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Third Task Team meeting on the
Climatic Changes on the Island of Rhodes

Athens, 9 October 1991

**REPORT
OF THE TASK TEAM MEETING ON THE CLIMATIC CHANGES
ON THE ISLAND OF RHODES**

MINUTES OF THE MEETING

1. General

As it was stated in the report of the Second meeting of the Task Team on the Implications of Climatic Changes on the Island of Rhodes (UNEP(OCA)/MED WG.29/1), the participants agreed to submit their texts on the various chapters to the co-ordinators by the end of June. After that, the co-ordinators would contact them by the end of September for eventual improvement of the texts.

Most of the texts were submitted by middle of July. The papers were reviewed and after a contact between the co-ordinators and Dr. Jeftic (Co-ordinating Unit for the Mediterranean Action Plan), it was decided to organize a meeting where all points of general and particular interest which were noted in the texts would be discussed between the Task Team members. The date of the meeting was set for the 9th of October 1991.

At the meeting a text containing the general and specific editorial comments was given by the co-ordinators to the participants.

2. At the meeting were present Dr. Perissoratis and Mr. Georgas (co-ordinators), Prof. Dikaiakos, Ms. Alexiadou (members of the Task Team) and Mr. Tsotsos, representing the Ministry of Environment Planning and Public Works and focal point of the Rhodes project (CAMP). The other Task Team members were not present. The meeting took place at the Conference room of the Mediterranean Co-ordinating Unit of UNEP in Athens. A list of participants appears in Annex I.

3. Mr. Georgas and Dr. Perissoratis opened the meeting by expressing their satisfaction about the proceedings of the study as well as the submission of the first drafts. Almost all task team members followed the tentative list of contents as discussed and revised at the first task team meeting (UNEP(OCA)/MED WG.29/1, Annex pp 1-3). They also covered successfully the study fields.

The list of contents of the first drafts which were submitted (Chapters 2-4) is presented in Annex II.

Mr. Georgas informed the meeting about the submission time and the volume of the first drafts. Half of the first draft reports were submitted on time, two were few days late and one (hydrogeology) was handed just a week before this meeting. This was because there were several unsuccessful attempts to financially support a visit of a task team member (Ms Alexiadou) to the island of Rhodes. Finally this field trip took place on member's expenses, and a significant number of data was obtained and used for the writing of the relevant chapter on Hydrogeology. Only half of the members however submitted also text in floppies (one was not in IBM compatible format).

The total volume of the first drafts (Chapters 2 - 4), apart from tables, figures and references, is exceeding 90 pages (double spaced). The co-ordinators stressed the need to keep the total volume of the final text to less than 80 pages and to follow UNEP standards.

4. Mr. Tsotsos suggested that it will be very useful, apart from the main text, to prepare an executive summary which will be distributed to the persons interested in the study, without having to go through the whole text. The participants accepted the suggestion of Mr. Tsotsos.

5. The co-ordinators discussed with the participants their general editorial remarks on the first drafts. The participants were reminded that, as it was stated at the first Task Team meeting, the objectives of this study are to examine possible effects of the climatic changes (sea level rise and temperature increase) on the ecosystems (coastal, terrestrial, aquatic and marine), the water cycle, the socio-economic structures and activities and the vulnerable areas, and also to propose suitable management options and policy recommendations.

All texts received do cover in adequate degree the required topics but most of them did not cover the implications section, which is of particular importance and will be the focus point of this study. For this purpose the authors should insert the missing or additional data and add suitable discussions on the implications. Also particular attention should be paid on the following points:

- the final document will be published by UNEP and will also be given to number of specialists in the field for review. Therefore, there is a need of a homogeneous way of writing, as much as possible, both in respect to style and way of presentation. Also the best available references and sources should be used in order to obtain the best possible presentation for each chapter;
- the section on the implications in each chapter will have a reference to the last paper on the local scenario of climatic changes, as prepared by the Climatic Research Unit of the East Anglia University, United Kingdom;
- tables and figures should be of high quality, eligible and clear, monochrome, in A4 format, readable in 50% photocopy reduction;
- references should be inserted at the proper place in the text, cited in parenthesis as author's name(s) and year, as well as in the references list, at the end of the chapter. The list will properly state author's name(s), year, title, editor, journal, volume and page, in this order.

