLATERM

**Framework Conditions for Solar Thermal Energy use in the Southern Mediterranean countries**

**SOLATERM**

This project is financed by the Sixth Framework Programme for Research & Technological Development (FP6) of the European Commission.

**SOLATERM**

This project is financed by the Sixth Framework Programme for Research & Technological Development (FP6) of the European Commission.

Framework Conditions for Solar Thermal Energy Use in the Southern Mediterranean Countries

SOLATERM Project Report

By Prof. Dr. Ibrahim Abdel Gelil  
Center for the Environment and Development for the Arab Region and Europe (CEDARE) Egypt

Potential Analysis for a New Generation of Solar Thermal Systems in the Southern Mediterranean Countries

SOLATERM Project Report

Harald Drück - Universität Stuttgart Institut für Thermodynamik und Wärmelehre (ITW), Germany  
Amr Al Taher - National Energy Research Center (NERC), Jordan  
Tomas Nüñez - Fraunhofer-Institut für Solare Energiesysteme (ISE), Germany  
Joachim Koschikowski - Fraunhofer-Institut für Solare Energiesysteme (ISE), Germany  
Matthias Rommel - Fraunhofer-Institut für Solare Energiesysteme (ISE), Germany  
With contributions from all Southern Mediterranean partner countries.

**Potential Analysis for a New Generation of Solar Thermal Systems**

**Energy Audit for CEDARE Building**

# North Africa M&E (MEWINA)

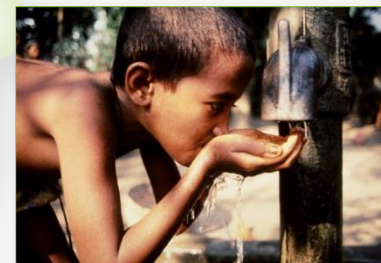
## ○ Impact :

Increased efficiency and effectiveness of water sector investments through improved knowledge of needs and progress enabling improved sector planning and management.

## ○ Outcomes

Better knowledge of the state of water sector M&E systems;  
Annual reporting mechanism established at local, national and sub regional on standardized indicators tracking WRM and the MDGs;

Adequate resources mobilized for M&E infrastructure development, capacity building and awareness program to develop a functional mechanism on the water sector.



Under average CC scenario	2010	2011	2012
<b>Water demand [Km<sup>3</sup>/y]</b>	<b>261</b>	<b>319</b>	<b>393</b>
Irrigation	213	237	265
Municipal	28	50	88
Industry	20	32	40
<b>Water supply [Km<sup>3</sup>/y]</b>	<b>219</b>	<b>200</b>	<b>194</b>
Surface water	171	153	153
Groundwater	48	47	41
<b>Unmet demand [Km<sup>3</sup>/y]</b>	<b>42</b>	<b>119</b>	<b>199</b>
Irrigation	36	91	136
Municipal	4	16	43
Industry	3	12	20



## Mobilizing Arab Wide Action for Reliable Environment Data

**MAWARED**  
تعبئة الجهود العربية  
من أجل بيانات بيئية موثوقة

Mobilizing Arab Wide Action for Reliable Environment Data

يمثل نظام الربط البيئي العربي آلية لتقييم الوصف البيئي من خلال المشاركة الشعبية الفعالة لمواطني الدول العربية بتقديمهم المعلومات اللازمة ورصدهم الذاتي وما يعايشونه من تطورات وملاحظات لحالة البيئة التي تعيشها مجتمعاتهم.

وهذا الموقع سيعمل من خلال شبكات التواصل الاجتماعي والهواتف المحمولة والإنترنت كأدوات لوصف الحالات الراهنة وجمع المعلومات والبيانات الخاصة بالأولويات البيئية العربية كجودة ونوعية الهواء ونقاء أو تلوث الموارد المائية السطحية أو الجوفية أو الساحلية، وسلامة التربة والأراضي من التدهور.

لتحميل نسختك على جهاز اللوالب آبل (آيفون - آيباد)  
Download iOS mobile version (iPhone - iPad)

Available on the iPhone  
App Store

لتسجيل ملاحظتك البيئية في أي مكان من خلال خريطة موارد

تربة • هواء • ساحل • مياه

ebook x gis.cedare.int x Facebook x gis.cedare.int x EGYNews.net x  
dare.int/mawared/indexall2.html

partnership  
save time & money  
civic society engagement

leadership  
close data gaps

harmonize methodologies  
build capacity  
enhance interoperability

Mobilizing Arab Wide Action for Reliable Environment Data

ebook x gis.cedare.int x Facebook x gis.cedare.int x EGYNews.net x  
dare.int/mawared/indexall2.html

MAWARED can:

- Provide reliable and internationally-comparable environmental data.
- Advance state-of-the-art information technology.
- Simulate a solution-oriented and people-centered inclusive approach.
- Build bridges between the Arab region and the international community.
- Empower a future generation of enlightened environmental leaders.

