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MEDITERRANEAN ACTION PLAN

Consultation Meeting on "Adriatic Initiative"

Athens, 18-20 December 1989

ADRIATIC SEA

OVERVIEW OF THE WORK WITHIN THE FRAME  
OF THE MEDITERRANEAN ACTION PLAN

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- Annex XX Summary of Direct Financial Inputs

## 1. INTRODUCTION

The Adriatic Sea is one of the most investigated areas of the Mediterranean in the framework of the Mediterranean Action Plan (MAP) of the United Nations Environment Programme.

The work in the region, in the framework of MAP, started in 1976 with the implementation of baseline studies of the processes and phenomena related to the pollution of the marine environment (MED POL-Phase I). It was later broadened to cover research and monitoring (MED POL-Phase II), priority actions programme (PAP), Blue Plan, specially protected areas (SPA), and oil pollution combatting.

The present document is a summary of the work carried out in the framework of MAP related to the Adriatic Sea.

## 2. POLLUTION MONITORING AND RESEARCH ACTIVITIES IN THE ADRIATIC SEA (MED POL PROGRAMME)

### 2.1 MED POL-Phase I

After the approval of the Mediterranean Action Plan in 1975, the MED POL-Phase I programme started being implemented as the assessment component of the Action Plan. Seven basic pilot projects were identified to cover monitoring and research work on the principal pollution problems of the Mediterranean (Annex I). Five Italian institutions (Annex II) working in the Adriatic region participated in MED POL-Phase I covering all of the seven pilot projects with a total contribution from MAP of US\$ 18,780 from 1975 to 1980. Five Yugoslav institutions (Annex II) were also designated to participate in the seven pilot projects and one institute, The Rudjer Boskovic from Zagreb, was selected to act as Regional Activity Centre for the project MED POL II, to assist UNEP and the U.N. Agency involved, in the coordination of the activities. For their participation, Yugoslav institutes received US\$ 249,616 from MAP from 1975 to 1980. The final reports of the projects carried out by the Italian and Yugoslav institutions were published in MAP Technical Report Series nos. 1- 7.

### 2.2 MED POL-Phase II

After examining the results and the prospectives of the MED POL-Phase I programme, the Contracting Parties to the Barcelona Convention at their Second Meeting in 1981 in Cannes, adopted the Long-term Pollution Monitoring and Research Programme in the Mediterranean (MED POL-Phase II) with a duration of ten years (1981-1991). The programme included a monitoring and a research component to be implemented by Mediterranean National institutions designated to participate through National Monitoring Agreements or through research contracts with individual institutions.

#### 2.2.1 National Monitoring Programme of Yugoslavia

The national monitoring programme of Yugoslavia, in the framework of the Mediterranean Action Plan, was initiated in 1983 and, in 1989,

it includes the participation of eleven institutions. This programme covers the monitoring of pollution of sources, coastal and reference areas and air-borne pollution of the Adriatic Sea.

At present, pollution sources monitoring and coastal waters monitoring are carried out in the following areas (Annex III, Figs. 1-16):

- Slovenian coastal area (from Koper to Savudrija).
- Rovinj area (from the Lim channel to the Red Island).
- Pula area (from Peroj to the Rasa Bay).
- Rijeka area (from Moscenica to Crikvenica).
- Sibenik area (from Skradin to Zlarin).
- Split area (from Vranjic to Stobrec).
- Dubrovnik area (from Orebic to Cavtat).
- Montenegrin coastal area (from Herceg Novi to Ulcinj).

Reference areas are monitored at:

- The Rovinj-Po river profile,
- Kornati area,
- The island Vis area,
- Coastal area of Montenegro

In 1989 monitoring of air-borne pollution (6 stations) in the Yugoslav coastal region was introduced.

A total of about 11,000 samples were taken for the period 1983-1986, covering effluents, sea water, marine organisms and sediment for different groups of parameters, (Annex IV, Tables 1-4).

Annual reports containing monitoring data and their interpretation have been regularly sent by Yugoslavia to the MAP Coordinating Unit since 1983. As at the end of 1988, a total number of 5,272 data entries are stored in the MED POL data bank.

In order to ensure a satisfactory quality of the monitoring data produced, an intercalibration exercise, organized and centrally coordinated for the whole Mediterranean region by the MESL laboratory of IAEA in Monaco under the overall coordination of the MAP Co-ordinating Unit, has been on-going since 1975. A maintenance service for the analytical instruments used in the programme was also created. Yugoslavia actively participates in the intercalibration exercise and the quality of all data is therefore checked before the data are entered into the MAP data bank.

Results of the national monitoring programme of Yugoslavia including their interpretation and trends - for the period 1983-1986 were published as a MAP Technical Reports Series No. 23.

Direct financial assistance from MAP to the national monitoring programme of Yugoslavia for the period 1983-1989 was about 360,000 US\$. Contributions (in kind) of 12 participating research institutions was about 700,000 US\$.

### 2.2.2 National Monitoring Programme of Italy

In addition to the provisions contained in art. 10 of the Barcelona Convention, the art. 3 of the Italian law no. 979 of 31 December 1982, establishes that the Ministry of Merchant Marine's duty is to organize a national network for the monitoring of the marine environment. In order to implement the above mentioned legal provisions, the Ministry has prepared a monitoring plan which covers the following areas:

- 1) Sources of pollution
- 2) Coastal areas influenced by pollution
- 3) Reference areas not influenced by pollution
- 4) Transport of pollutants into the sea through the atmosphere
- 5) Assessment of the state of pollution and proposed measures

For the implementation of the programme, already existing structures should be utilized; in particular, the coastal Regions through their own structures (University, Scientific Institutes, laboratories), and other institutes competent in the subject.

In this context, the following monitoring programme was offered by Italy as part of MED POL in the Adriatic region (Annex V):

#### Areas

<u>Regions:</u>	Veneto Marche Emilia Romagna	about 700 km of coasts.
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#### Stations:

- 250 stations at 500 m. from the coast )
- 250 stations at 1000 m. from the coast ) - water
- 250 stations at 5000 m. from the coast )
- 40 stations in shellfish growing areas - bivalves

#### Frequency of sampling:

- 4 times a year (seasonal) for a total of 3160 samplings/year.

#### Parameters and matrices

##### BIVALVES

1. Total Coliforms
2. Faecal Coliforms
3. Streptococci
4. Salmonellae
5. Hg
6. Cd

##### WATER

1. Location and number of Sampling Stations
2. Geographical Co-ordinates
3. Distance from shore
4. Depth from the bottom
5. Date and time of sampling
6. Depth at which sample is taken
7. Oceanographic and meteorological observations
8. - Wave height  
- Wind direction and speed  
- Surface current direction and speed
9. Salinity and/or conductivity of water
10. Dissolved oxygen

11. pH
12. Transparency
13. Colour
14. Chlorophyll "a"
15. NO<sub>2</sub>
16. NO<sub>3</sub>
17. NH<sub>3</sub>
18. PO<sub>4</sub>
19. Total P
20. Oils residue (tar)
21. Mineral Oils
22. Detergents
23. Phenol
24. Total Coliforms
25. Faecal Coliforms
26. Faecal Streptococci
27. Salmonellae

Although Italy has not signed a monitoring agreement with the MAP Coordinating Unit, since 1987 monitoring data have started being sent to MAP data bank which has stored up to now a total number of 891 entries. The Laboratories involved in the programme actively participate in the intercalibration exercise to check the quality of the data which were sent to MAP.

#### 2.2.3. Research projects carried out by Institutes located in the Adriatic region

In the framework of the research component of the MED POL-Phase II, work relevant to the study of the pollution of the marine environment has started in 1982. The list of the research activities of MED POL adopted by the Contracting Parties is contained in Annex VI.

A total of 147 projects (50 from the Adriatic side of Italy and 97 from Yugoslavia) was supported by the Mediterranean Action Plan.

The total financial contribution (1982-1989) from MAP for the implementation of those projects was for Italy 132,120 US\$ and for Yugoslavia 438,350 US\$.

Results of the above research were published in numerous scientific papers, as well as in MAP Technical Reports Series Nos. 1-10, 18-24 and 28.

The map (with attached list) of Italian and Yugoslav research institutes working on the research component of MED POL in the Adriatic region is presented in Annex VII.

The list of the research projects relevant to the Adriatic and supported by MAP is presented in Annex VIII (Italy) and Annex IX (Yugoslavia).

#### 2.2.4 Jellyfish programme

At the Third Meeting of the Contracting Parties held in Dubrovnik (28 February - 4 March 1983), the problem of the occurrence of

jellyfish blooms in some areas of the Mediterranean was raised, and a request was formulated to UNEP for action in the framework of MED POL-Phase II.

As a result, a Workshop on Jellyfish blooms in the Mediterranean was organized by the MED UNIT in Athens from 31 October to 4 November 1983, as part of the MED POL-Phase II activities. Biological and environmental conditions related to the occurrence of jellyfish swarms were analysed and their impact on human activities was reviewed and discussed.

As a result of the Workshop, and after the matter was reviewed by the Contracting Parties, National Co-ordinators for MED POL were asked to initiate immediate action in the framework of national monitoring programmes, extending the monitoring activities to cover qualitative and quantitative observations of jellyfish and, at the same time, the submission of research proposals in the framework of MED POL research activities was encouraged through the agreed channels. A large number of projects, especially covering the Adriatic, was therefore submitted to the MAP Coordinating Unit for approval and support. More than 30 projects related to the jellyfish mass occurrence were implemented during the period between 1985 and 1988. The projects are also listed in Annexes VIII and IX.

Results of the jellyfish programme were reviewed at two meetings held in Trieste, 27-29 January 1986 and 2-5 September 1987. Final reports of all projects supported through MAP (over 200,000 US\$) were prepared and will be published in the MAP Technical Reports Series. A short summary of the work carried out in particular in the Adriatic is presented in Annex X.

#### 2.2.5 Study of Plankton Bloom phenomena

The problem of plankton bloom in the Adriatic Sea is becoming a very serious one and the Mediterranean Co-ordinating Unit is trying to assist Italy and Yugoslavia towards the understanding of the phenomena and the identification of practical actions to alleviate the consequences of the blooms.

A meeting of experts on the implications and control of undesirable plankton blooms was held in Athens (4-6 April 1989). The report of the meeting (UNEP(OCA)/MED WG.4/2) gives an overview of the problems as well as recommendations for future actions.

#### 2.2.6 Fellowships and Training provided to scientists from the Adriatic region

In the framework of MED POL-Phase II the Mediterranean Co-ordinating Unit is offering fellowships for the participation at meetings and on-job training courses on subjects of relevance to the marine pollution.

Since 1982 over 100,000 US\$ were spent on fellowships and training for Yugoslav and Italian scientists from the Adriatic region.



The list of fellowships granted is presented in Annex XI for Italian scientists from the Adriatic region and Annex XII for Yugoslav scientists. The list of on-job training courses granted is presented in Annex XIII.

### 3. REGIONAL CENTRE FOR THE PRIORITY ACTIONS PROGRAMME

#### 3.1 Work of the Centre

A Mediterranean Regional Centre for Priority Actions operates in Split since 1980. It is financed by the Mediterranean Action Plan (\$710,000 per year) and receives a financial counterpart contribution in local currency from Yugoslavia (equivalent to \$150,000 per year), where a law was passed in 1989 to give the Centre federal status.

The Centre contributes to sound environmental management by promoting a practical approach to environmental problems in ten "priority areas" selected by the Mediterranean States. These are:

1. Priority action "Integrated planning and management of Mediterranean coastal areas"
2. Priority action "Application of environmental impact assessment in the development of Mediterranean coastal zones"
3. Priority action "Water resources development for Mediterranean islands and isolated coastal areas"
4. Priority action "Rehabilitation and reconstruction of historic settlements"
5. Priority action "Land-use planning in earthquake zones"
6. Priority action "Soil erosion mapping and measurements"
7. Priority action "Solid and liquid waste management, collection and disposal"
8. Priority action "Development of Mediterranean tourism harmonized with the environment"
9. Priority action "Environmental planning and management of aquaculture in Mediterranean conditions"
10. Priority action "Mediterranean co-operative network in renewable sources of energy"

During 1988-1989 biennium activities were carried out in all these areas. A description appears in Annex XIV.

#### 3.2 Coastal Zone Management in the Adriatic Region

The PAP Centre has carried out in particular, studies relevant to the Adriatic regions:

##### A. Studies:

##### Water:

- Changement de Qualité des Eaux et écologie de petits reservoirs: SILBA - Yugoslavia (par B. Dussart).
- Report on the Island of Silba, Solution of Water Supply by way of Rain Water Storage (by L. Pesce).

- Water Supply of Islands in Yugoslavia by way of Regional Systems Connected by Submarine Pipelines to the Mainland (by J. Barbir and T. Ramljak).
- Reuse of Treated Waste Water - Possible Applications in Yugoslavia (by J. Margreta and B. Ivancis).

#### Integrated Planning:

- The Planned and the Actual use of the Rijeka Bay based on the Integrated Planning on Land and Sea (by A. Randic, M. Mastrovic and N. Kruzic).
- Rehabilitation and Reconstruction of Historic Settlements in Yugoslavia (by T. Marasovic).
- Processus de Travail Intégral sur le mayau de Split (par D. Marasovic, J. Marasovic et M. Maroevic).
- Socio-Demographic Analysis of the Historic Core of Split (by M. Maroevic).
- Etude, Recherche et Présentation du Developpement Spatial d'un ensemble et d'un édifice Historique: Expérience de Split (Yugoslavie) (par J. Marasovic et D. Marasovic).

#### Seismic Risk:

- The Physical Development Plan of the Republic and the Prevention of the Seismic Risk in the project, YUG/79/164, Socialist Republic of Montenegro : A Methodological Review (by P. Rodonga, V. Djanovic, S. Furman, J. Lazarevic and T. Michalak), Republic Institute for Town Planning and Design (RZUP), Titograd, UNCHS, Nairobi.
- Earthquake Vulnerability and Risk Assessment for Physical and Urban Planning - Methodology based on the 1979 Montenegro Earthquake (by J. Petroviski, Z. Milutinovic), Institute of Earthquake Engineering and Engineering Seismology, University of Kiril and Metodiz, Skopje.
- Principal Issues in Determining the Seismic Vulnerability and the Acceptable Seismic Risk in Yugoslavia (by J. Petrovski and Z. Milutinovic).

#### Solid and Liquid Waste:

- Solid and Liquid Waste Collection and Disposal in the Mediterranean Region of Yugoslavia.

#### Soil:

- Yugoslavia Case Study: Protection of Agriculture Land from Non-agriculture Uses in the Adriatic Coastal zone (by M. Janic).
- Soil Protection against Erosion in the Mediterranean Area- Yugoslavic National Report (by R. Lazarevic and V. Topic)

Tourism:

- Yugoslav experience in the System Approach to the Development of National Tourism (by N. Mladineo, J. Milicic and J. Slavica)

Energy:

- Renewable Energy Assessment and some Applications of Solar Energy in Croatia, Yugoslavia (by N. Urli, U. Desnica and B.G. Petrovic).
- Thermal Solar Energy Application in Tourism - Yugoslavia (by J. Grabovac, P. Novak and M. Basarac).

