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Second Meeting of the Task Team on
Implications of Climatic Changes on the
Coastal Area of Sfax, Tunisia

Sfax, 24-26 June 1995

**REPORT OF THE SECOND MEETING OF THE TASK TEAM
ON IMPLICATIONS OF CLIMATIC CHANGES
ON THE COASTAL ZONE OF SFAX**

BACKGROUND

As part of the efforts of the United Nations Environment Programme (UNEP) to analyze the potential implications of predicted climatic change and to assist the governments in designing policies and measures which may avoid or mitigate the expected negative effects of this change, or to adapt to them, Task Teams on the implications of climatic change were established in 1987 for six regions covered by the UNEP sponsored Regional Seas Programme (Mediterranean, Wider Caribbean, South Pacific, East Asian Seas, South Asian Seas, and South East Pacific regions), with the initial objective of preparing regional studies on expected climatic change on coastal and marine ecosystems, as well as on the socio-economic structures and activities within these regions. Additional Task Teams were later established for the West and Central African, Eastern African, Persian/Arabian Gulf, Red Sea and Gulf of Aden and Black Sea regions.

During the work on the Mediterranean regional study in the period from 1987 to 1989, it was felt that while the general effects might be similar throughout the Mediterranean region, the response to these effects would have to be highly site-specific. Therefore in the framework of the Mediterranean Task Team six specific case studies were prepared (deltas of the rivers Ebro, Rhone, Po and Nile; Thermaikos Gulf and Ichkeul/Bizerte lakes) in 1989. The final results of the work on the Mediterranean regional studies and on the six case studies were published in the book "Climatic Change and the Mediterranean" (L. Jeftic, J.D. Milliman, G. Sestini, Eds), Edward Arnold Publ., London, 1992.

In preparing these case studies it had become apparent that prediction of impacts was constrained by the absence of scenarios of future climates on a regional, sub-regional and local scale. Accordingly the Climatic Research Unit of the University of East Anglia had been commissioned by UNEP to attempt to produce a Mediterranean Basin scenario and to develop scenarios of future local climate for the selected case study areas.

Using the experience of the "first generation" case studies in 1990 the preparation of the "second generation" of the site-specific case studies was initiated for the Island of Rhodes, Kastela Bay, the Syrian coast, the Maltese Islands, and the Cres-Losinj Islands.

The objectives of these studies were:

- to identify and assess the possible implications of expected climatic change on the terrestrial, aquatic and marine ecosystems, population, land-and sea-use practices, and other human activities;
- to determine areas or systems which appear to be most vulnerable to the expected climatic change; and
- to suggest policies and measures which may mitigate or avoid the negative effects of the expected impacts, or adapt to them, through planning and management of coastal areas and resources, using the presently available data and the best possible extrapolations from these data.

The final results of these five case studies were presented at the meeting on Implications of Climatic Change on the Mediterranean Coastal Areas (Island of Rhodes, Kastela Bay, Syrian Coast, Malta and Cres/Losinj) held in Malta in September 1992. The report of this meeting, containing the main findings, conclusions and recommendations of the five studies was published as document UNEP(OCA)/MED WG.55/7.

A third generation case studies were launched in 1993, in the framework of the site-specific Coastal Areas Management Programme (CAMP). So far three such studies are being developed (Fuka-Matruh coastal region, the Albanian coast, and Sfax coast). For each of the second generation of case studies Task Teams were established and the same procedure will be followed for the third generation of case studies.

This meeting of the Task Team on Implications of Climatic Changes on the Coastal Zone of Sfax (Sfax, 24-26 June 1995), aimed at presenting the draft report of the study, analysing and evaluating the data collected, and consequently proposing modification of the final report contents.

REPORT OF THE MEETING

Opening of the Meeting - Agenda item 1

The meeting was opened on 24 June 1995 by Mr. K. Zouari, Task Team Coordinator, who welcomed the participants and expressed appreciation for the support of the United Nations Environment Programme (UNEP) and of the Coordinating Unit for the Mediterranean Action Plan (MAP) in preparing for meeting on the implications of Climatic Changes, and he wished every success to the meeting.

Mr. M. El-Sayed, UNEP/MAP consultant, welcomed the participants on behalf of Mr. L. Jeftic, Deputy Coordinator of the Mediterranean Action Plan (MAP). He expressed his satisfaction for the efforts provided by the Task Team members and the work quality perceived in the draft report.

The meeting was held on the premises of the Ecole Nationale d'Ingénieurs de Sfax (ENIS) and the Association Tunisienne de Protection de la Nature et de l'Environnement de Sfax. Participants of the meeting are listed in Annex I to this report.

Election of Officers - Agenda item 2

Mr. K. Zouari, Task Team Coordinator was elected as a chairman of the meeting, Mr. T. Gargouri as Rapporteur and Mr. M. El-Sayed as Technical Secretary of the meeting.

Adoption of the Agenda - Agenda item 3

The amended provisional agenda as proposed by the Secretariat was adopted and appears as Annex II to this report.