Mobilizing Arab Wide Action for Reliable Environment Data

← → ↻ 🏠  🔍 ☆ ☰

Available on the iPhone  
**App Store**





Number of Environmental Remarks are : 23



حدد موقع المشكلة ← أختَر المدينة ← أختَر الدولة

أختَر الدولة: Egypt (Djizarti, Commons, Be him, El Ma mir, Abu Qir, El Ma mir, El Ma mir)

أختَر المدينة: (List of Cities)

حدد موقع المشكلة: (Map view)

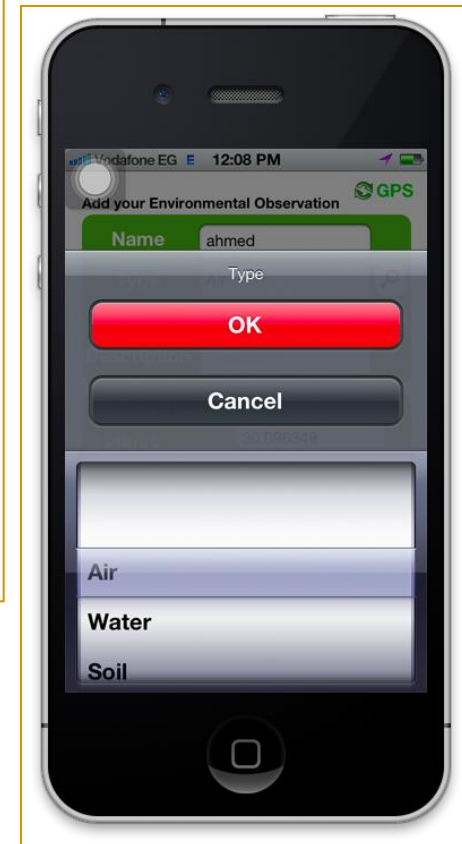
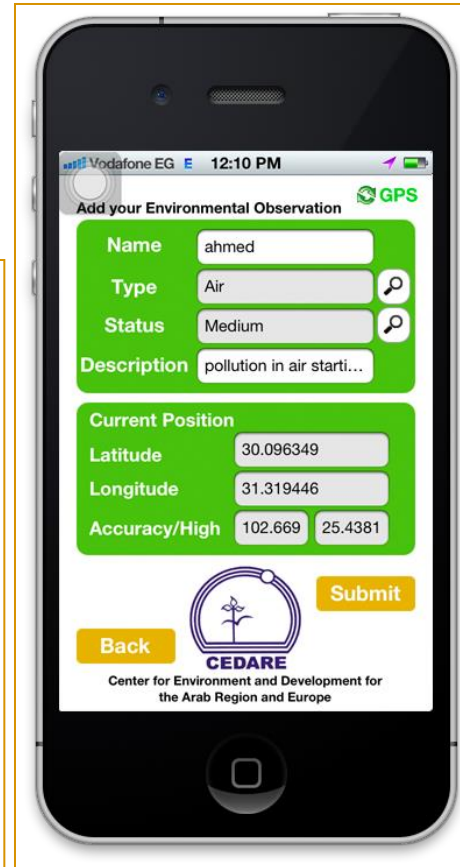
Map interface showing a satellite view of a desert area. A pop-up window displays environmental remarks with a list of cities and a map view. The map includes a scale bar and a 'Terms of Use' link.



يمثل نظام الربط البيئي العربي آلية لتقييم الوصف البيئي من خلال المشاركة الشعبية الفعالة ل مواطني الدول العربية بتقديمهم المعلومات اللازمة ورصدهم الذاتي ومبايعاشونه من تطورات وملاحظات لحالة البيئة التي تعيشها مجتمعاتهم.