Pilot Project: Kastela Bay

- Definition of Criteria for the Disposal of Waste Water in the Kastela Bay.
- Data Base Software Support for the Project "The Bay of Kastela" (a proposal).
- Environmental Capacity of the Kastela Bay - General Methodology and plan of Analysis.
- Assessment and Management of Health and Environmental Risks from Industrial Activities in the Kastela Bay (proposal for a case study).
- Ecological Criteria for the Rational Planning and Development of Aquaculture in the Kastela Bay - Marina (Synthesis).
- The Natural Characteristics of the Sea Water in the Kastela Bay and the Impacts of the Waste Waters (by M. Gacic, A. Baric, N. Krstulovic, T. Pucher-Petkovic, D. Regner and M. Tudor)
- Training on the Application of the ARC/INFO Programme Package (a proposal): "Land Capacity and Constraints for Urban Development"- Application of Treshold Analysis on the Example of the Kastela Bay Municipality as a Segment of a Wider Sea Area Studied within the Project.

B. Reports:

- Yugoslavia National Report on Integrated Planning and Management of Mediterranean Coastal zones (by A. Randic).
- Yugoslav National Report: Seismic hazard and Seismic Risk Control in the Physical Development and Urban Planning in Yugoslavia (by B. Pavicevic).
- National Report of Yugoslavia on Soil Protection.
- FAO-MEDRAP-PAP/RAC Mission Report for Pilot Project Limski Kanal, Yugoslavia (by O. Guelorget, I. Katavic and G. Marmulla).
- Yugoslav National Report on Tourism (by Z. Klaric)

- Notes of the Meeting of Yugoslav Authorities and PAP/RAC Representatives (Split, 13 October 1987).
- Mission Report to the Kastela Bay (by A. Demetropoulos).
- Notes of the Meeting of the Evaluation of the Activities on the Preparation of PAP Pilot Project "Kastela Bay" in 1988.
- Report on the Hitherto PAP Activities in the Preparation and Implementation of the Project "Management of Natural Resources of the Kastela Bay" in 1988.
- Proposal of Training Programme for ARC/INFO within the Pilot Project of the Kastela Bay.

### 3.3 Pilot Projects in the Adriatic Region

Of special relevance to the Adriatic is the Pilot project on the rehabilitation of the Kastela Bay, Split.

- This PAP project is part of a large-scale national project wherein the solution of problems related to the environmentally sound management of natural resources of the Bay and the surrounding urban area of Split is approached in an integrated manner. PAP contribution to this project consists of the identification of the assimilative capacity of the Bay; incorporation of the engineering and environmental components for the determination of the appropriate waste water treatment system; determination of design criteria for submarine outfalls; and starting off the activities for the creation of a complex outfalls; and starting off the activities for the creation of a complex geographical information system and a dynamic coast inventory.
- The following have been completed:
  - methodology (verified), and the programme and time table of analyses to be made for the assessment of environmental capacity of the Bay;
  - programme of monitoring and analyses, and a document on the natural characteristics of the sea water in the Bay and the impacts of waste waters on the marine environment;
  - a document which defined ecological criteria for the rational planning and development of aquaculture in the Bay;
  - training programme for the preparation of GIS by the use of PC-ARC/INFO software (the first phase of the training has been completed) with the support of UNEP-OCA/PAC;
- By the end of this year, the programme of monitoring and analysis will be completed, and the assimilative capacity and criteria for discharge of treated waste water will be determined.
- The project has been selected by the World Bank for joint support. A preparatory project of \$350,000 should lead to a large scale loan aiming at reducing industrial pollution in the Bay.

#### **4. PORT RECEPTION FACILITIES IN THE ADRIATIC REGION**

##### **4.1 Port Reception Facilities**

The map (with attached list) of the Adriatic Sea with the indication of ports which require port reception facilities is presented in Annex XV. The list attached to the map also indicates the estimated cost of constructing such facilities in respective ports.

A report on the technical and operational aspects of marine transport related to marine pollution problems in Yugoslavia was prepared by the technical expert of ROCC (June 1988). The report deals with following topics:

- i. Oil pollution:
  - a. operational discharges of oil
  - b. accidental oil pollution
- ii. Pollution by chemicals;
- iii. Pollution of ports by solid wastes.

##### **4.2 Floating Facility in Rijeka**

In implementation of the Genoa Declaration and with the assistance of the EEC, the port of Rijeka purchased and equipped a small tanker, approximately 1,300 tonnes, named ECOMAR, to be used as a floating reception facility. The aim of this unit was to receive oily residues (ballast water, bilge water, etc.) from ships. It became operational in 18 March 1988 and now operates in the Bay of Rijeka. It will enable a better protection of the marine environment in the region which has numerous beaches and leisure zones. The Rijeka port authorities intend to offer the services of the unit to other North Adriatic ports, and a co-operation with the port of Trieste is also foreseen.

#### **5. ADRIATIC COASTAL CITIES**

On the Adriatic coast there are 78 cities (4 in Albania, 1 in Greece, 63 in Italy and 10 in Yugoslavia) with the population above 10,000. Nine of those cities (7 in Italy, 2 in Yugoslavia) are with the population above 100,000.

The map of the Adriatic cities (with the attached list) is presented in Annex XVI.

#### **6. HISTORIC SITES IN THE ADRIATIC REGION**

There are 15 sites on the coastal region of the Adriatic (2 in Albania, 1 in Greece, 6 in Italy and 6 in Yugoslavia) which are on the list of historic sites adopted by the Contracting Parties.

The map of the historic sites (with the attached list) is presented in Annex XVII.

At the meeting in Marseille (19-21 Jan. 1989) the list of historic sites was updated and amended and a "Guidelines for the study, protection, planning and management of Mediterranean historic sites" was adopted.

#### **7. SPECIALLY PROTECTED AREAS IN THE ADRIATIC REGION**

There are 13 areas in the Adriatic region (2 in Albania, 1 in Italy and 10 in Yugoslavia) which are declared by respective countries to be specially protected areas.

The map (with the attached list) of those areas is presented in Annex XVIII.

Description of those areas is contained in the Directory of marine and coastal protected areas in the Mediterranean region published as a MAP Technical Reports Series No. 26.

#### **8. CLIMATIC CHANGES IN THE ADRIATIC REGION**

The problem of implications of climatic changes in the Mediterranean region was studied by the Task Team established by UNEP (OCA/PAC and MAP). Members of the Task Team prepared 23 papers (Annex XIX) which were presented at the meeting of the Task Team held in Split (3-8 October 1988, Report UNEP(OCA)/WG.2/25).

One of the six case studies dealt with the delta of the River Po and the Venice lagoon (document available). The results of this study were presented at the Seminar on implications of climatic changes in the Po delta and Venice lagoon, Venice, 25-26 May 1989 (Report available).

ANNEX I

BASIC PILOT PROJECTS OF THE MED POL-PHASE I PROGRAMME  
(1976-1980)

ANNEX I  
BASIC PILOT PROJECTS OF THE MED POL-PHASE I PROGRAMME  
(1976-1980)

- MED POL I: Baseline Studies and Monitoring of Oil and Petroleum Hydrocarbons in Marine Waters
- MED POL II: Baseline Studies and Monitoring of Metals, particularly Mercury and Cadmium, in Marine Organisms
- MED POL III: Baseline Studies and Monitoring of DDT, PCBs and Other Chlorinated Hydrocarbons in Marine Organisms
- MED POL IV: Research on the Effects of Pollutants on Marine Organisms and their Populations
- MED POL V: Research on the Effects of Pollutants on Marine Communities and Ecosystems
- MED POL VI: Problems of Coastal Transport of Pollutants
- MED POL VII: Coastal Water Quality Control



ANNEX II

RESEARCH INSTITUTES IN THE ADRIATIC REGION WHICH  
PARTICIPATED IN THE MED POL-PHASE I PROGRAMME  
(1976-1980)

ANNEX II  
RESEARCH INSTITUTES IN THE ADRIATIC REGION  
WHICH PARTICIPATED IN THE MED POL-PHASE I PROGRAMME  
(1976-1980)

ITALY

OBSERVATORY FOR EXPERIMENTAL GEOPHYSICS, MARINE LABORATORY, TRIESTE  
INSTITUTE OF MARINE BIOLOGY-CNR, VENICE  
CENTRE FOR RADIOCHEMISTRY AND ACTIVATION ANALYSIS-CNR, INSTITUTE  
OF GENERAL CHEMISTRY, PAVIA  
INSTITUTE OF HYGIENE, UNIVERSITY OF TRIESTE, TRIESTE  
INSTITUTE OF GENERAL AND INORGANIC CHEMISTRY, FACULTY OF INDUSTRIAL  
CHEMISTRY, UNIVERSITY OF VENICE, VENICE

YUGOSLAVIA

LABORATORY FOR TRACE ELEMENT ANALYSES, DEPARTMENT OF PHYSICS  
AND MATHEMATICS, FACULTY OF INDUSTRIAL PEDAGOGY, UNIVERSITY  
OF RIJEKA, RIJEKA  
INSTITUTE FOR OCEANOGRAPHY AND FISHERIES, SPLIT  
THE BIOLOGICAL INSTITUTE, DUBROVNIK  
CENTRE FOR MARINE RESEARCH, "RUDJER BOSKOVIC" INSTITUTE, ZAGREB  
MARINE BIOLOGICAL STATION, INSTITUTE OF BIOLOGY, UNIVERSITY OF  
LJUBLJANA, PORTOROZ

ANNEX III

INVESTIGATED AREAS AND THE LOCATIONS OF  
SAMPLING STATIONS OF THE YUGOSLAV  
NATIONAL MONITORING PROGRAMME

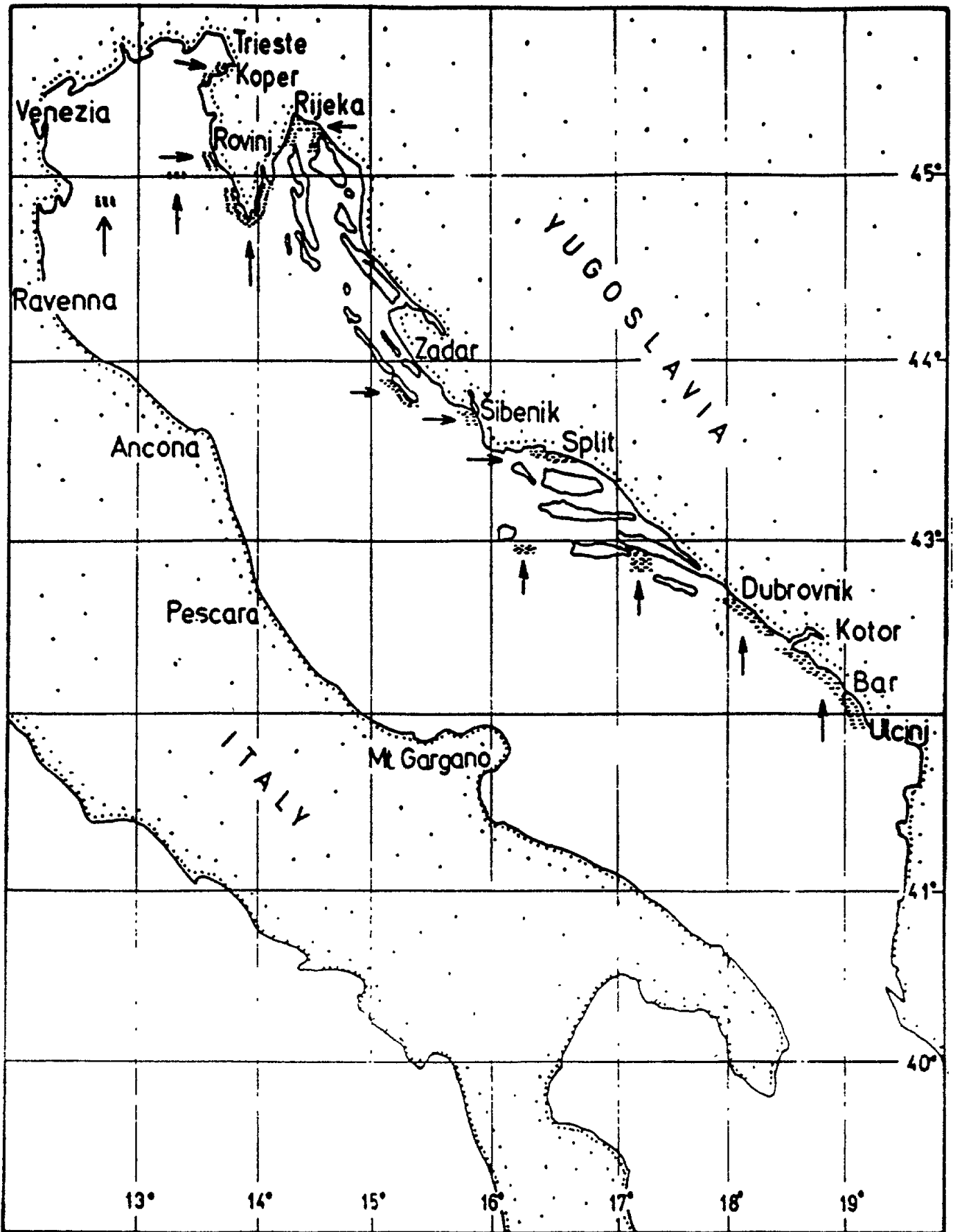


Fig. 1 Yugoslav National Monitoring Programme - investigated areas

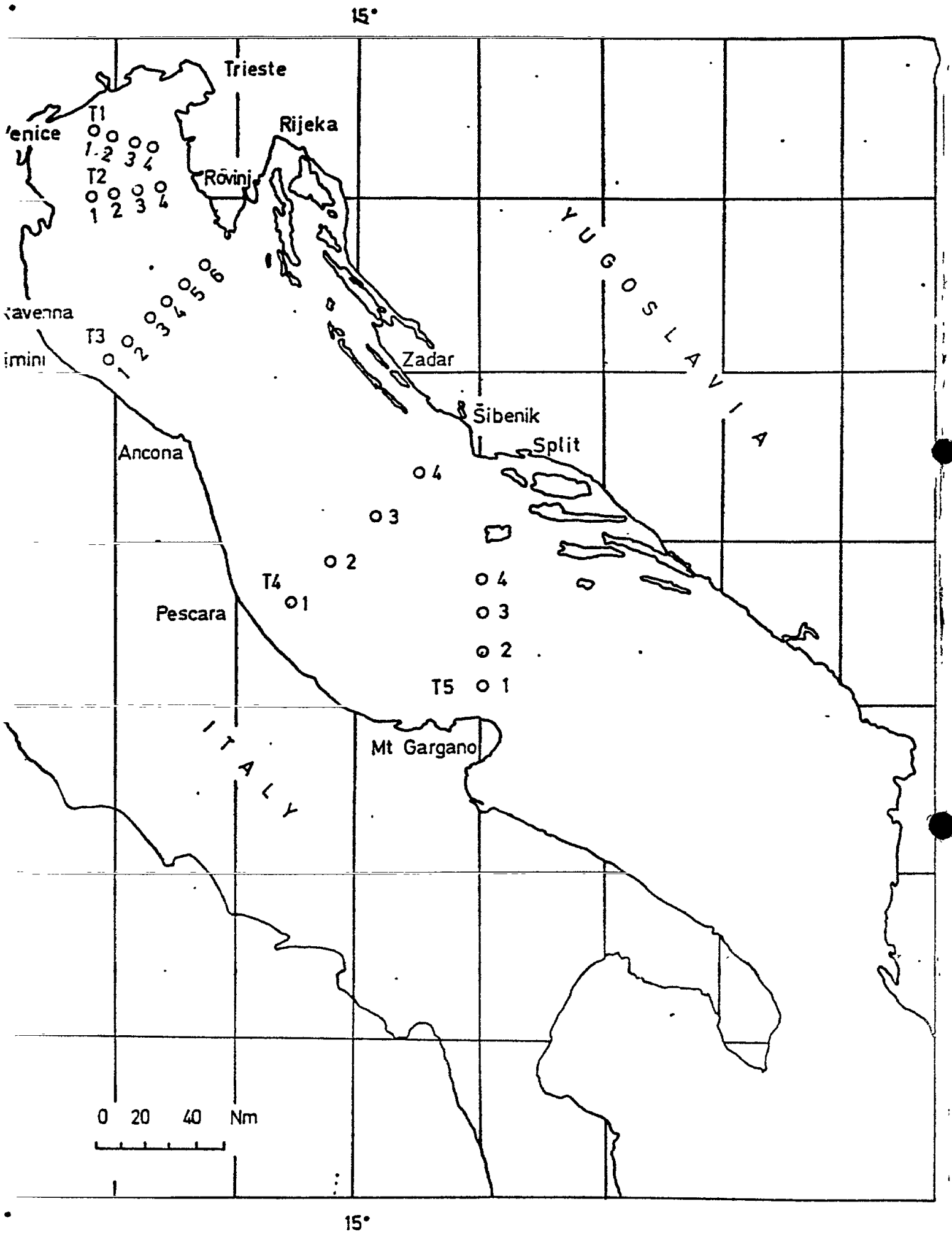


Fig. 2 Grid of sampling stations in open waters (reference areas)