6. Regarding each chapter, the following specific editorial remarks were cited for consideration by the authors:

Chapter 2.1. - Geography & Geology by Prof. Leontaris:

The number of specialized geological terms which are used in the text should be limited, if possible. The section on the stratigraphy (2.1.1 Geographical and Geological Settings), has to be shortened to 1.5 - 2 pages, giving a brief view of the origin and the structure of the island. Alluvial plains and lowlands should be depicted on a topographic map of the island which has to be included in figures. Finally all vulnerable coastal areas have to be identified, briefly examined and shown on a map.

Chapter 2.2. - Climate by Prof. Dikaiakos:

The chapter on the climatic implications and suggested actions should be added. The last paragraph of the chapter II (Air temperature) is quite specialized and it is recommended that should be shortened to conclusions only. Also the tables should be more eligible. Prof. Dikaiakos on his part expressed his concern on the great diversity of the available data and the scenaria provided, both local and general, from where implications will be evaluated. The co-ordinators stressed that each author was asked to cite the implications, especially at the climate chapter, in the framework of the recent model provided by the East Anglia group. Although the validity of the scenaria is not a matter for discussion, each author can express his own arguments.

Chapter 2.3. - Hydrology & Water Resources by Ms. Alexiadou:

The main text should be shortened by about half in length, and a change in the title of some sub-chapters is suggested. Thus sub-chapter 2 should be "Hydrological state", and sub-chapter of 3.1.1. should be "Hydrogeological formations". The sub-chapters: 3.1.1.1 - 3.1.1.8 could be converted to 3.1.1 Hydrogeological behaviour of geological formations (a, b... h). Finally all figures should be redrawn for the final form and references should be properly cited.

Chapter 2.4. - Marine Physical Processes by Prof. Laskaratos:

There is a need to add more on the implications section, using the recent local scenaria provided by the East Anglia group. Also all references should be cited in the text and on the list of references at the end.

Chapter 3. - Ecosystems by Prof. Margaris:

Considerable part of the text deals with the problem of fires on the Island of Rhodes. This subject, although of high interest, is less compatible with the general character of the project. Therefore it is suggested that the chapter on fires be shortened to maximum two pages, double spaced. Also chapters should be added on wetlands (biotopes -if any- should be shown on map) and on marine and coastal ecosystems. There is a need of a short description of the soils - pedological types in the first chapter. The behaviour of the ecosystem on the expected climatic changes (a qualitative approach on the impacts) should be discussed using the recent local scenario. In this case the title "Natural ecosystems" could be replaced by "Natural terrestrial ecosystems", as long as marine and coastal ecosystems will be added. A map locating the natural ecosystems would be essential. Finally the bibliographic references should be cited as mentioned earlier in this report.

Chapter 4. - Socio-economic Aspects by Ms. Tsakiri:

The text is accompanied by many interesting and impressive data set, which are unprocessed and are given in a very limited degree within the text. It is suggested that the most interesting tables should be presented on histograms or pye-diagrams. Also agricultural land-use table data have to be presented on a single map of the island. Also all areas vulnerable to sea level rise associated with coastal development, infrastructure, industry, port facilities, (within 2m contour) have to be identified and to be placed on map. Finally table No 32 does not correspond to the one mentioned in the text (4.4 Industry).

7. The co-ordinators asked that the texts with all corrections and suggestions will be returned to the authors by the end of October. All participants agreed that all final draft texts, properly corrected and completed with figures, should be returned to the co-ordinators by the end of November 1991. The final submission of the text should be on floppy disk 3 1/2 or 5 1/4 inches, single density (360 or 720 kb), written or converted on IBM compatible software, stored on text or plain form.

8. The need of secretarial support to the editing of the final text was mentioned to the representative of the Ministry of Environment Mr. Tsotsos, who promised to discuss this matter at the Ministry and reply on time.

The participants were informed that the presentation of the final report by the authors to the Task Team meeting will probably take place in February 1992. The final presentation to the local authorities and the Municipality of Rhodes will probably take place at the island of Rhodes during the summer of 1992.

9. The co-ordinators informed the Task Team members that they have received invitation by the Blue Plan to participate at the socio-environmental development meeting (Sophia-Antipolis, France), where the progress of the Rhodes project will be presented.

10. The co-ordinators undertook the responsibility to contact the other members of the Task Team which were not present at the meeting.