# MAWARED



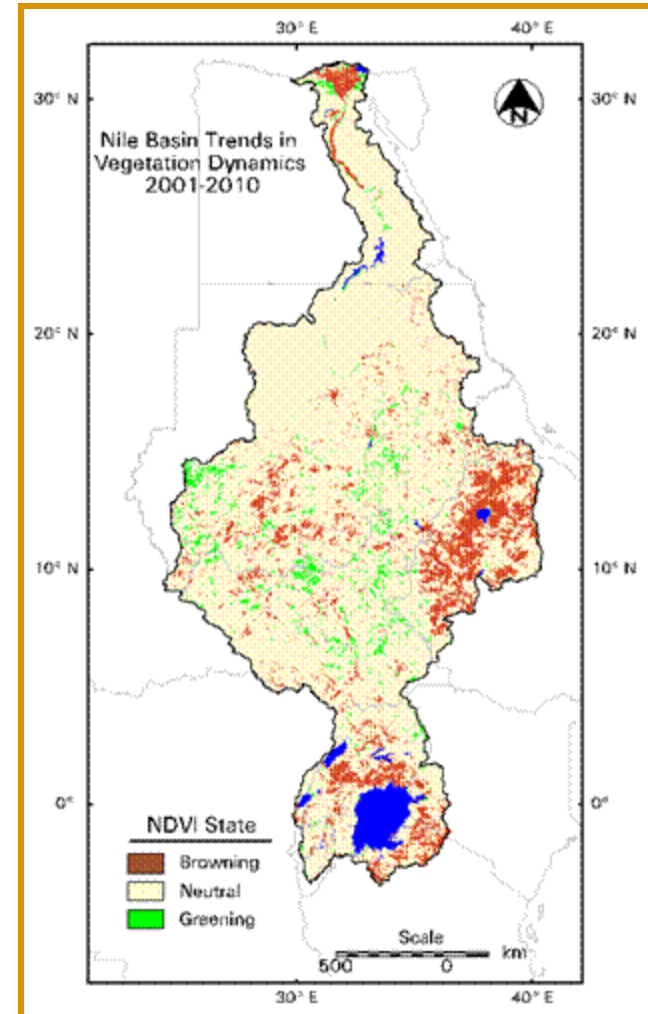
# ASSESSMENT OF CLIMATE CHANGE INDUCED WATER STRESS IN THE NILE BASIN

- Joint project with UNEP, DHI
- Enhanced assessment phase
- Scenario building phase
- Modeling phase