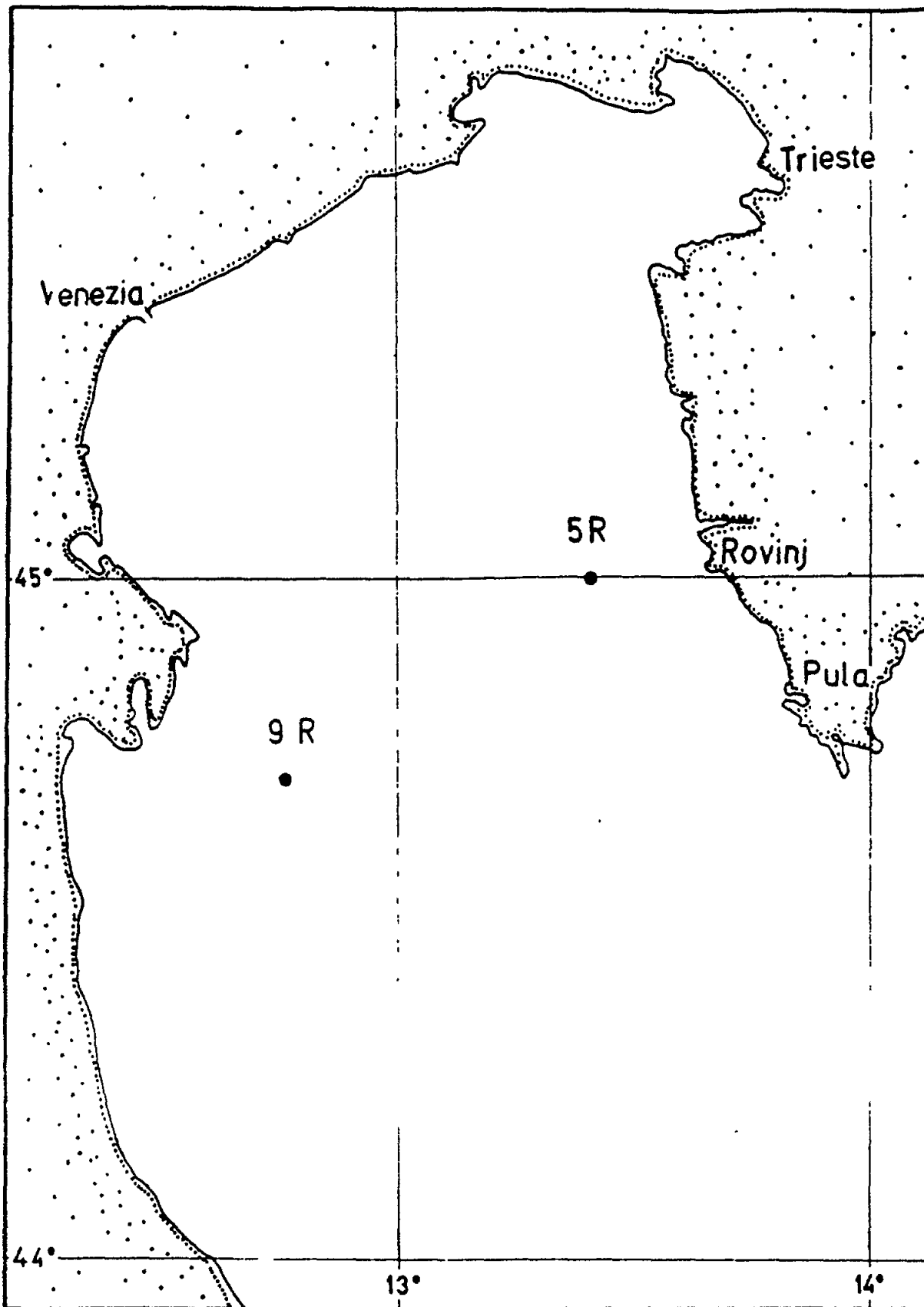


Fig. 3 Po profile - sampling stations

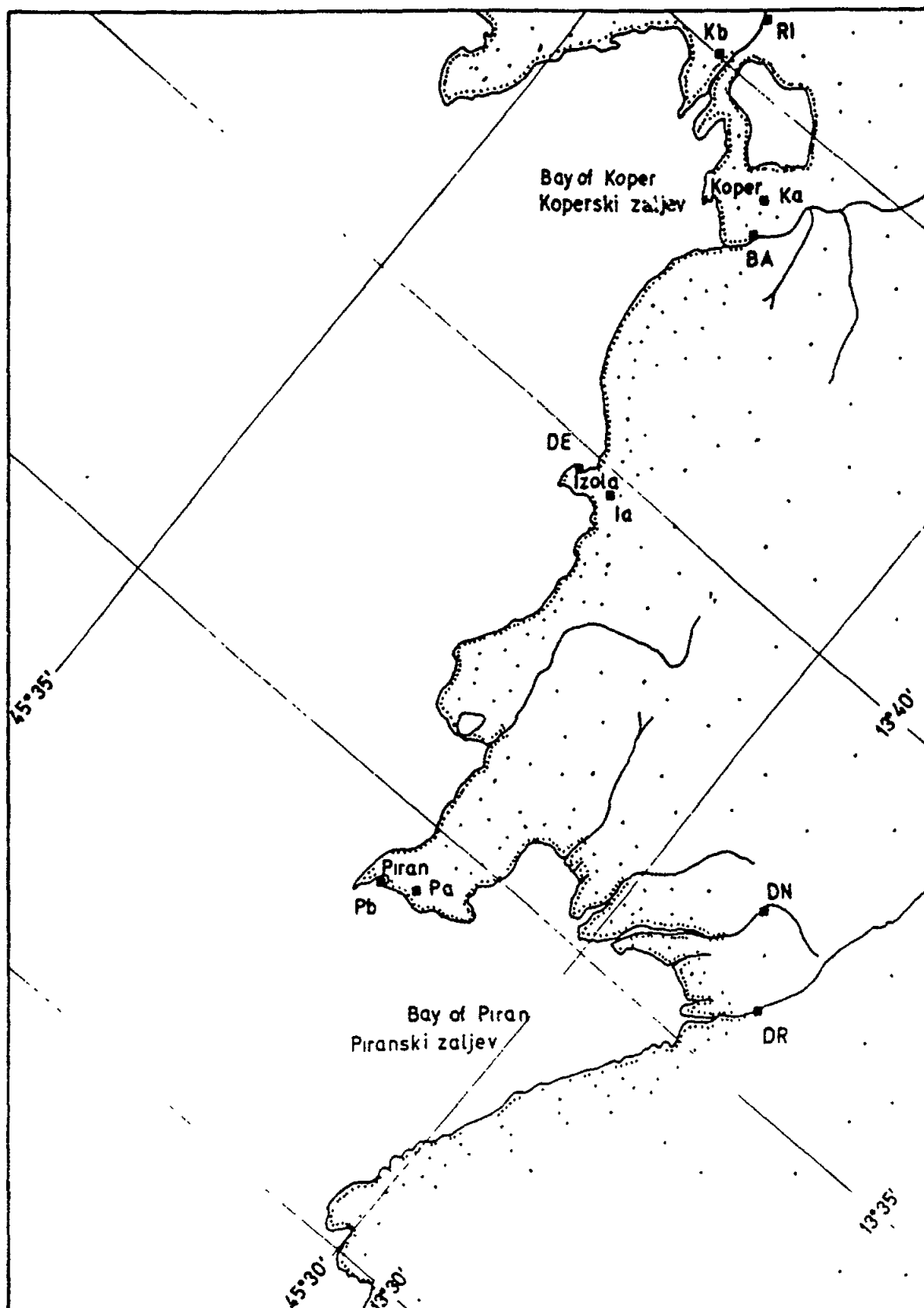


Fig. 4 Slovenian coastal area - effluent sampling stations

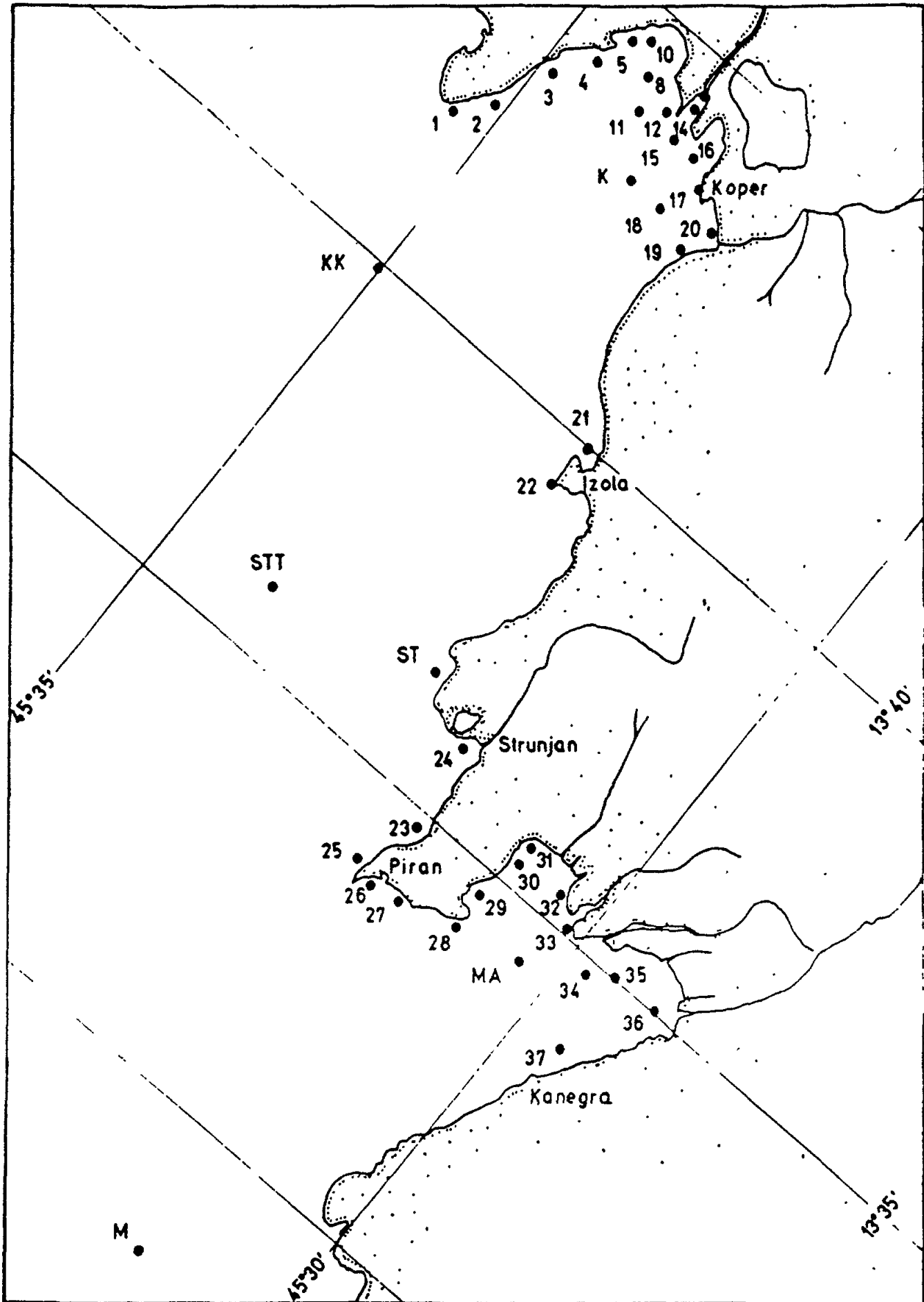


Fig. 5 Slovenian coastal area - coastal water sampling stations



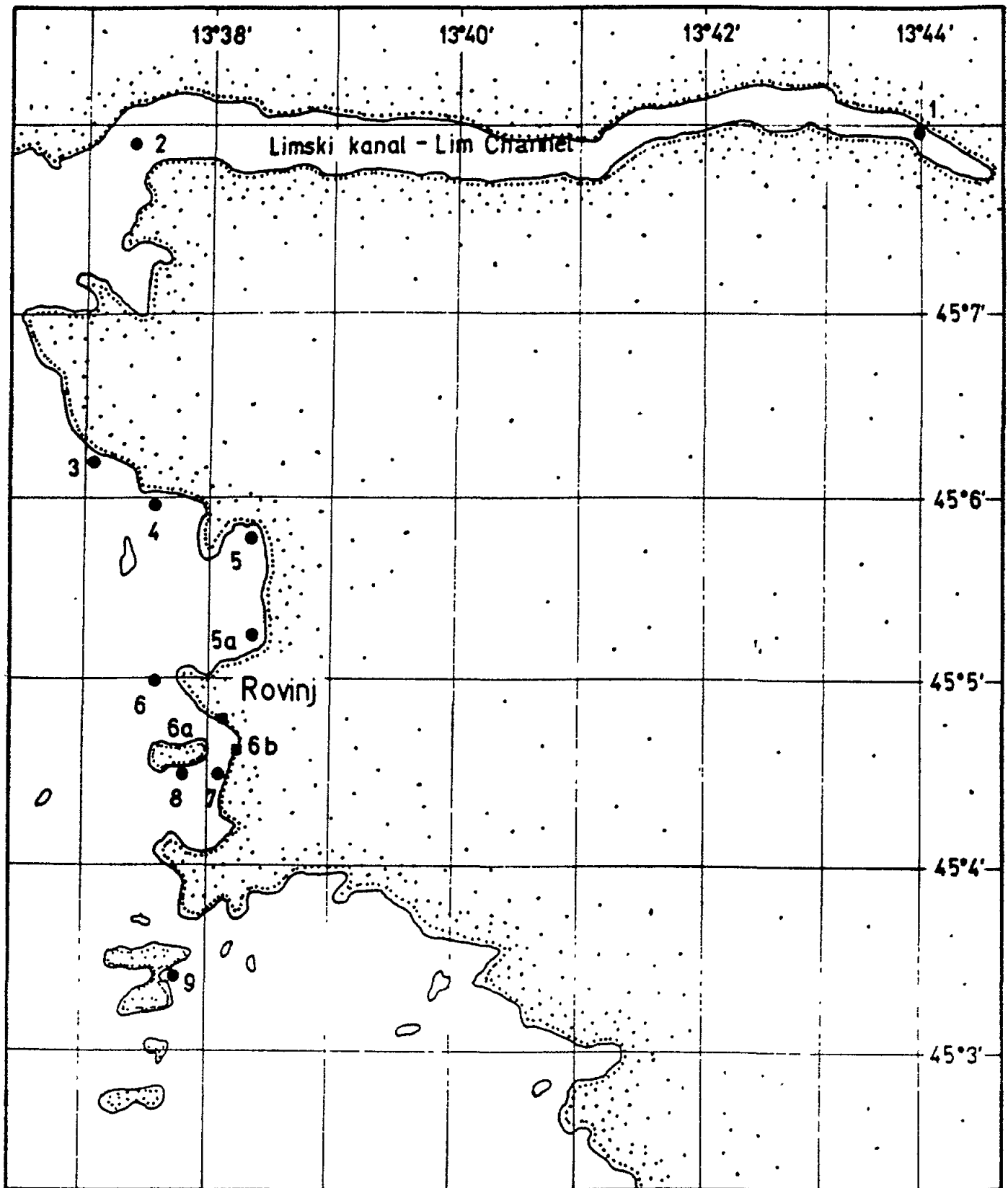


Fig. 6 Rovinj area - sampling stations

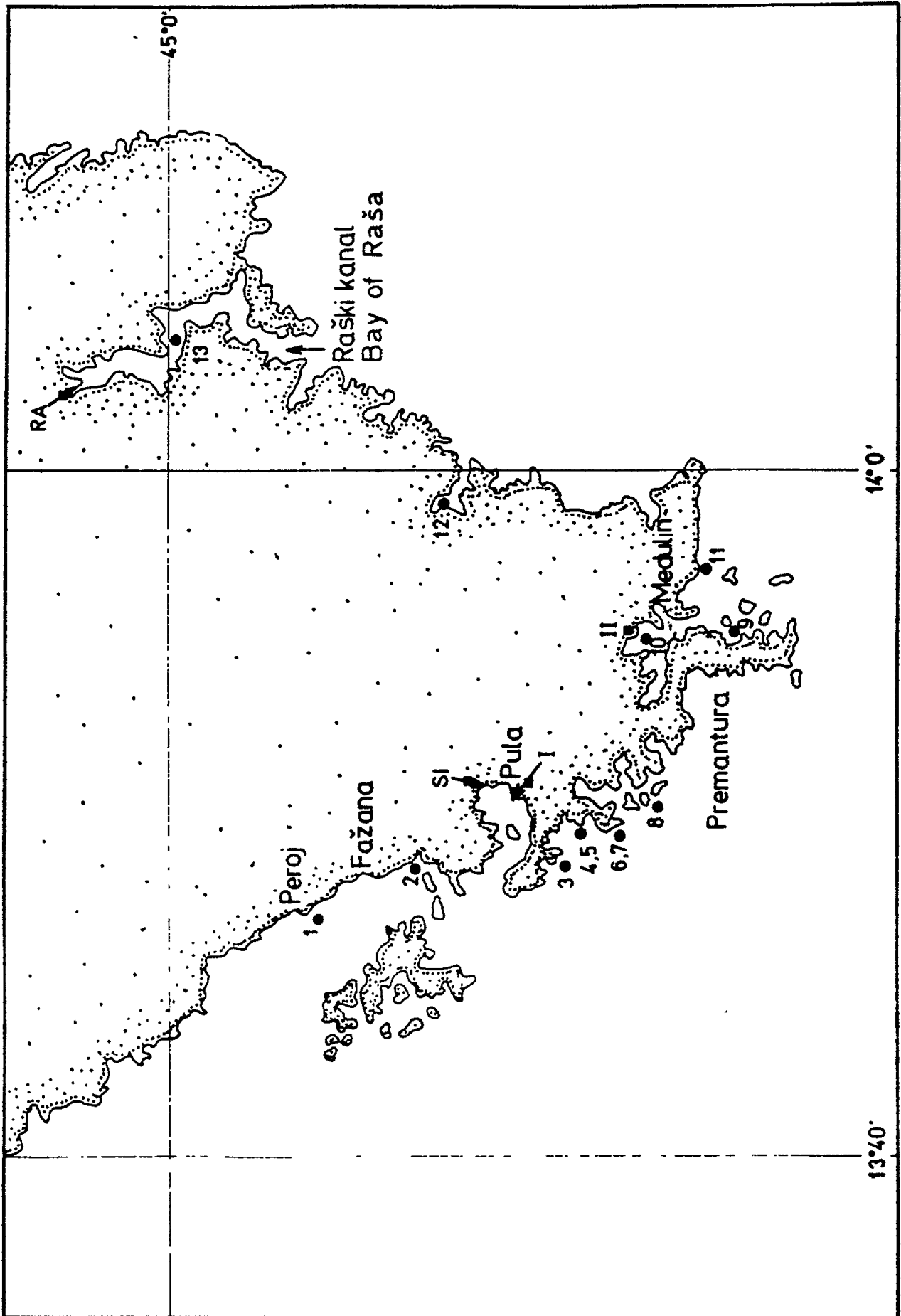


Fig. 7 Pula area - sampling stations

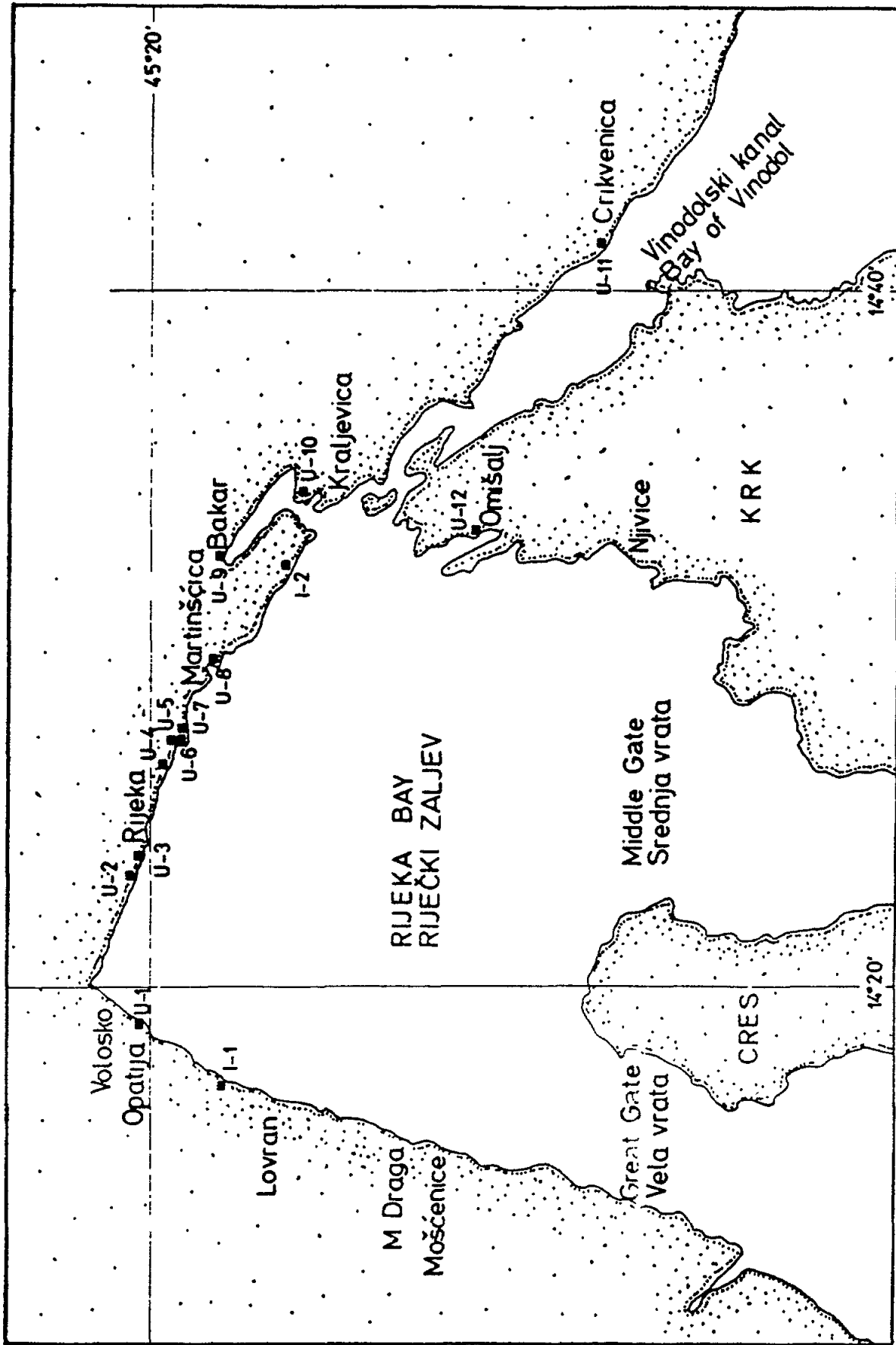


Fig. 8 Rijeka area - effluent sampling stations

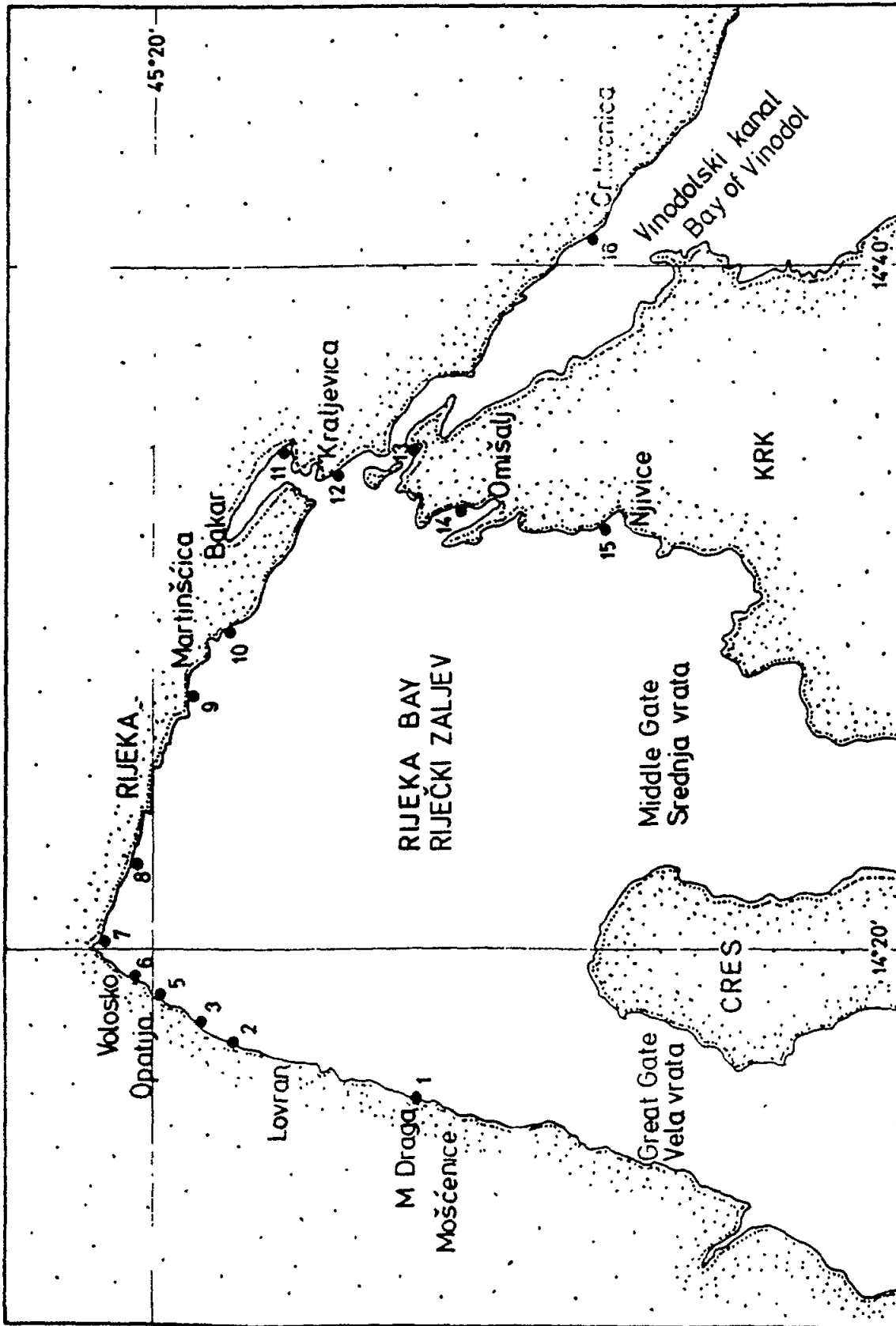


Fig. 9 Rijeka area - coastal water sampling stations

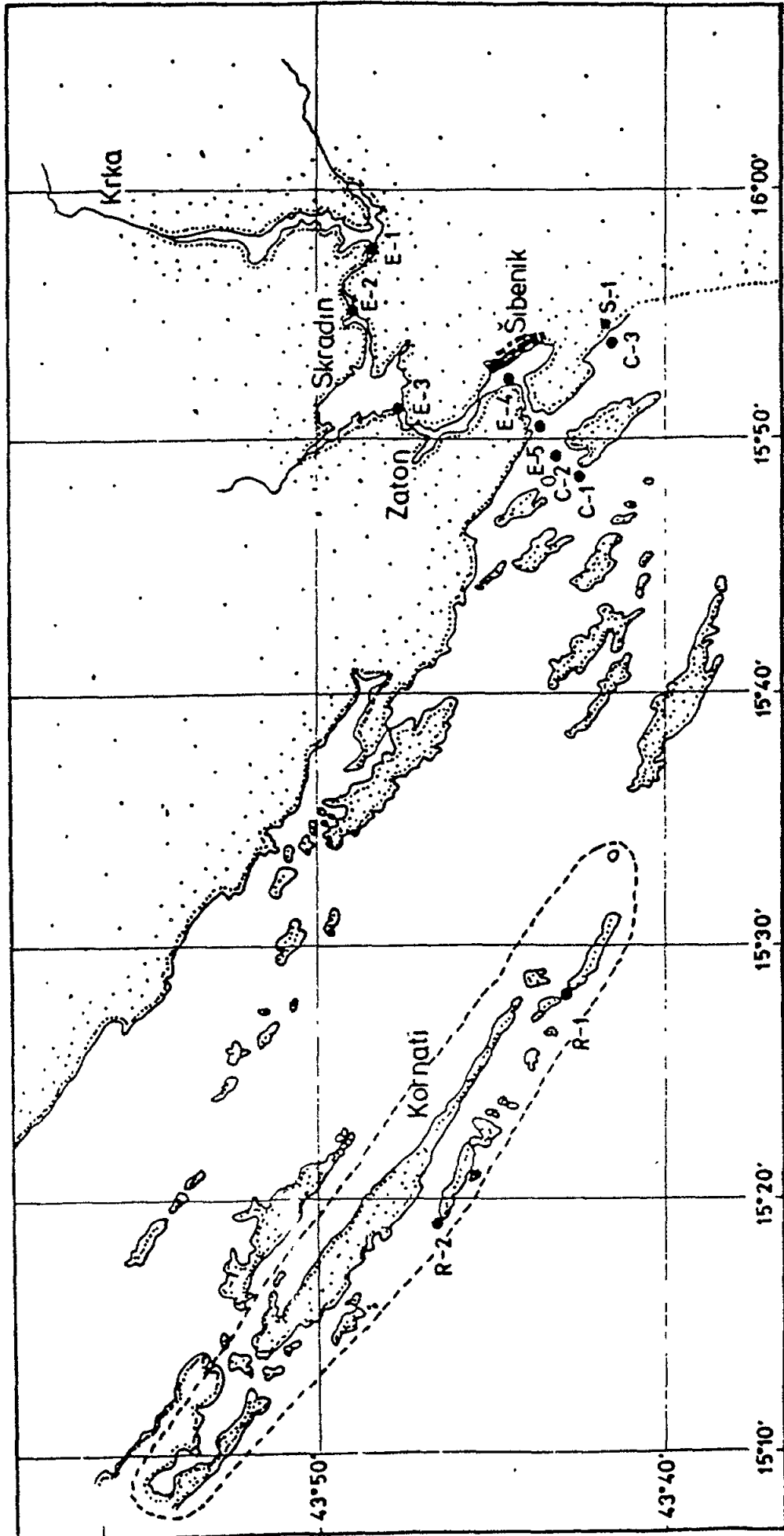


Fig. 10. Krka estuary and the Kornati Archipelago - sampling stations

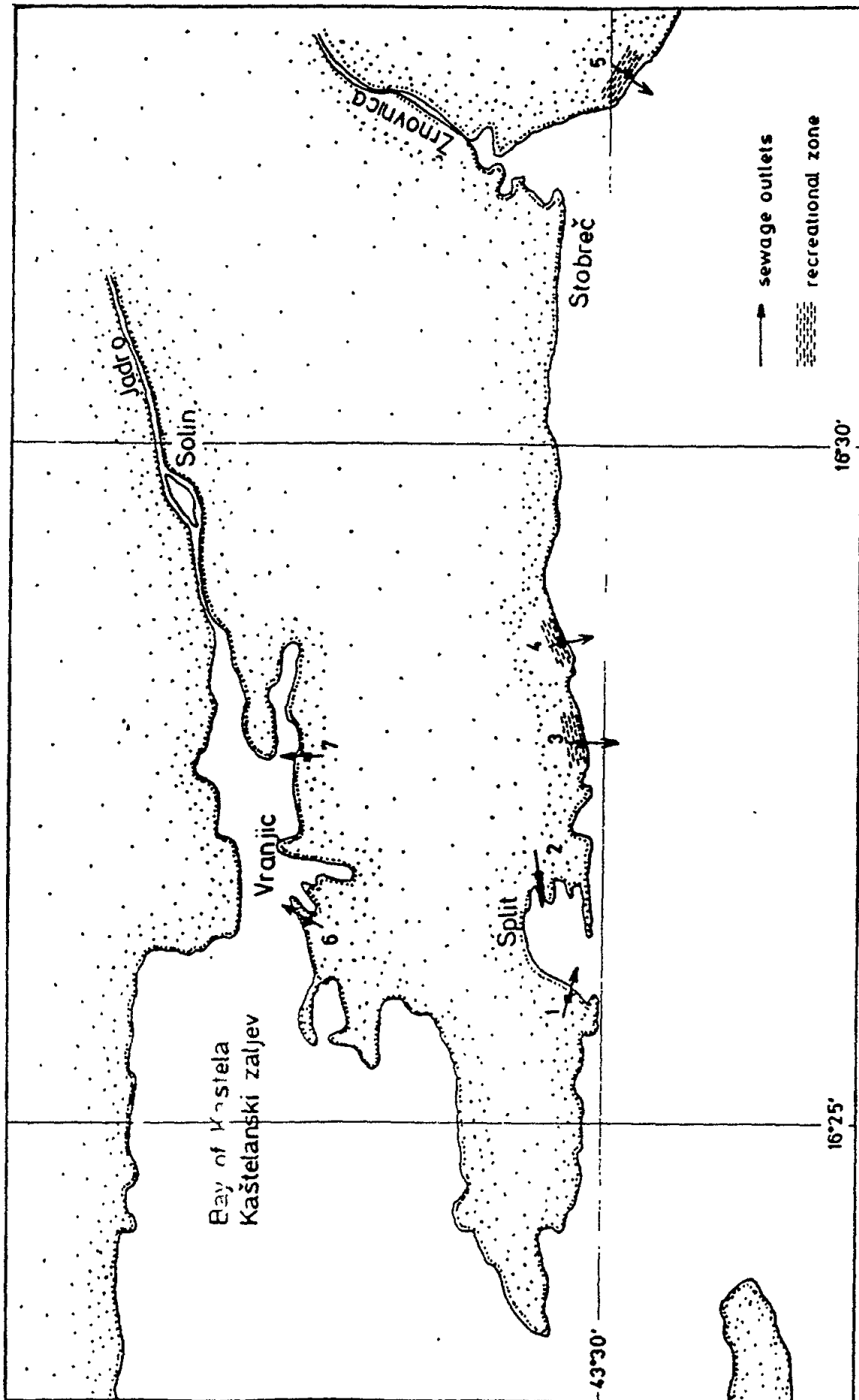


Fig. 11 Split area - effluent sampling stations

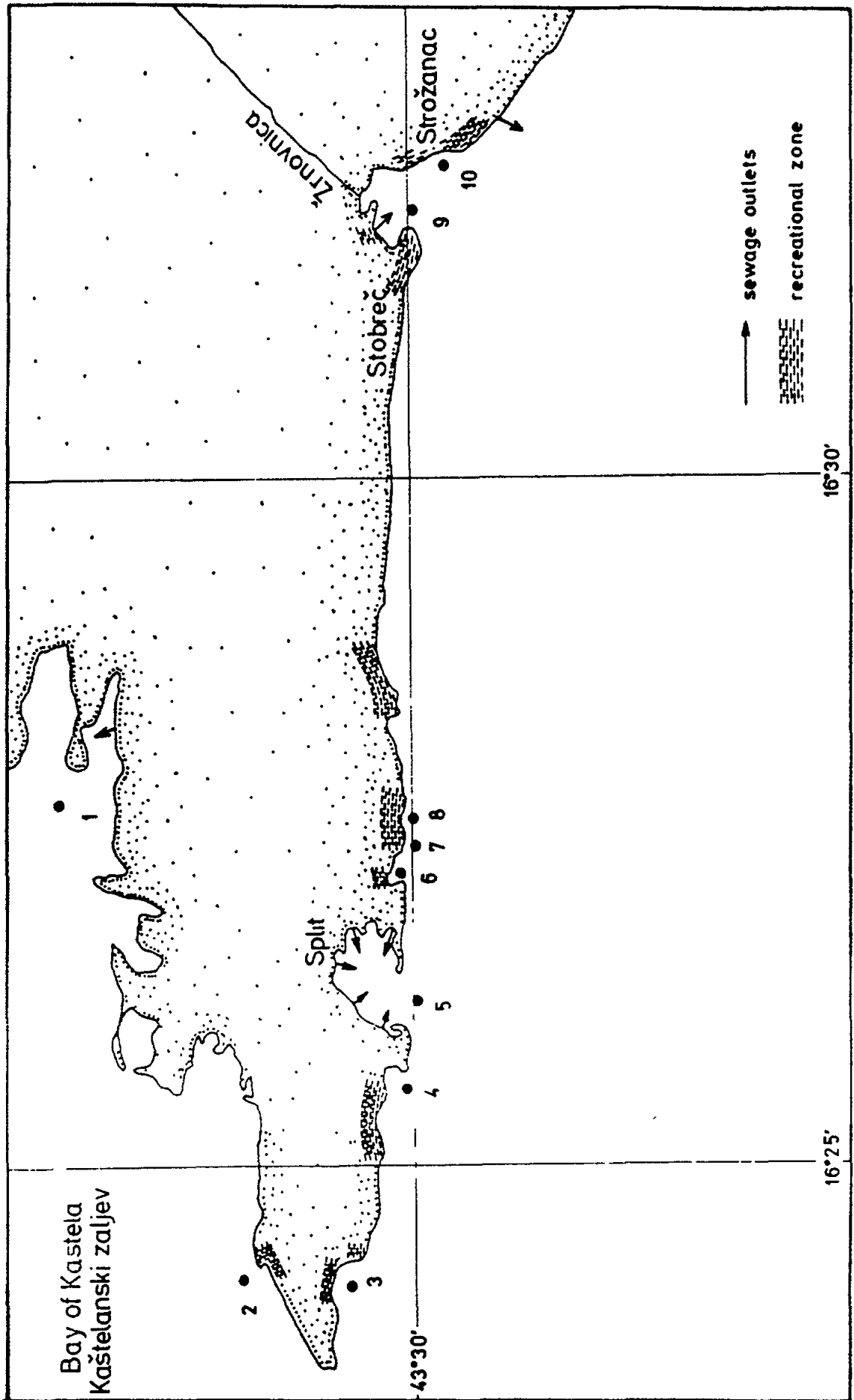


Fig. 12 Split area - coastal water sampling stations

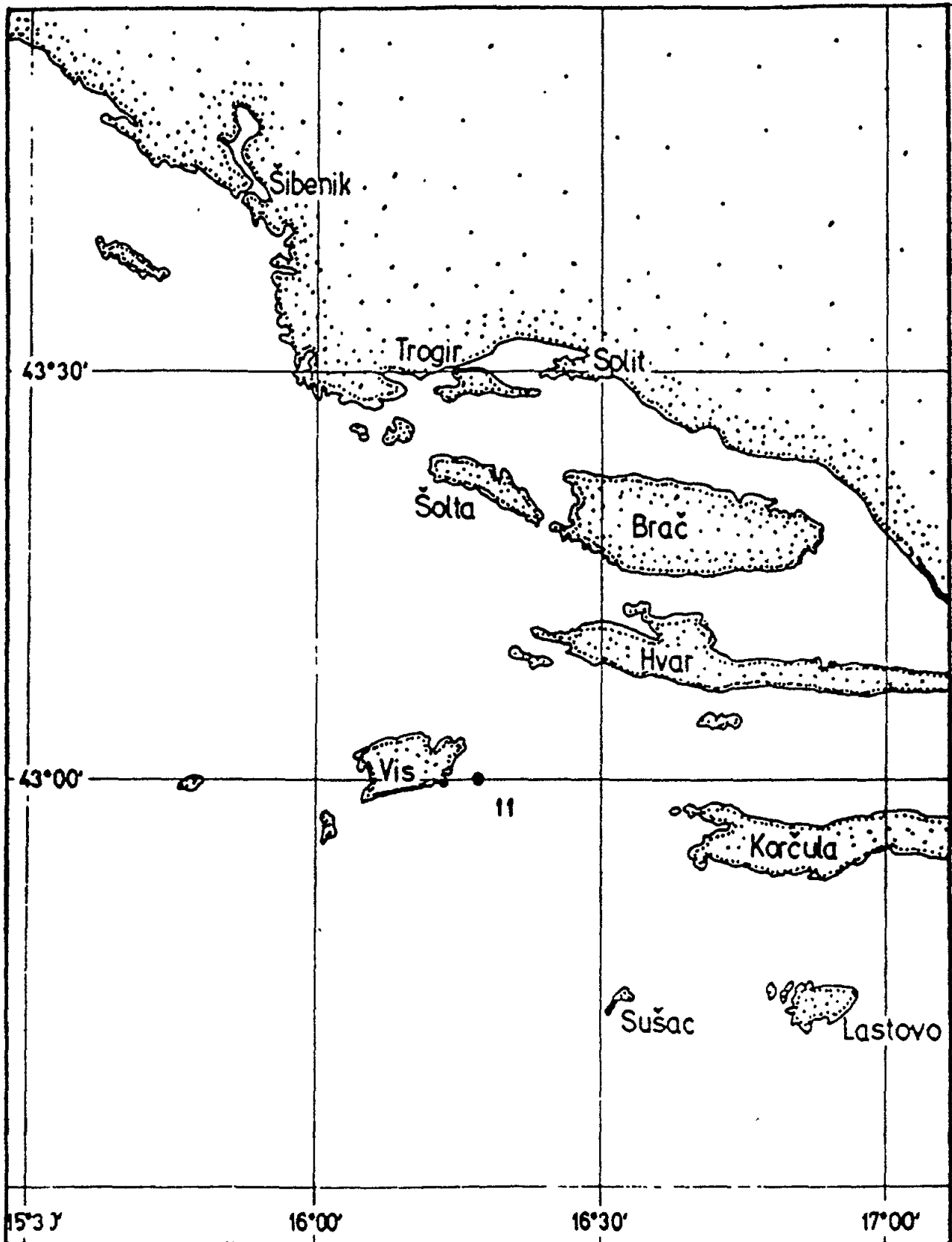


Fig. 13 Vis island area - reference station



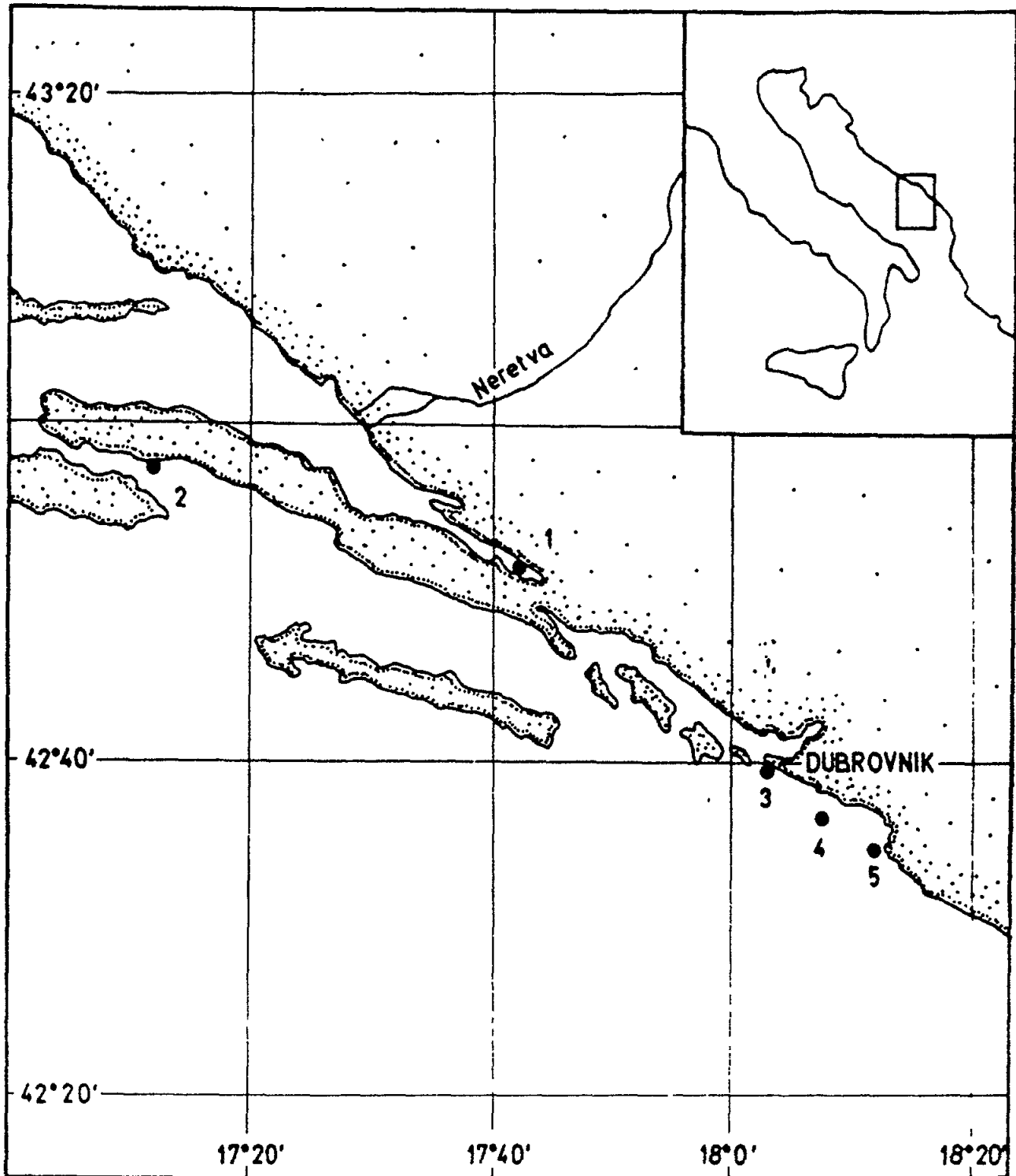


Fig. 14 Dubrovnik area - sampling stations

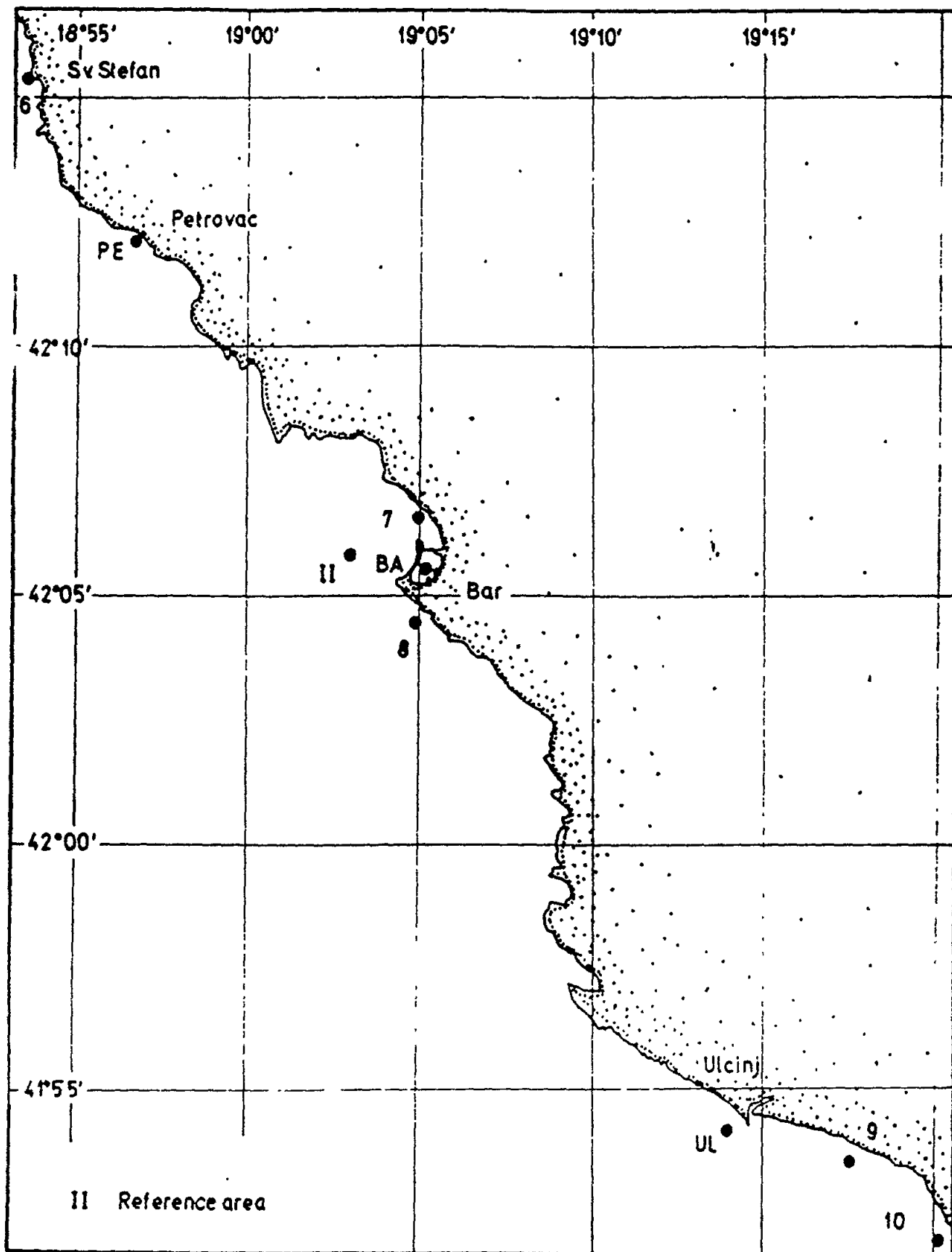


Fig. 15 Montenegrin coastal area - sampling stations

