



***Environmental impact assessment:
the marina in Paphos***

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PREFACE AND ACKNOWLEDGEMENTS

Environmental impact assessments (EIA) have been extensively prepared and used over the last 15 years. Their wide application clearly indicates a need to ensure that environmental considerations are included in the decision-making process. However, particularly in developing countries, the procedures established for EIA in developed countries have met much criticism.

Realizing the shortcomings of these procedures and responding to frequent requests for a simple and practical, but still adequate approach to EIA, the Oceans and Coastal Areas Programme Activity Centre (OCA/PAC) of UNEP has attempted to formulate procedures, supplemented with guidelines, which could be used in preparing EIAs for typical development projects in the context of legal agreements supporting the UNEP Regional Seas Programme.

The procedures and guidelines advocated by UNEP ^{1/} were tested through a series of concrete case studies. One of the first case studies and the way it was prepared is described in this document.

The analysis of the case study and the description of the procedures used in the environmental impact assessment (Part I and II of the document) were prepared by the Priority Actions Programme Regional Activity Centre of the Mediterranean Action Plan, with assistance of consultants (Messrs. A. Baric and A. Jernelov). The guidelines for the preparation of the EIA document for the marina were originally prepared by Messrs. A. Jernelov and U. Marinov and modified for the specific situation in Paphos by Mr. Baric (Part III of this document). The EIA document (Part IV of the document) was prepared by Mr. C. Charalambides from the Department of Public Works, Ministry of Communications and Works, Mr. L. Loizides from Department of Fisheries, Ministry of Agriculture and Natural Resources, and Mr. A. Daveronas from the Department of Town Planning and Housing. In the preparation of the document they were assisted by Messrs Baric and Jernelov, consultants to the Priority Actions Programme Regional Activity Centre of the Mediterranean Action Plan.

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PART I: ANALYSIS OF THE CASE STUDY

In evaluating the process of preparation of EIA's in Cyprus, the general background has to be kept in mind. No EIA procedure had previously been practised on Cyprus. Evolving environmental groups were suspicious of the Government's attitude to environmental questions. Governmental bodies had no experience in collaboration over multidisciplinary environmental questions.

The first positive effect of the procedure of EIA preparation was that interagency governmental collaboration was established and functioned well.

Secondly, public participation was for the first time formally introduced in Cyprus in connection with the presentation and evaluation of the EIA documents. A wide range of NGOs and concerned individuals participated in and were in agreement with the decisions reached.

Thirdly, a decision was reached not to build the marina at the location first considered north-west of Paphos, where it might interface with turtle nesting and bird migration. Instead, a location near the airport was chosen where the marina will cause considerably less environmental disturbance.

Naturally, some problems arose as existing information was not always in the format foreseen in the guidelines and as collected data were tailored for other needs than those of an EIA. However, these problems were considered to be of minor importance and not affecting the quality of the assessment as such but only the elegance of the presentation.

As the Paphos marina was still in a very preliminary planning stage when the EIA document was produced and no technical-economical feasibility study had yet been carried out, there are a number of shortcomings in the EIA related to the technical project description.

The most obvious omissions are:

- source of construction material;
- areas to be dredged; quality and quantity of dredged material to be discharged;
- proposed stages of construction with timetable;
- description of building structure in relation to the natural landscape.

PART II: PROCEDURES USED IN THE ENVIRONMENTAL IMPACT ASSESSMENT

1. Background

The fourth ordinary meeting of the Contracting Parties to the Barcelona Convention (Genoa, September 1985), when considering the workplan of the Priority Actions Programme Regional Activity Centre (PAP/RAC) of the Mediterranean Action Plan, "stressed the interest to develop suitable methodologies for environmental impact assessment, with a view to their introduction in coastal zone development planning" 2/. The same meeting adopted ten targets to be achieved as a matter of priority during the second decade (1986-1995) of the Mediterranean Action Plan (MAP). Among these targets was 3/:

- applying environmental impact assessment as an important tool to ensure proper development activities.