ANNEX I

LIST OF PARTICIPANTS

Ms Maria-Chara Alexiadou
Phylis 12
GR-10433 Athens

Tel: 1-8234874 or 1-6832501/2

Professor John Dikaiakos
Division of Climatology
Department of Geology
University of Athens
Panepistimioupolis
GR-15784 Athens

Tel: 1-8835802 or 7230963

Mr Dimitris Georgas
Versi 51
Papagou
GR-15669 Athens

Tel: 1-6523367
Fax: 1-6393302

Mr Constantine Perissoratis
Institute of Geology and Mineral Exploration
70 Mesoghion Street
GR-11527 Athens

Tel: 1-7995093 or 1-7772891 or 1-7707942
Fax: 1-7752211
Tlx: 216367

Mr Dimitri Tsotsos
Chemical Engineer - Environmentalist
Ministry of the Environment, Physical Planning and Public Works
147 Patission Street
GR-11251 Athens

Tel: 1-8650214, 8650053, 8650106
Fax: 1-6434470
Tlx: 216028 DYPP GR

ANNEX II

LIST OF CONTENTS AS SUPPLIED (CHAPTERS 2 - 4)

2. PHYSICAL ASPECTS

2.1. GEOGRAPHY AND GEOLOGY (Prof. Leontaris)

- 2.1.1. Geographical and geological settings
- 2.1.2. Geomorphology (including deposition - erosion)
- 2.1.3. Coastal processes and shoreline stability
- 2.1.4. Evolution of lowlands and subsidence
- 2.1.5. Discussion of the climatic implications and suggested action

2.2. CLIMATE (Prof. Dikaiakos)

- 1. General remarks
- 2. Temperature of the air
- 3. Relative humidity
- 4. Rainfall
- 5. Winds
- 6. Human bioclimate
- 7. Extreme events and other meteorological phenomena

2.3. HYDROLOGY AND WATER RESOURCES (Ms Alexiadou)

- 1. Introduction
- 2. Hydrological conditions
 - 2.1. Surface runoff
 - 2.2. Water balance
 - 3.1. Ground water
 - 3.1.1. Hydrogeological behaviour of geological formations
 - 3.1.2. Water intake infrastructure
 - 3.2. Springs
- 4. Water resources management
- 5. Ground water quality
- 6. Discussion of the climatic implications - Proposals

2.4. MARINE PHYSICAL PROCESSES (Prof. Laskaratos)

- Introduction
- 2.4.1. Currents
- 2.4.2. Temperature/salinity
- 2.4.3. Waves
- 2.4.4. Sea level
- 2.4.5. Discussion of the climatic implications

3. ECOSYSTEMS (Prof. Margaris)

1. NATURAL ECOSYSTEMS
 - 1.2. Forests
 - 1.3. Shrublands
 - 1.3.1. The maquis in Rhodes
 - 1.3.2. Phrygana of Rhodes
2. STATE OF THE NATURAL ENVIRONMENT AND THE MORE CRUCIAL PROBLEMS
 - 2.1. Wild fires
 - 2.2. Are plants adapted ?
 - 2.3. Are animals adapted ?
 - 2.4. Is man adapted ?
 - 2.4.1. Higher frequency fires: the old problem
 - 2.4.2. Low frequency fires: the new problem
3. MANAGEMENT OF BURNT AREAS IN RHODES
 - 3.1. Before fire...
 - 3.2. After fire...
 - 3.3. Reforestation means protection in all cases
4. THE NATURAL ENVIRONMENT OF RHODES AND ITS FLORA
5. CULTIVATED LAND: THE "AGRO" SYSTEMS
 - 5.1. Historical
 - 5.2. Mediterranean terraced arboriculture in Rhodes
 - 5.2.1 Intensive agriculture versus olive plantations
 - 5.2.2 Refrigerators against fig and almond trees
 - 5.3. Bottom land cultivations
6. ANIMAL HUSBANDRY
7. WATER RESOURCES IN RHODES
8. DISCUSSION OF THE CLIMATE CHANGES IMPLICATIONS

4. SOCIO ECONOMIC ASPECTS (Ms Tsakiri)

- 4.1. DEMOGRAPHICS
 - 4.1.1. Economically active population
- 4.2. TOURISM
- 4.3. INFRASTRUCTURE
 - 4.3.1. Power generation
- 4.4. INDUSTRY
- 4.5. PRIMARY SECTOR
 - 4.5.1. Fish farming
- 4.6. DISCUSSION OF THE CLIMATIC IMPLICATIONS