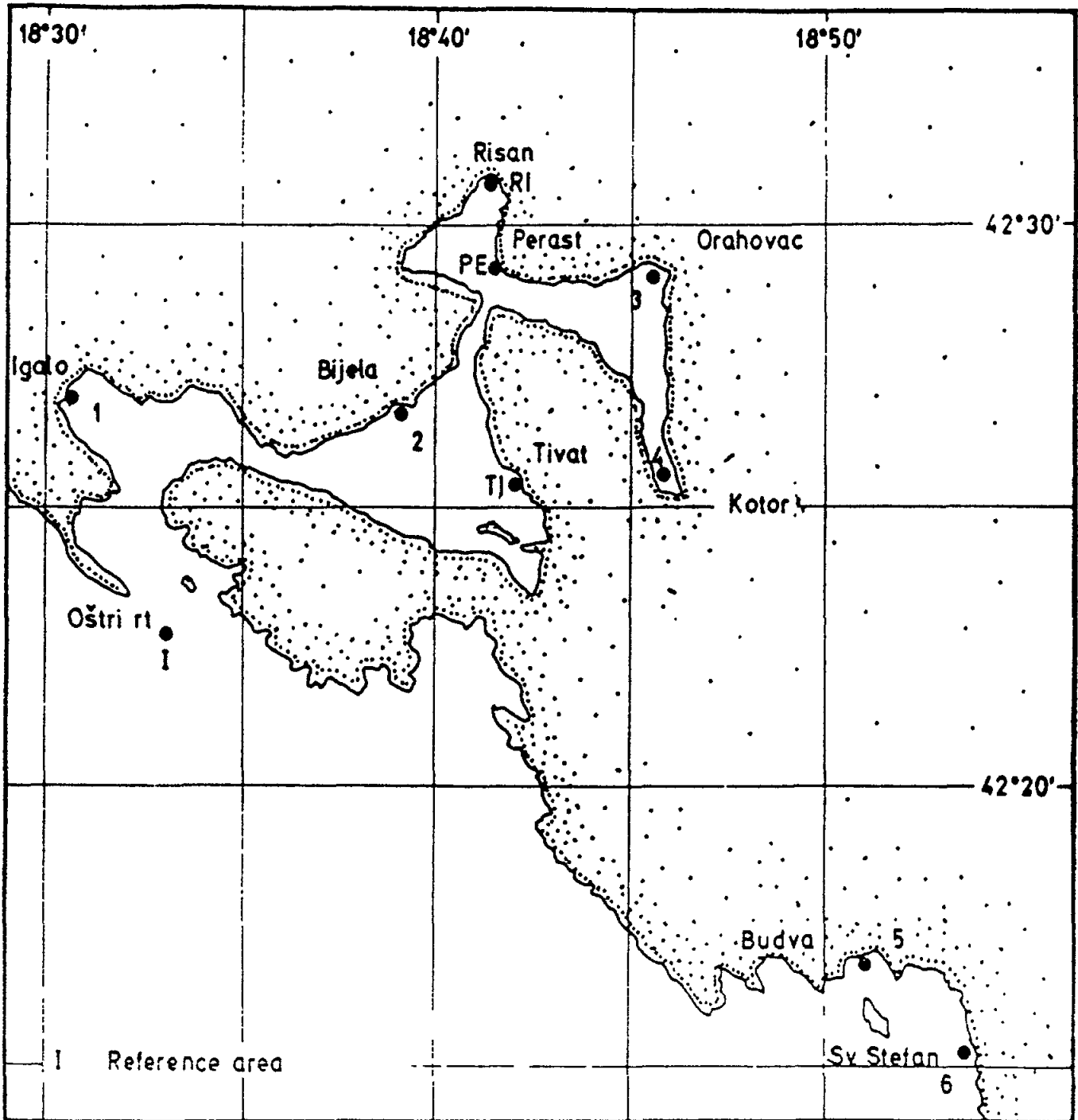


Fig. 16 Gulf of Kotor area - sampling stations

ANNEX IV

NUMBER OF SAMPLES FOR EFFLUENTS, SEA WATER,  
MARINE ORGANISMS AND SEDIMENT FOR DIFFERENT GROUPS  
OF PARAMETERS (1983 - 1986) OF THE YUGOSLAV  
NATIONAL MONITORING PROGRAMME

Table 1

Number of data of basic parameters and total nitrogen and phosphorus  
in the investigated areas in the period 1983-1986.

Type of samples	Parameters	Number of samples in areas:								
		I	II	III	IV	V	VI	VII	VIII	Total
<b>EFFLUENTS</b>										
	BOD	62	42	48	137	-	84	-	-	373
	COD	39	-	39	149	-	84	-	-	311
	TSS	61	42	48	148	-	84	-	-	383
	TN	62	18	48	84	-	84	-	-	296
	TP	62	30	48	84	-	84	-	-	308
<b>COASTAL WATER</b>										
	Basic param.	-	330 (240)	-	-	355	128	-	-	1053
	Nutrients	-	258 (200)	-	-	347	128	-	-	933
	TN	-	236 (200)	24	-	-	-	-	-	460
	TP	-	258 (200)	24	-	347	-	-	-	1289

Areas: I-Slovenian coast; II-Rovinj; III-Pula; IV-Rijeka; V-Sibenik; VI-Split; VII-Dubrovnik; VIII-Montenegrin coast; (-)-Open northern Adriatic.

Table 2

Number of microbial pollution data in the investigated areas in the period 1983-1986.

Type of samples	Number of samples in areas:								
	I	II	III	IV	V	VI	VII	VIII	Total