In response to similar requests from other meetings convened in the framework of the UNEP Regional Seas Programme, UNEP has developed a simple and practical approach to the environmental impact assessment (EIA) 1/ which might be applicable in the context of the legal agreements supporting that Programme.

In consultation between PAP/RAC and the National Focal Point of Cyprus for the Mediterranean Action Plan, the preparation of an EIA for the Paphos Marina was among the first case studies selected to test the new approach to EIAs.

2. Request for building of a marina in Paphos

Compared to other countries in the region Cyprus has only few marinas available for international boat tourists and the existing ones are on the south coast.

The Government of Cyprus therefore identified the area around Paphos as one suitable for development of a marina in order to diversify tourism. Based on infrastructure considerations, an area north-west of Paphos was identified as the first choice.

3. Decision on the need for an EIA document

According to a newly adopted governmental policy, an EIA is a requirement for any such development project.

4. Guidelines for the preparation of the EIA document

Building on the goals and principles for EIAs, adopted by the Governing Council of UNEP and endorsed by the United Nations General Assembly 4/, and on the procedures developed for a practical approach to EIAs 1/, the guidelines for the preparation of the EIA document for the marina in Paphos were prepared by PAP/RAC with assistance of consultants (Part III of this document). The guidelines list the issues which were expected to be addressed in preparation of the EIA document for the marina in Paphos.

5. The environmental impact assessment document

The preparation of the EIA was entrusted to the Department of Public Works, and the Department of Town Planning under the General Co-ordination of the Environmental Service of the Ministry of Agriculture and Natural Resources of the Republic of Cyprus. The study was carried out to test the methodology, and the selected area is only a test area for applying the guidelines and approach.

Several consultations were held between the staff of the Department and of PAP/RAC's consultants during the preparation of the EIA.

The information used for the preparation of the EIA consisted of:

- meteorological data available from the nearby airport;
- hydrographic, microbiological and sea-current data obtained through earlier measurements, as well as measurements during the preparation of the EIA, at the site of the proposed marina and in its vicinity;
- microbiological data available from the Limassol area; and
- biological data on benthos and detailed bathymetric measurements of the proposed site collected specifically for the EIA.

The EIA was prepared in a period of 8 months (from May to December 1988) and involved an estimated time of 2 m/m (man/months) of a scientist and of 1 m/m of a technical staff.

6. Evaluation of the EIA document

The draft of the EIA was presented, together with a draft of an EIA for a sea-outfall for the Larnaca Sewerage System 5, to the Review Meeting on Environmental Impact Assessment Procedure, jointly organized in Nicosia, Cyprus, 24-27 October 1988, by PAP/RAC, OCA/PAC and the Co-ordinating Unit for MAP, in co-operation with the Environmental Conservation Service and the Fisheries Department of the Ministry of Agriculture and Natural Resources of Cyprus.

The meeting was hosted by the Agricultural Research Institute in Nicosia and was attended by 26 participants from seven Ministries and Departments of the Cyprus Government, one participant of a non-governmental organization from Cyprus, four participants from the government departments of four countries other than Cyprus, two UNEP staff members and two consultants to UNEP (for a full list see Appendix of this document).

The meeting started by the participants' visit to the planned location of the marina in order to familiarize them with the physical setting and the technical details of the planned project.

The visit to the site was followed by the presentation of the approach used in the preparation of the EIA and by the detailed presentation and discussion of the EIA.

The main comments and suggestions offered at the meeting may be summarized as follows:

- (a) the general approach proposed by UNEP for the preparation of EIAs was considered as suitable in principle, although some amendments were introduced into the proposed procedures*;
- (b) the guidelines used for the preparation of the EIA were considered, with some amendments, as sufficient general guidelines for the preparation of EIAs related to marinas, but they should have been supplemented with more specific guidelines tailored to the concrete case of the Paphos Marina.
- (c) the presented draft for the EIA was considered, after some amendments, as adequate for the decision-making process; the comments included the following:
 - information on the method for erosion control of the nearby sand beach was missing;
 - no information was provided on areas to be dredged and reclaimed, and on the quantity and quality of the dredged material or its disposal;
 - there was no information on the expected normal operation of the marina.
 - the co-operation between the experts from various ministries was pointed out as being an exceptionally good example.