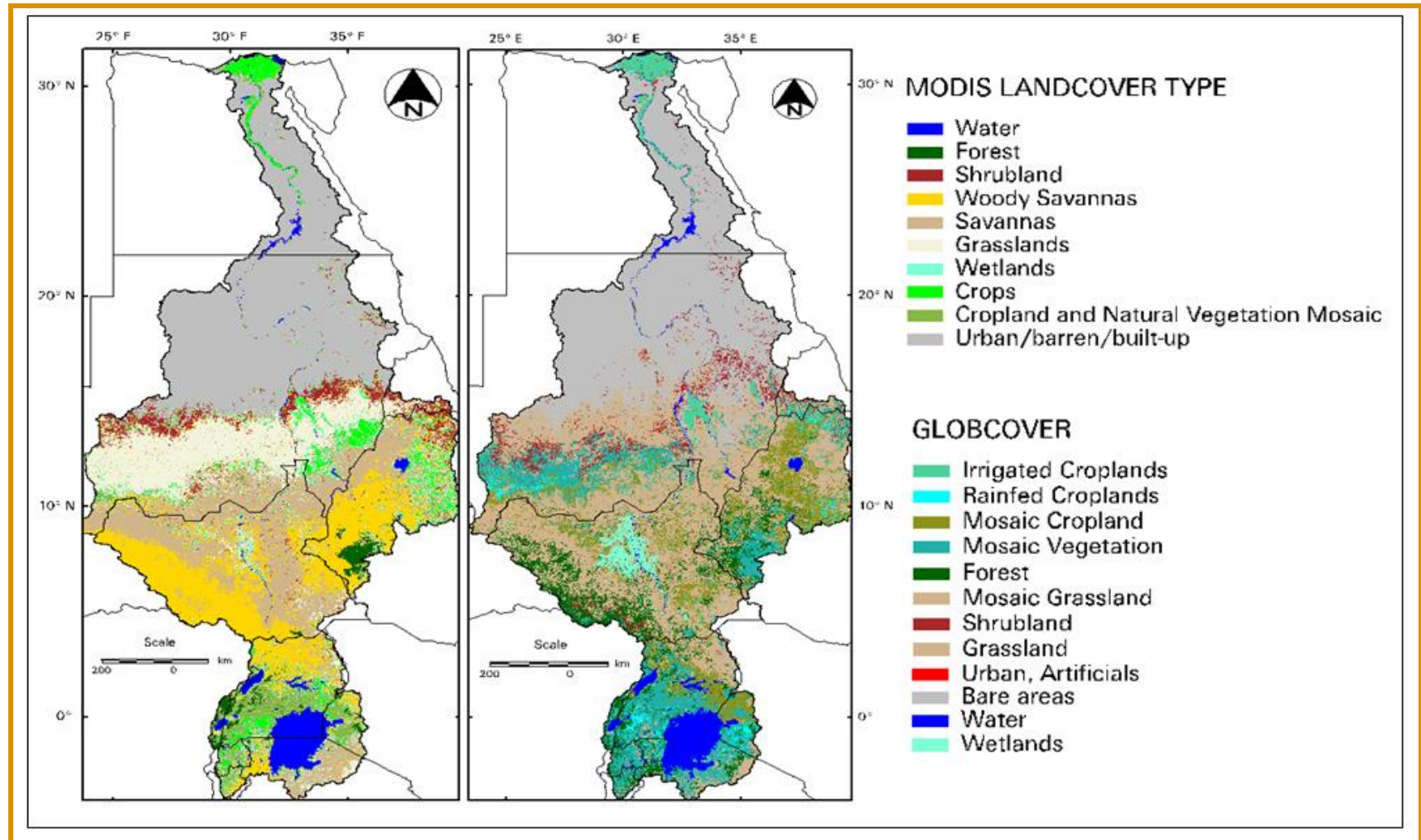


# LAND USE CHANGE

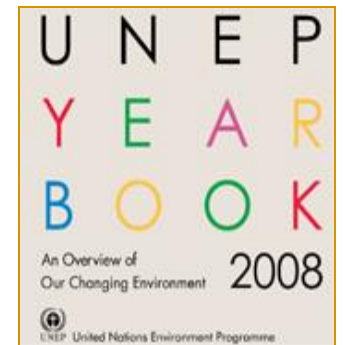
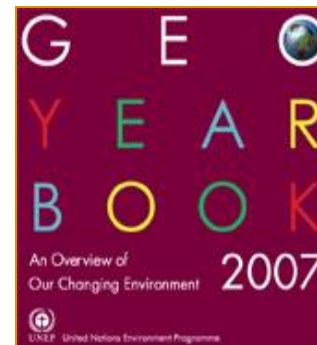
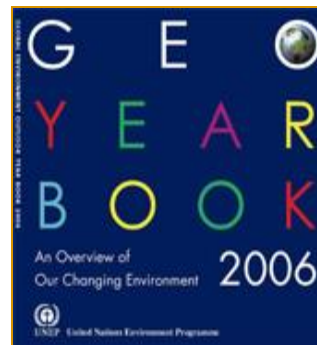
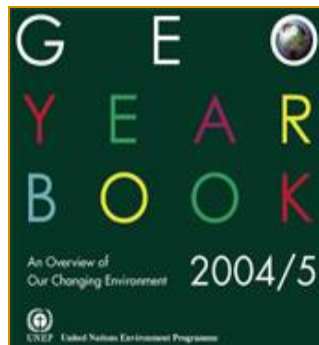
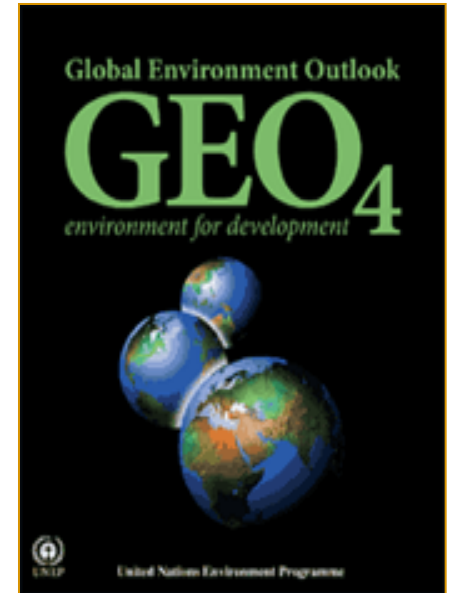
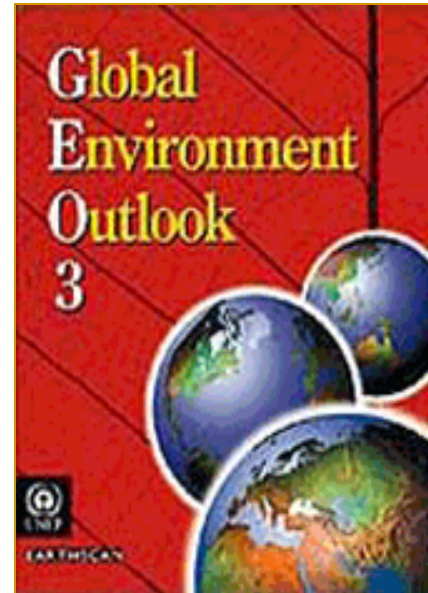
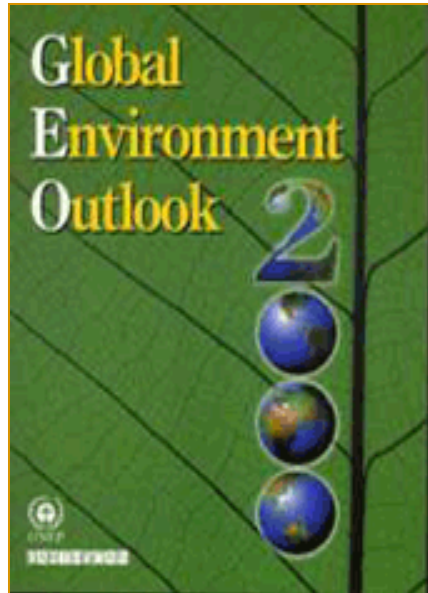
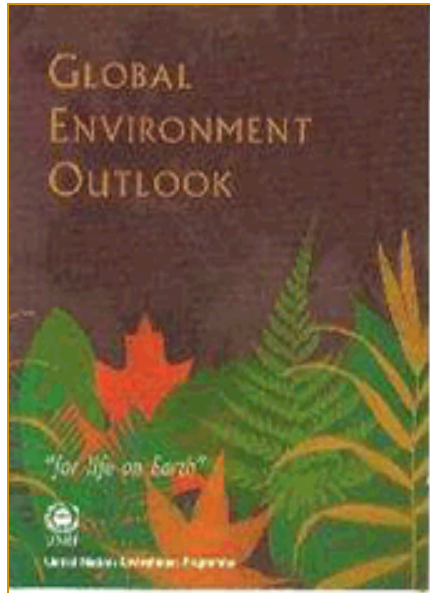
- Normalized Difference Vegetation Index (NDVI) is used to indicate spatial and temporal variation of green cover
- Terrestrial Evapo-Transpiration (ET) dynamics in the Nile Basin are governed by climatic factors and change in land cover