EFFLUENT	71	31	48	163	-	56	-	-	369
SEAWATER	1373	404	429	528	108	420	-	140	3402
MARINE ORG.	30	70	29	7	-	44	-	-	180

Areas: I-Slovenian coast; II-Rovinj; III-Pula; IV-Rijeka; V-Sibenik; VI-Split; VII-Dubrovnik; VIII-Montenegrin coast.

Table 3

Number of data of organic pollutants in the investigated areas  
in the period 1983-1986.

Samples and pollutants	Number of samples in areas:								
	I	II	III	IV	V	VI	VII	VIII	Total
<b>EFFLUENTS</b>									
DDTtotal	-	-	-	12	-	-	-	-	12
PCB	-	-	-	12	-	-	-	-	12
PH (as oil)	-	-	-	42	14	84	-	1	141
PH (as chrysene)	-	-	-	12	15	-	-	1	28
Phenols	-	-	48	138	-	84	-	6	276
Anionic detergents	59	-	48	158	10	84	-	6	365
<b>SEAWATER</b>									
PH (as oil)	-	-	-	-	64	12	-	2	78
PH (as chrysene)	-	-	-	-	59	41	-	2	102
Oil slick and other Floating materials	-	-	-	352	-	-	-	-	352
Phenols	-	-	-	-	-	-	-	30	30
Detergents	-	-	-	-	-	11	-	31	42
<b>SEDIMENTS</b>									
DDTtotal	-	16	5	-	14	-	3	17	55
PCB	-	16	5	-	14	-	3	17	55
PH (as oil)	-	-	-	-	15	4	-	-	19
PH (as chrysene)	-	-	-	-	15	12	-	-	27
<b>MUSSELS</b>									
DDTtotal	-	30	24	8	14	19	11	2	108
PCB	-	30	24	8	14	19	11	2	108
PH (as oil)	-	-	-	-	5	-	-	-	5
PH (as chrysene)	-	-	-	-	5	-	-	-	5
<b>ZOOPLANKTON</b>									
DDTtotal and PCB	-	12	-	-	-	-	-	-	12