The EIA document was also considered by the government Technical Committee which was established to advise the municipality of Paphos on the project.

7. Decision by the Authorizing Authority

The conclusion of the EIA study was accepted and the procedure will be normative in the future evaluation of locations for marinas in Cyprus.

So far no decision has been taken to actually build a marina in Paphos.

* The amendments suggested at the meeting are incorporated in the document listed under reference 1.

8. Monitoring of the impact of the marina

Not yet applicable.

9. Re-evaluation of the environmental impact assessment

Not yet applicable.

PART III: GUIDELINES FOR THE PREPARATION OF AN ENVIRONMENTAL IMPACT ASSESSMENT DOCUMENT FOR THE MARINA IN PAPHOS

Building on the goals and principles for EIAs, adopted by the Governing Council of UNEP and endorsed by the United Nations General Assembly 4/, and on the procedures developed for a new approach to EIAs 1/, the following general guidelines for the preparation of EIAs for the Paphos Marina were prepared by PAP/RAC with assistance of consultants. The guidelines list the issues which were expected to be addressed in preparation of the EIA.

1. Description of the proposed project

The proposed plan of the marina should be described including the following:

- general description of the entire project including location and structure of main and lee breakwaters, depth of water at the entrance to the marina, the number and type of boats for which the marina is planned, water and power supply, roads, dry docks, boat maintenance and repair facilities, slipways, housing units, hotel accommodation, restaurants, commercial areas, parking, etc.;
- reasons for selecting the proposed site, including a short description of alternatives which have been considered;
- access for vehicles, boats and parking;
- breakwaters, jetties, bridges, causeways, reclaimed land, and dredged channels;
- sources of construction material for breakwaters;
- all areas to be dredged and the quantity and quality of the dredged material. The area where the dredged material is to be discharged;
- drainage and sewage systems, solid waste disposal system and fuel supply to boats;
- expected quantity of sanitary waste and the means for its disposal both on land and at sea;
- description of the proposed stages of construction with timetable;
- description of the expected normal operation of the marina such as its maintenance and measures to ensure the water quality ;
- description of built structures in relation to natural landscape, and
- expected movement of population during construction and operating periods.

2. Description of the environment

A description of the environment of the site without the proposed marina in the form of maps and cross sections should include the following:

(a) Physical site characteristics

- An onshore topographic and offshore bathymetric map of the site and its surroundings at a scale

- of 1:5000 covering at least 2 kilometres in each direction along the coast of the proposed site, and to an offshore water depth appropriate to the proposed project;
- details of any existing or proposed offshore structures within 5 kilometres of the proposed project;
- cross sections every 250 metres along the shore, showing offshore water depth and topography, and
- physiographic features such as cliffs, terraces, beach rocks, sand dunes, and a description of their level of stability and erosion.

(b) Hydrographic and meteorological information

- Wind velocity and intensity;
- the tidal conditions and the probability of extreme conditions;
- the wave, climate and currents at the proposed site, including the probability of extreme conditions;
- hydrographic conditions of natural or artificial water channels and outlets to the sea, and
- dissolved oxygen and nutrient concentrations, and other parameters.

(c) Sedimentological information

- Longshore sand movement at the area proposed for development;
- present onshore and offshore sand accumulation and sand loss, seasonal and over a period of time; and

(d) Biological conditions

- Identification on maps of onshore and offshore habitats;
- location of main components of the habitats, e.g. areas for feeding, refuge and reproduction, and areas important for migrating species;
- protected or rare species, and
- fishing areas and species important to commercial fishing.

(e) Present land uses on site and in surroundings

- Location and size of nearby settlements;
- location and description of cultural properties;
- road and patterns of vehicle access;
- existence of beaches used by swimmers in the immediate surroundings.

3. Identification of possible impacts

预览已结束，完整报告链接和二维码如下：

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