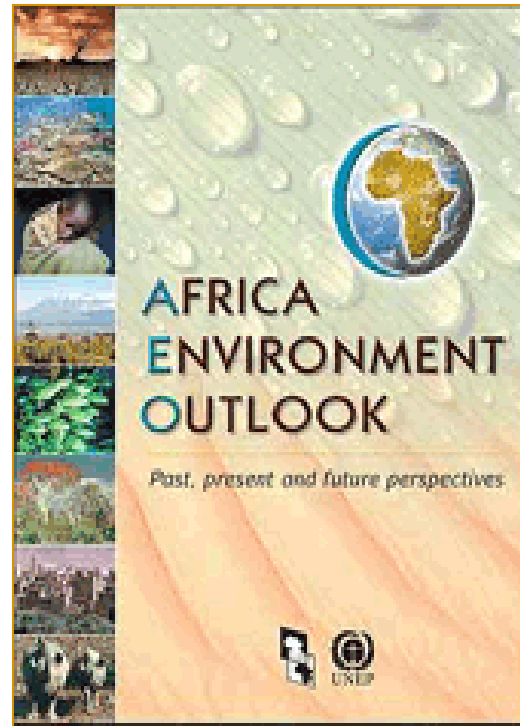
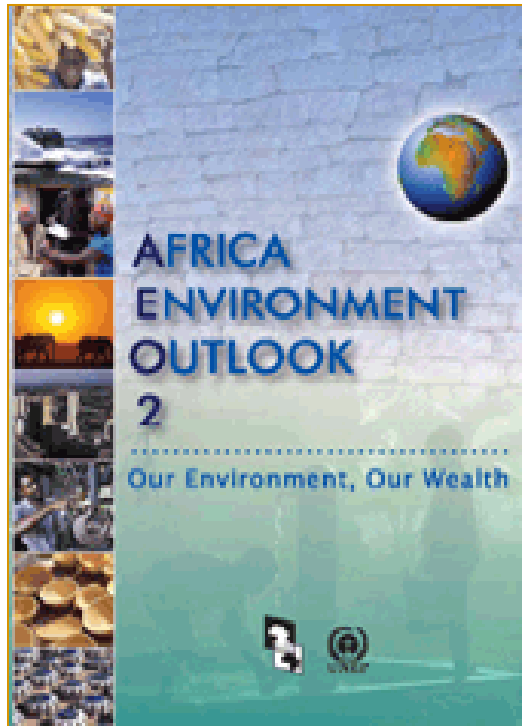
# RAINFED AND IRRIGATED AGRICULTURE



# PUBLICATIONS



# PUBLICATIONS (CONTINUED)



## COLLABORATING CENTRES



AMCEN/UNEP IN COLLABORATION WITH:



Agence Internationale pour le  
Développement de l'Information  
Environnementale (ADIE)  
<http://www.adie-ige.net>



National Environmental Management  
Authority (NEMUS)  
<http://www.nemus.org>



Centre for Environment and Development for  
the Arab Region & Europe (CEDARE)  
<http://www.cedare.org>



Network for Environment and Sustainable  
Development in Africa (NEMUS)  
<http://www.nemus.kibira.org>



Commission de l'Océan Indien (IOCC)  
Indian Ocean Commission (IOCC)  
<http://www.iocc-info.org>



Southern African Research and  
Documentation Centre (SARDC)  
Masolele Environmental Resources  
Centre for Southern Africa (MECOSA)  
<http://www.saradc.net>

# ENVIRONMENT OUTLOOK FOR THE ARAB REGION (EOAR)



## Environment Outlook for the Arab Region

The Environment Outlook for the Arab Region (EOAR) report is the first official, comprehensive, and integrated assessment of the state of environment in the Arab region.

The report is a credible scientific assessment that provides a base for policy formulation in the region. It explores the future of human-environment interaction; hence, the main theme of the report: "Environment for Development and Human Well-being".

This report was prepared in response to a decision by the Council of Arab Ministers Responsible for the Environment, in its 17th session, held at the headquarters of the General Secretariat of the League of Arab States, in Cairo, Egypt, in December 2005. The Council invited the United Nations Environment Programme to prepare an environment outlook report for the Arab region, in cooperation with specialized Arab organizations and GEO collaborating centres in the Arab region.

The EOAR report was produced through a participatory process in which experts and scientists from national, regional, international, and civil society institutions; and the private sector; as well as independent experts, and academics collaborated in its development and review. The EOAR process has followed the model of the Global Environmental Outlook (GEO) reports, which began in 1995 with a global environmental assessment process that is participatory, incorporates regional views and perceptions, and builds consensus on priority issues and actions through dialogue among policy-makers and scientists at regional and global levels; resulting in outputs that provide guidance for decision-making processes such as the formulation of environmental policies, action planning, and resource allocation.

In five sections consisting of twelve chapters, the EOAR report reviews the different facets of integrated environmental assessment, by analyzing the causes and drivers of environmental change, environmental pressures and changes and their effect on human beings and ecosystems, and the policies and responses to environmental issues, as well as exploring the future of environment and development according to four plausible scenarios. Finally, the report also presents the policy options and alternatives that can provide the basis for decision-making in the Arab region.