<b>Total</b>	<b>59</b>	<b>104</b>	<b>154</b>	<b>742</b>	<b>258</b>	<b>370</b>	<b>28</b>	<b>117</b>	<b>1832</b>

Areas: I-Slovenian coast; II-Rovinj; III-Pula; IV-Rijeka; V-Sibenik; VI-Split;  
VII-Dubrovnik; VIII-Montenegrin coast.

Table 4

Number of data of heavy metal concentrations in the investigated areas in the period 1983-1986.

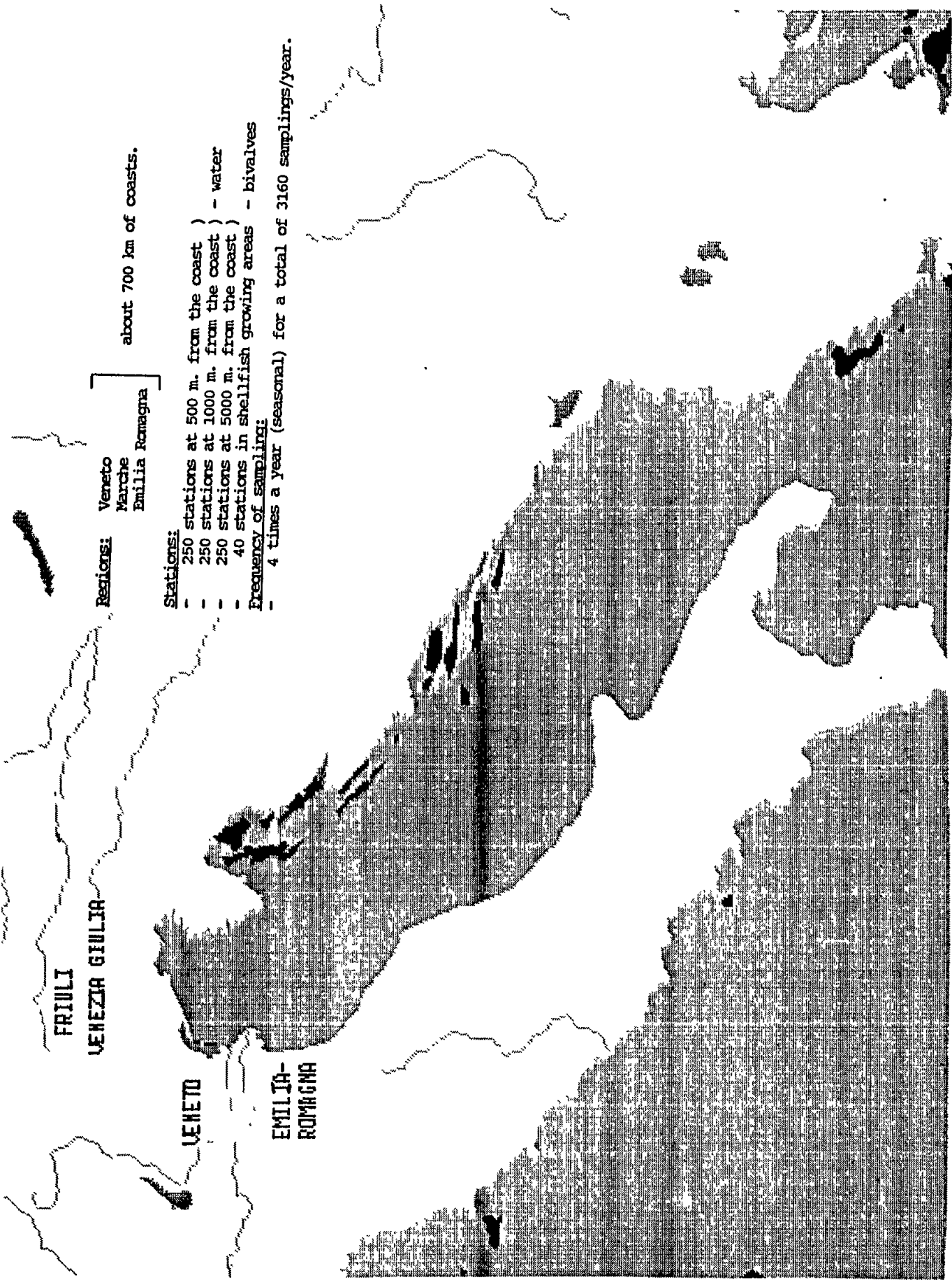
Type of samples	Metals	Number of samples in areas:								
		I	II	III	IV	V	VI	VII	VIII	Total
<b>EFFLUENT</b>										
	Hg	51	18	46	154	-	84	-	-	353
	Cd	51	22	46	88	11	80	-	-	298
	Pb	-	-	30	38	11	79	-	-	158
	Cr	-	-	-	-	-	83	-	-	83
	Zn	-	-	-	86	7	56	-	-	149
	Cu	-	-	14	-	7	-	-	-	21
<b>SUSPENDED MATTER</b>										
	Hg	95	-	-	-	-	-	-	-	95
	Cd	91	-	-	-	-	-	-	-	91
<b>SEAWATER</b>										
	Hg	-	-	-	-	52	-	25	5	82
	Cd	-	-	-	-	122	-	25	12	159
	Pb	-	-	-	-	95	-	32	12	139
	Zn	-	-	-	-	93	-	31	12	137
	Cu	-	-	-	-	96	-	30	12	138
<b>SEDIMENTS</b>										
	Hg	34	17	5	-	48	22	-	9	135
	Cd	-	-	5	-	58	20	-	17	100
<b>MARINE ORGANISMS</b>										
	Hg	53	45	26	8	79	33	55	-	299
	Cd	46	43	23	8	77	33	55	-	285

Areas: I-Slovenian coast; II-Rovinj; III-Pula; IV-Rijeka; V-Sibenik; VI-Split; VII-Dubrovnik; VIII-Montenegrin coast.