Presentation of the Draft Report - Agenda item 4

Prior to the presentation of the draft report, Mr. Zouari handed the report of the Preliminary Meeting of the Task Team (UNEP(OCA)/MED WG.95/1) to all participants. This was followed by a presentation by Mr. Zouari of the outlines and the main points appeared in the contributions of the Task Team on the various aspects of their study. The following is a summary of the presentations of the Task Team members:

The section of the climatic and atmospheric conditions prepared by Mr. Bousnina and presented by Mr. Zouari, who mentioned that a rise of temperature between 0.8 and 0.9 associated with 10% increase in rain are expected for the period from, 2030 to 2050 in Sfax region. These results were extrapolated from the Scenario of East Anglia for the Mediterranean.

Mr. Zouari introduced the geological and hydrological aspects of the study.

The terrestrial ecosystem was presented by Mr. Chayeb, who emphasised that the ecosystem of Sfax does not reflect in large the ecosystem of South Tunisia, and that the expected rise in temperature and rain will not affect the natural vegetation, but vegetation will benefit from such climatic change. He pointed out that the choice of Sfax to conduct the present study should be considered as a first phase which has to be followed by the study of a larger and more representative zone.

Mr. Zouari succeeded Mr. Bradai in presenting the Marine Ecosystem. The faunal and floral modifications in the Tunisian waters were observed since the 19th century, following some human activities, especially the opening of the Suez Canal. In the area between the Gulf of Gabes and Sfax there have been some potential impacts regarding the above observation, this is proved by the presence of many Red Sea species which exist in the Tunisian waters. The climatic changes might interrupt the migration routes of some species. Marine pollution has a great effect on the aquatic resources, therefore all pollutants including the phosphogenic types should be prevented from the discharge in the sea, and the exploitation of the marine resources should be regulated.

The socio-economic aspects of the study were presented by Mr. Karray as follows:

Energy

An expected increase up to 7% is perceived from now until the year 2030.

Industry

Climatic changes will have no particular impact on this sector.

Tourism

Sfax as yet is not a touristic city, but because of its geographic and economic setting, it is expected that progressive touristic activities will take place.

Transport and services

The study focuses on the commercial port of Sfax.

Sanitation and health

Sanitation problems will be solved through the extension of the resources of the National Office of Sanitation, particularly in the Governorate of Sfax. The hospital of Sfax provides daily services for the patients of Sfax and south Tunisia.

Population and settlements

Sfax receives daily half as much as Tunis of the provincial families. Housing is available in terms of quality but not quantity. However, poor families live in illegally constructed houses.

Analysis and Evaluation of the Data and Proposal for the Modification of the Final Report's Content - Agenda item 5

The task team examined the different contributions which will form the final report. This was followed by an analysis, evaluation of the results and identification of gaps in the study.

Further to the different presentations (agenda item 4), the Task Team provided some ideas to slightly modify the contents of the final report. Such modification was reflected in Annex (III).

The meeting acknowledged the dates of end September or early October 1995 to accomplish the final report.

Mr. El-Sayed emphasised the equal importance of considering the effect of sea level rise and its impact on the different systems and aspects in the study.

Adoption of the Report - Agenda item 6

The meeting's report, including its substantive annexes was considered and adopted by the meeting's participants.

Closure of the Meeting - Agenda item 7

The meeting was closed on 26 June 1995 at 12.00 in Sfax. Mr. El-Sayed congratulated the Task Team Coordinator and members for their contribution and he thanked the participants for their constructive remarks, inputs and enthusiasm.

ANNEX I**LIST OF PARTICIPANTS****A. MEMBERS OF THE TASK TEAM**

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ANNEX II

AGENDA

1. Opening of the Meeting
2. Election of Officers
3. Adoption of the Agenda
4. Presentation of the Draft Report
5. Analysis and evaluation of data and proposals for the modification of the final report's content
6. Adoption of the report
7. Closure of the Meeting

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- 1.2. Methodology and assumptions used in the study**
- 1.3. Temperature and precipitation scenarios for Sfax region**

2. IDENTIFICATION OF PRESENT SITUATION AND POSSIBLE CONSEQUENCES OF CLIMATIC CHANGES

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- 2.1.1. Climate conditions
- 2.1.2. Atmosphere interaction

2.2. Lithosphere

- 2.2.1. Geology
- 2.2.2. Soils

2.3. Hydrosphere

2.4. Natural ecosystems

- 2.4.1. Terrestrial ecosystems
- 2.4.2. Freshwater ecosystems
- 2.4.3. Marine ecosystems

2.5. Managed ecosystems

- 2.5.1. Agriculture
- 2.5.2. Fisheries
- 2.5.3. Aquaculture
- 2.5.4. Silviculture

2.6. Energy and industry

- 2.6.1. Energy
- 2.7.2. Industry

2.7. Tourism

2.8. Transports and services

2.9. Sanitation and health aspects

- 2.9.1. Sanitation
- 2.9.2. Health aspects

2.10. Populations and settlements

2.10.1. Populations

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3. POTENTIAL IMPACTS OF EXPECTED CHANGES ON NATURAL SYSTEMS AND SOCIO-ECONOMIC ACTIVITIES

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3.4. Natural ecosystems

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3.8. Transports and services

3.9. Sanitation and health aspects

3.10. Populations and settlements

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4.1.10. Populations and settlements

4.2. Suggestions for follow-up to the present study

REFERENCES

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