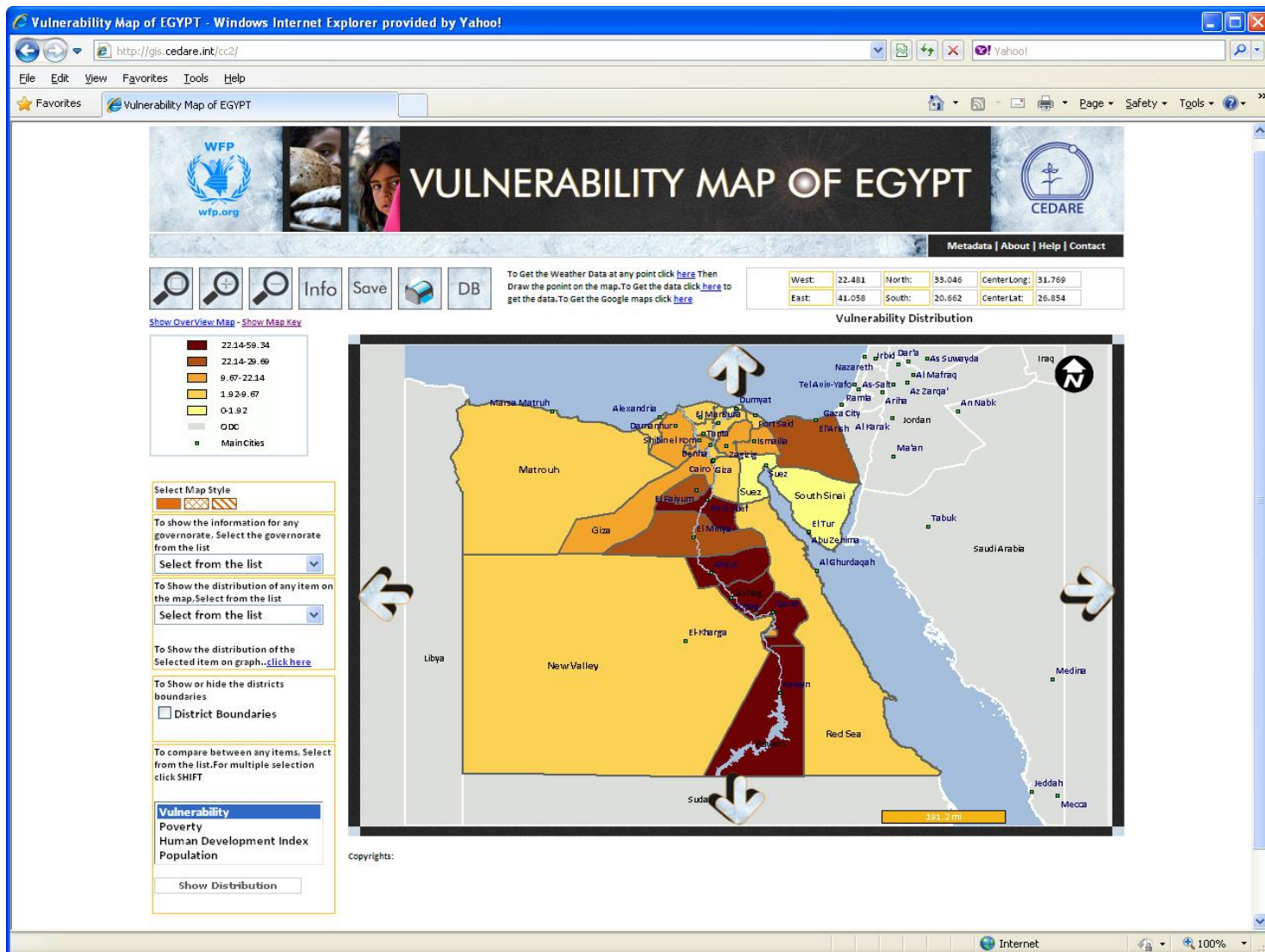


## Environment Outlook for the Arab Region

Environment for Development and Human Well-being