ANNEX V

MONITORING PROGRAMME OF ITALY IN THE ADRIATIC REGION  
OFFERED AS PART OF MED POL



about 700 km of coasts.

Regions: Veneto  
Marche  
Emilia Romagna

Stations:

- 250 stations at 500 m. from the coast )
  - 250 stations at 1000 m. from the coast ) - water
  - 250 stations at 5000 m. from the coast )
  - 40 stations in shellfish growing areas - bivalves
- Frequency of sampling:  
- 4 times a year (seasonal) for a total of 3160 samplings/year.

Monitoring Programme of Italy in the Adriatic Region, offered as part of MED POL

ANNEX VI

RESEARCH AND STUDY TOPICS OF MED POL-PHASE II

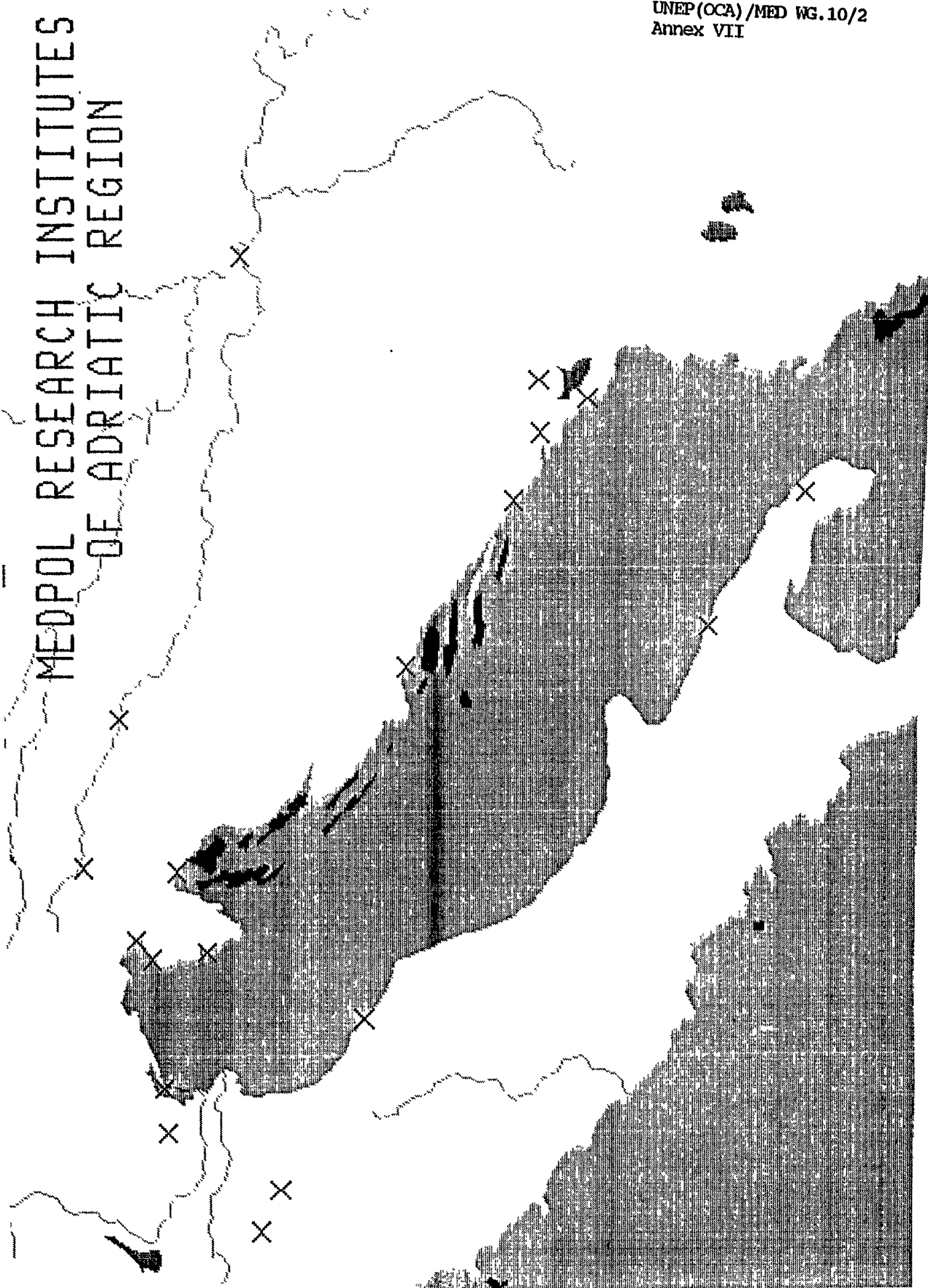
ANNEX VI  
RESEARCH AND STUDY OF TOPICS OF MED POL-PHASE II

- (a) Development of sampling and analytical techniques for monitoring the sources and levels of pollutants. Testing and harmonization of these methods at the Mediterranean scale and their formulation as reference methods. Substances listed in Dumping and Land-based Sources Protocol priorities.
- (b) Development of reporting formats required according to the Dumping, Emergency and Land-based Sources Protocols.
- (c) Formulation of the scientific rationale for the environmental quality criteria to be used in the development of emission standards, standards of use or guidelines for substances listed in annexes I and II of the Land-based Sources Protocol in accordance with Articles 5, 6 and 7 of that Protocol.
- (d) Epidemiological studies related to the confirmation (or eventual revision) of the proposed environmental quality criteria (standards of use) for bathing waters, shellfish-growing waters and edible marine organisms.
- (e) Development of proposals for guidelines and criteria governing the application of the Land-based Sources Protocol, as requested in Article 7 of that Protocol.
- (f) Research on oceanographic processes, with particular emphasis on surface circulation and vertical transport. Needed for the understanding of the distribution of pollutants through the Mediterranean and for the development of contingency plans for cases of emergency.
- (g) Research on the toxicity, persistence, bioaccumulation, carcinogenicity and mutagenicity of selected substances listed in annexes of the Land-based Sources Protocol and the Dumping Protocol.
- (h) Research on eutrophication and concomitant plankton blooms. Needed to assess the feasibility of alleviating the consequences and damage from such recurring blooms.
- (i) Study of ecosystem modifications in areas influenced by pollutants, and in areas where ecosystem modifications are caused by large-scale coastal or inland engineering activity.
- (j) Effects of thermal discharges on marine and coastal ecosystems, including the study of associated effects.
- (k) Biogeochemical cycle of specific pollutants, particularly those relevant to human health (mercury, lead, survival of pathogens in the Mediterranean Sea, etc).
- (i) Study of pollutant-transfer processes (i) at river/sea and air/sea interface, (ii) by sedimentation and (iii) through the straits linking the Mediterranean with other seas.

ANNEX VII

RESEARCH INSTITUTES IN THE ADRIATIC REGION  
WHICH PARTICIPATE IN MED POL-PHASE II PROGRAMME

MEDPOL RESEARCH INSTITUTES  
OF ADRIATIC REGION



ANNEX VII  
RESEARCH INSTITUTES IN THE ADRIATIC REGION  
WHICH PARTICIPATE IN THE MED POL-Phase II PROGRAMME  
(1981-1989)

ITALY

CIMAM: LABORATORY OF MARINE BIOLOGY - CIMAM, TRIESTE  
CNRBO: ISTITUTO DI GEOLOGIA MARINA, CNR, BOLOGNA  
GMVEN: ISTITUTO PER LO STUDIO DELLA DINAMICA DELLE GRANDI MASSE,  
VENEZIA  
IBMVE: ISTITUTO DI BIOLOGIA DEL MARE, CNR, VENEZIA  
ICGIV: ISTITUTO CHIMICA GENERALE ED INORGANICA SEZIONE  
MINERALOGICA, VENEZIA  
ITTRI: ISTITUTO TALASSOGRAFICO DI TRIESTE, TRIESTE  
MPIBA: LABORATORY OF MARINE BIOLOGY, MOLO PIZZOLI, BARI  
UBRIZ: ISTITUTO DI ZOOLOGIA E ANATOMIA COMPARATA, UNIVERSITA DI  
BARI, BARI  
ULEBD: BIOLOGY DEPARTMENT, UNIVERSITY OF LECCE, LECCE  
UMOOG: OSSERVATORIO GEOFISICO, UNIVERSITA DI MODENA, MODENA  
UPADP: DEPARTMENT OF PEDIATRICS, UNIVERSITY OF PADUA, PADUA  
UPAIH: INSTITUTE OF HYGIENE, UNIVERSITY OF PADOVA, PADOVA  
UPDBA: DIPARTIMENTO DI BIOLOGIA, UNIVERSITA DI PADOVA, PADOVA  
UPDIH: INSTITUTE OF HYGIENE, UNIVERSITY OF PADOVA, PADOVA  
UIRCD: ISTITUTO DI CLINICA DERMATOLOGICA, UNIVERSITA DI TRIESTE,  
TRIESTE  
UIRFF: ISTITUTO DI FARMACOLOGIA E FARMACOGNOSIA, UNIVERSITA DI  
TRIESTE, TRIESTE  
UVESA: DIPARTIMENTO DI SCIENZE AMBIENTALI, UNIVERSITA DI VENEZIA,  
VENEZIA

YUGOSLAVIA

BIDUB: BIOLOGICAL INSTITUTE, DUBROVNIK  
CMRRO: CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE,  
ROVINJ  
CMRZA: CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE,  
ZAGREB  
FHIBL: FEDERAL HYDROMETEOROLOGICAL INSTITUTE, BELGRADE  
IJSLJ: INSTITUTE JOSEF STEFAN, UNIVERSITY E. KARDELJ, LJUBLJANA  
IOFSP: INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT  
IPHZA: INSTITUTE OF PUBLIC HEALTH OF SR CROATIA, ZAGREB  
IRBDP: DEPARTMENT OF PHYSICS, RUDJER BOSKOVIC INSTITUTE, ZAGREB  
IRBPC: PHYSICAL CHEMISTRY DEPARTMENT, RUDJER BOSKOVIC INSTITUTE,  
ZAGREB  
MCPUL: MEDICAL CENTRE, PULA  
MECDU: MEDICAL CENTRE, DUBROVNIK  
MRICP: MARINE RESEARCH AND TRAINING CENTRE, PIRAN  
SMZAG: INST. FOR DIABETES, SCHOOL OF MEDICINE, ZAGREB  
UBEIC: INSTITUTE OF CHEMISTRY, UNIVERSITY OF BELGRADE, BELGRADE  
UKALJ: INSTITUTE OF BIOLOGY, UNIVERSITY EDVARD KARDELJ, LJUBLJANA  
UTITO: UNIVERSITY "VELJKO VLAHOVIC", TITOGRAD  
UZANS: FACULTY OF NATURAL SCIENCES AND MATHEMATICS, UNIVERSITY OF  
ZAGREB, ZAGREB

ANNEX VIII

RESEARCH PROJECTS IN THE FRAME OF MED POL  
ITALY  
(ADRIATIC REGION)



RESEARCH PROJECTS  
(1982-1989)  
ITALY (ADRIATIC REGION)

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- FAO ITA- 94-I G. BRESSAN  
LABORATORY OF MARINE BIOLOGY - CIMAM, TRIESTE  
CIMAM  
MONITORAGE DES PHANEROGAMES MARINES DU GOLFE DE TRIESTE: ANALYSE DES VARIATIONS DE L'ECOSYSTEME
- 
- FAO ITA-110-I G. BRESSAN  
LABORATORY OF MARINE BIOLOGY - CIMAM, TRIESTE  
CIMAM  
INTERCALIBRATIONS ESPACE-TEMPORELLES EN MICROECOSYSTEMES LITORAUX BENIHIQUES
- 
- FAO ITA-118-H S. FONDA UMANI  
LABORATORY OF MARINE BIOLOGY - CIMAM, TRIESTE  
CIMAM  
PERIODICITY OF THE MICRO-PLANKTON BLOOMS IN EUTROPHICATED AREAS IN THE GULF OF TRIESTE (NORTH ADRIATIC SEA)
- 
- FAO ITA-119-H E. GHIRARDELLI  
LABORATORY OF MARINE BIOLOGY - CIMAM, TRIESTE  
CIMAM  
MONITORAGE BIOLOGIQUE DES EAUX DU GOLFE DE TRIESTE (ADRIATIQUE SEPTENTRIONALE); PRODUCTION SECONDAIRE PLANCTONIQUE
- 
- UNEP ITA- 51-Z A. LONGINELLI  
LABORATORY OF MARINE BIOLOGY - CIMAM, TRIESTE  
CIMAM  
STABLE ISOTOPE RESEARCH ( $^{18}\text{O}/^{16}\text{O}$ , D/H AND  $^{13}\text{C}/^{12}\text{C}$ ) AS A NEW TOOL FOR STUDYING THE RELATIONSHIPS BETWEEN SOME ENVIRONMENTAL PARAMETERS AND THE BEHAVIOUR OF JELLYFISH
- 
- IAEA ITA- 71-K A. LONGINELLI  
LABORATORY OF MARINE BIOLOGY - CIMAM, TRIESTE  
CIMAM  
STABLE ISOTOPE ENVIRONMENTAL CONDITIONS
- 
- FAO ITA-120-H L. ROTTINI SANDRINI  
LABORATORY OF MARINE BIOLOGY - CIMAM, TRIESTE  
CIMAM  
MONITORAGE ET ELABORATION DE DONNEES DE MACROPLANKTON GELATINEUX DANS LE GOLFE DE TRIESTE (ADRIATIQUE SEPTENTRIONALE)
- 
- UNEP ITA- 42-Z L. ROTTINI-SANDRINI  
LABORATORY OF MARINE BIOLOGY - CIMAM, TRIESTE  
CIMAM  
MONITORAGE DES MEDUSES EN ADRIATIQUE ET DOMMAGE A LA PECHE
-