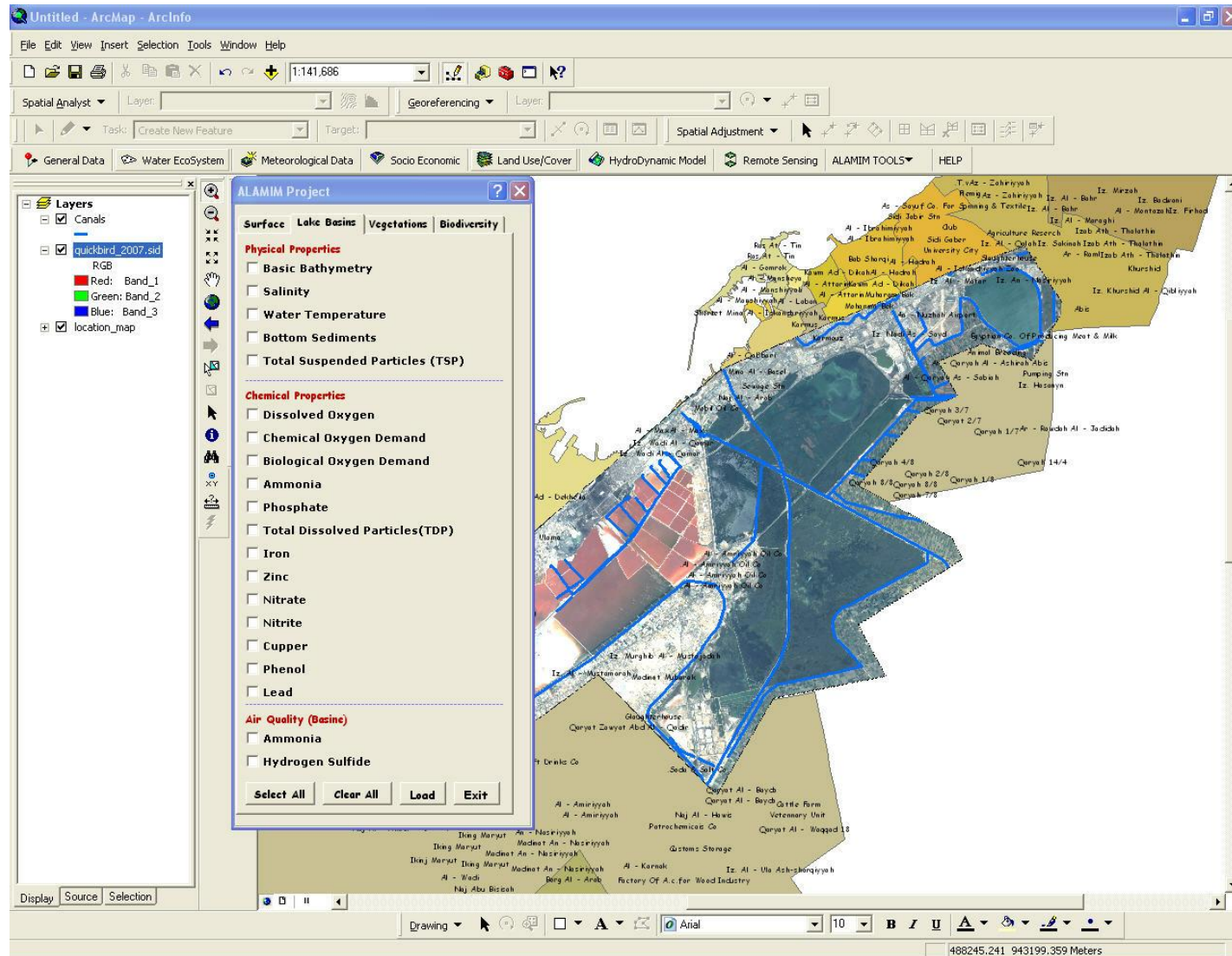
# VULNERABILITY MAP OF EGYPT



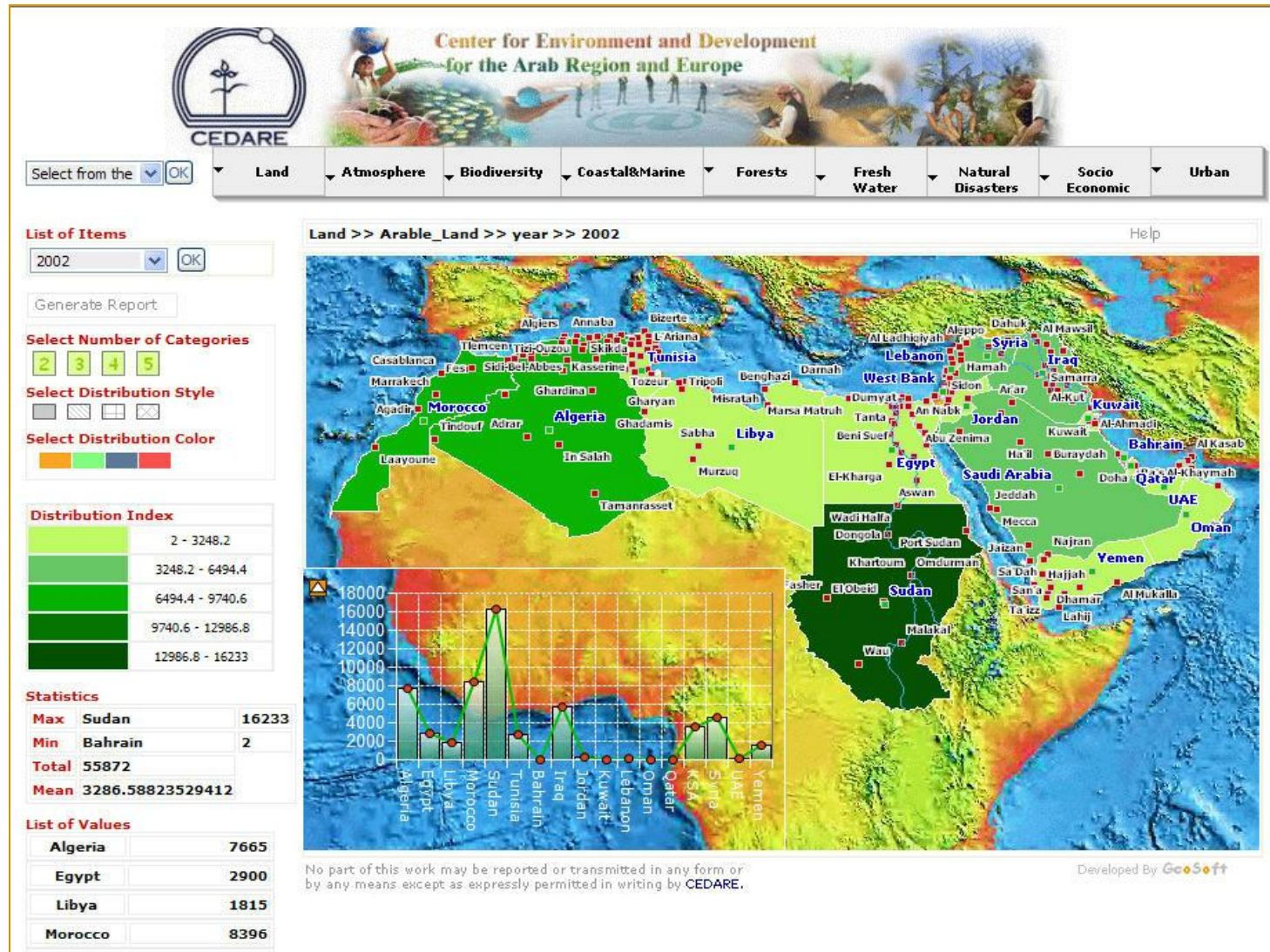
# VULNERABILITY MAP OF EGYPT (CONTINUED)



# Lake Maryout Information system



# Arab Region Information System



# KSA Information System



للدخول على تطبيق الصور الفضائية للمملكة .. اضغط هنا

طباعة التقرير ..... اضغط هنا

للبحث في قواعد البيانات المختلفة، اختر من القائمة

قواعد البيانات

1X  
2X  
4X  
8X

عرض خريطة أي من المناطق الإدارية

قائمة المناطق الإدارية

المدن الرئيسية في المملكة

قائمة المدن

438 kilometer

☒ ksa

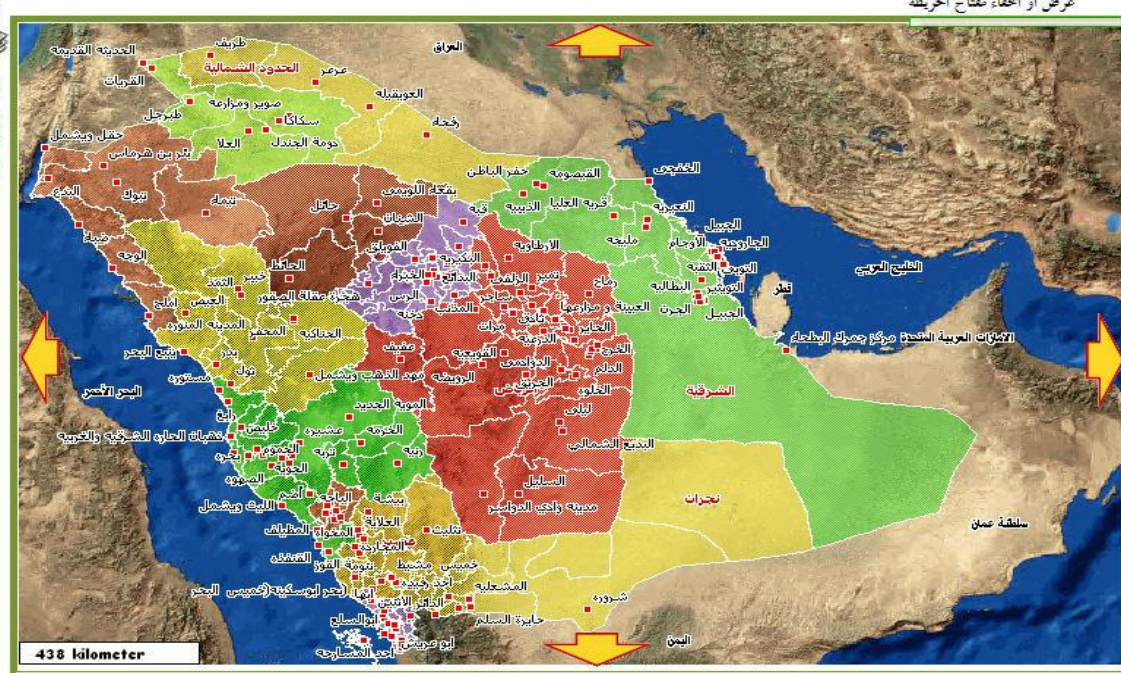
☐ drainage

☐ agriculture

☐ groundwater

☐ soil

☐ landuse





Centre for Environment and Development for the Arab Region and Europe

**THANK YOU!**

**謝謝**