UNEP ITA- 43-Z L. ROTTINI-SANDRINI  
LABORATORY OF MARINE BIOLOGY - CIMAM, TRIESTE  
CIMAM

ETUDE ECOLOGIQUE EXPERIMENTALE DE Pelagia noctiluca

FAO ITA- 81-H L. ROTTINI-SANDRINI  
LABORATORY OF MARINE BIOLOGY - CIMAM, TRIESTE  
CIMAM

PERIODICITY AND CAUSES OF IRREGULAR MACRO-AND MICRO-PLANKTON BLOOMS APPEARING  
IN EUTROPHICATED AREAS IN NORTHERN ADRIATIC AND GULF OF TRIESTE

IOC ITA-112-F F. STRAVISI  
LABORATORY OF MARINE BIOLOGY - CIMAM, TRIESTE  
CIMAM

SURFACE TRANSPORT IN THE GULF OF TRIESTE - "STRAGUTS"

WMO ITA- 63-L S. GUERZONI  
ISTITUTO DI GEOLOGIA MARINA, CNR, BOLOGNA  
CNRBO

RIVERINE AND ATMOSPHERIC TRANSPORT OF DUSTS AND CONTAMINANTS INTO THE  
MEDITERRANEAN REGION

IAEA ITA- 85-A S. GUERZONI  
ISTITUTO DI GEOLOGIA MARINA, CNR, BOLOGNA  
CNRBO

DEVELOPMENT AND TESTING OF LARGE-VOLUME SAMPLING AND ANALYTICAL TECHNIQUES  
FOR TRACE METALS IN SUSPENDED AND BOTTOM SEDIMENTS (FOR MONITORING OF MARINE  
POLLUTANTS)

IOC ITA-103-L S. GUERZONI  
ISTITUTO DI GEOLOGIA MARINA, CNR, BOLOGNA  
CNRBO

TRANSPORT OF POLLUTANTS BY SEDIMENTATION

IOC ITA- 2-F M. ASTRALDI  
ISTITUTO PER LO STUDIO DELLA DINAMICA DELLE GRANDI MASSE, VENEZIA  
GMVEN

DYNAMIC CONDITION IN THE EASTERN LIGURIAN SEA

IOC ITA-108-F A. BERGAMASCO  
ISTITUTO PER LO STUDIO DELLA DINAMICA DELLE GRANDI MASSE, VENEZIA  
GMVEN

MODELLING OF CIRCULATION PROCESSES WITH PASSIVE TRACERS IN THE NORTHERN  
ADRIATIC SEA

IOC ITA- 12-F P. MALANOTTE-RIZZOLI  
ISTITUTO PER LO STUDIO DELLA DINAMICA DELLE GRANDI MASSE, VENEZIA  
GMVEN

MODELLING OF CIRCULATION PROCESSES IN THE NORTHERN ADRIATIC AND THEIR INFLUENCE  
ON THE DISTRIBUTION OF POLLUTANTS CONSIDERED AS PASSIVE SCALARS

- IOC ITA- 35-L F. COSTA  
ISTITUTO DI BIOLOGIA DEL MARE, CNR, VENEZIA  
IBMVE  
FLOW OF POLLUTANTS (NUTRIENTS AND HEAVY ELEMENTS) INTO THE LAGOON OF VENICE FROM  
NATURAL AND AGRICULTURAL RIVERS
- 
- FAO ITA- 21-G L. DALLA VENEZIA  
ISTITUTO DI BIOLOGIA DEL MARE, CNR, VENEZIA  
IBMVE  
PHYSIOLOGICAL AND BIOCHEMICAL RESPONSE OF MARINE ORGANISMS TO PCB POLLUTION  
IN A WIDE RANGE OF ENVIRONMENTAL FACTORS
- 
- FAO ITA- 65-G L. DALLA VENEZIA  
ISTITUTO DI BIOLOGIA DEL MARE, CNR, VENEZIA  
IBMVE  
STUDY OF OSMOREGULATION MECHANISMS IN MARINE INVERTEBRATES UNDER POLLUTION  
CONDITIONS
- 
- FAO ITA- 57-A V. U. FOSSATO  
ISTITUTO DI BIOLOGIA DEL MARE, CNR, VENEZIA  
IBMVE  
TESTING OF THE METHOD OF ANALYSIS OF DDTs AND PCBS IN MARINE ORGANISMS
- 
- IAEA ITA- 3-L O. HIEKE MERLIN (SEE ALSO ITA/32-L)  
ISTITUTO CHIMICA GENERALE ED INORGANICA SEZIONE MINERALOGICA, VENEZIA  
ICGIV  
TEXTURAL AND MINERALOGICAL CHARACTERS AND ROLE IN THE POLLUTION PROCESSES  
OF BOTTOM SEDIMENTS IN THE NORTHERN ADRIATIC SEA
- 
- IOC ITA- 5-F F. STRAVISI  
ISTITUTO TALASSOGRAFICO DI TRIESTE, TRIESTE  
ITTRI  
COASTAL DYNAMIC PROCESSES AND SURFACE TRANSPORT IN THE GULF OF TRIESTE (NORTHERN  
ADRIATIC) - "DYGUTS"
- 
- UNEP ITA- 45-Z F. STRAVISI  
ISTITUTO TALASSOGRAFICO DI TRIESTE, TRIESTE  
ITTRI  
STUDY ON THE CLIMATIC VARIATIONS IN NORTHERN ADRIATIC DURING THE LAST CENTURY  
AND THEIR ROLE ON MARINE PHENOMENA
- 
- IOC ITA- 90-F F. STRAVISI  
ISTITUTO TALASSOGRAFICO DI TRIESTE, TRIESTE  
ITTRI  
A REVISION OF THE CLIMATOLOGICAL SERIES IN THE NORTHERN ADRIATIC WITH RESPECT TO  
OCEANOGRAPHIC PROCESSES
- 
- UNEP ITA- 44-Z F. STRAVISI  
ISTITUTO TALASSOGRAFICO DI TRIESTE, TRIESTE  
ITTRI  
WATER CIRCULATION AND TRANSPORT IN NE ADRIATIC
-

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FAO ITA-106-H G. MARANO  
LABORATORY OF MARINE BIOLOGY, MOLO PIZZOLI, BARI  
MONITORING OF MACROPLANKTON AGGREGATION IN THE SOUTHERN ADRIATIC SEA  
MPIBA

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UNEP ITA- 58-Z L. SCALERA-LIACI  
ISTITUTO DI ZOOLOGIA E ANATOMIA COMPARATA, UNIVERSITA DI BARI, BARI  
JELLYFISH IN THE MEDITERRANEAN SEA  
UBRIZ

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FAO ITA- 92-H L. SCALERA-LIACI  
ISTITUTO DI ZOOLOGIA E ANATOMIA COMPARATA, UNIVERSITA DI BARI, BARI  
ANALYSIS OF REPRODUCTIVE CAPACITY OF MACROPLANKTON BLOOMS  
UBRIZ

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FAO ITA- 93-H F. BOERO  
BIOLOGY DEPARTMENT, UNIVERSITY OF LECCE, LECCE  
ACTIVITY, BEHAVIOUR AND DIET OF JELLYFISH ALONG THE LIGURIAN COAST  
ULEBD

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WMO ITA- 34-L R. CECCHI  
OSSERVATORIO GEOFISICO, UNIVERSITA DI MODENA, MODENA  
TRANSFER OF POLLUTANTS FROM THE ATMOSPHERE TO THE NORTHERN ADRIATIC SEA AND TO  
THE NORTHERN TYRRHENIAN SEA  
UMOOG

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IAEA ITA- 70-A R. CECCHI  
OSSERVATORIO GEOFISICO, UNIVERSITA DI MODENA, MODENA  
EXPERIMENTAL PROGRESSES IN HEAVY METALS PIXE ANALYSIS IN SEAWATERS  
UMOOG

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IOC ITA- 33-F R. SANTANGELO  
OSSERVATORIO GEOFISICO, UNIVERSITA DI MODENA, MODENA  
APPROXIMATE MODELS FOR THE NORTHERN ADRIATIC SEA AND EXPERIMENTAL CHECKS OF  
CURRENTS IN FIXED POINTS  
UMOOG

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IOC ITA- 73-L R. SANTANGELO  
OSSERVATORIO GEOFISICO, UNIVERSITA DI MODENA, MODENA  
BOX MODEL FOR EVOLUTION OF METALS IN MEDITERRANEAN SEA  
UMOOG

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IOC ITA- 86-F R. SANTANGELO  
OSSERVATORIO GEOFISICO, UNIVERSITA DI MODENA, MODENA  
LONGSHORE CURRENTS  
UMOOG

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IOC	ITA-121-F	R. SANTANGELO	
OSSERVATORIO GEOFISICO, UNIVERSITA DI MODENA, MODENA			
INCLUSION OF MICROWAVE SENSORS IN OCEAN MODELLING			UMOOG

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WHO	ITA-114-D	B. PACCAGNELLA	
DEPARTMENT OF PEDIATRICS, UNIVERSITY OF PADUA, PADUA			
HEALTH EFFECTS OF FOETAL AND NEONATAL EXPOSURE TO METHYLMERCURY VIA BREAST-FEEDING			UPADP

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WHO	ITA-122-D	B. PACCAGNELLA	
DEPARTMENT OF PEDIATRICS, UNIVERSITY OF PADUA, PADUA			
EPIDEMIOLOGICAL STUDIES ON CADMIUM AND OTHER HEAVY METALS (PB, CR, NI, ZN, SN) IN FISH AND HUMAN HEALTH IN THE MEDITERRANEAN AREA			UPADP

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WHO	ITA-115-D	G. MORETTI	
INSTITUTE OF HYGIENE, UNIVERSITY OF PADOVA, PADOVA			
STUDY ON THE MERCURY, METHYLMERCURY AND SELENIUM LEVELS IN THE NORTH-EAST ITALIAN COASTAL POPULATIONS			UPAIH

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FAO	ITA- 27-G	V. ALBERGONI	
DIPARTIMENTO DI BIOLOGIA, UNIVERSITA DI PADOVA, PADOVA			
TOXIC EFFECTS AND METABOLISM OF HEAVY METALS			UPDBA

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FAO	ITA- 64-G	V. ALBERGONI	
DIPARTIMENTO DI BIOLOGIA, UNIVERSITA DI PADOVA, PADOVA			
BIOACCUMULATION STUDIES AND PHYSIOLOGICAL AND BIOCHEMICAL RESPONSES IN MARINE ORGANISMS EXPOSED TO HEAVY METALS AND POLYCHLORINATED BIPHENYLS			UPDBA

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WHO	ITA-107-D	V. MARIN	
INSTITUTE OF HYGIENE, UNIVERSITY OF PADOVA, PADOVA			
STUDIES ON THE WATER QUALITY OF THE NORTH ADRIATIC SEA AND ITS EFFECT ON PUBLIC HEALTH			UPDIH

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UNEP	ITA- 47-Z	C. SCARPA	(FOR 1986 SEE WHO ITA/47-D)
ISTITUTO DI CLINICA DERMATOLOGICA, UNIVERSITA DI TRIESTE, TRIESTE			
ANTIBIODES FOR SKIN INJURIES INFLECTED ON HUMANS BY PELAGIA NOCTILUCA			UIRCD

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WHO	ITA- 47-D	C. SCARPA	(FOR 1985 SEE UNEP ITA/47Z)
ISTITUTO DI CLINICA DERMATOLOGICA, UNIVERSITA DI TRIESTE, TRIESTE			
ANTIBIODES FOR SKIN INJURIES INFLECTED ON HUMANS BY PELAGIA NOCTILUCA			UIRCD

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WHO ITA-123-D C. SCARPA  
ISTITUTO DI CLINICA DERMATOLOGICA, UNIVERSITA DI TRIESTE, TRIESTE

UITRCD

A TOXICOLOGIC STUDY OF JELLYFISH ENVENOMATION

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WHO ITA- 46-D R. DELLA LOGGIA (FOR 1985 SEE UNEP ITA/46Z)  
ISTITUTO DI FARMACOLOGIA E FARMACOGNOSIA, UNIVERSITA DI TRIESTE, TRIESTE

UIRFF

THE POTENTIAL TOXICITY OF BLOOMS IN RELATION TO THEIR BIOCHEMICAL COMPOSITION

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UNEP ITA- 46-Z R. DELLA LOGGIA (FOR 1986 SEE WHO ITA/46-D)  
ISTITUTO DI FARMACOLOGIA E FARMACOGNOSIA, UNIVERSITA DI TRIESTE, TRIESTE

UIRFF

INDIVIDUATION AND TOXICOLOGICAL EVALUATION OF THE DERMATOTOXIC PRINCIPLES  
OF PELAGIA NOCTILUCA AND OTHER MEDUSAE

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WHO ITA-125-D R. DELLA LOGGIA  
ISTITUTO DI FARMACOLOGIA E FARMACOGNOSIA, UNIVERSITA DI TRIESTE, TRIESTE

UIRFF

THE CUTANEOUS TOXICITY OF BLOOMS IN RELATION TO THEIR HEALTH HAZARD

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IOC ITA- 37-L A. A. ORIO  
DIPARTIMENTO DI SCIENZE AMBIENTALI, UNIVERSITA DI VENEZIA, VENEZIA

UVESA

TRANSPORT MECHANISMS OF POLLUTANTS AT THE SEDIMENT-WATER INTERFACE

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IAEA ITA- 98-K A. A. ORIO  
DIPARTIMENTO DI SCIENZE AMBIENTALI, UNIVERSITA DI VENEZIA, VENEZIA

UVESA

THE TRANSPORT AND FATE OF CONTAMINANTS IN A LAGOON ECOSYSTEM: THE VENICE LAGOON  
CASE STUDY

ANNEX IX  
RESEARCH PROJECTS IN THE FRAME OF MED POL  
YUGOSLAVIA

RESEARCH PROJECTS  
(1982-1989)  
YUGOSLAVIA

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FAO YUG- 7-I A. BENOVIC BIOLOGICAL INSTITUTE, DUBROVNIK	BIDUB
INVESTIGATION OF ZOOPLANKTON COMMUNITIES IN THE NORTHERN ADRIATIC SEA	
UNEP YUG- 30-Z A. BENOVIC BIOLOGICAL INSTITUTE, DUBROVNIK	BIDUB
INVESTIGATION OF JELLYFISH (MEDUSAE) IN THE SOUTHERN ADRIATIC	
FAO YUG- 31-H F. KRSINIC BIOLOGICAL INSTITUTE, DUBROVNIK	BIDUB
TOTAL DAY-NIGHT COMPOSITION OF ZOOPLANKTON IN THE BAY OF MALI STON NEAR DUBROVNIK	
FAO YUG- 56-I F. KRSINIC BIOLOGICAL INSTITUTE, DUBROVNIK	BIDUB
INFLUENCE OF SEWAGE ON TINFINNIDES IN THE BAY OF GRUZ (DUBROVNIK)	
FAO YUG- 46-H D. VILICIC BIOLOGICAL INSTITUTE, DUBROVNIK	BIDUB
RELATIONSHIP BETWEEN LAND-BASED SOURCES AND PLANKTON COMPOSITION AT THREE NEARSHORE STATIONS (DUBROVNIK, STON, SIBENIK) - EASTERN ADRIATIC	
FAO YUG- 69-H D. VILICIC BIOLOGICAL INSTITUTE, DUBROVNIK	BIDUB
PHYTOPLANKTON CELL VOLUME AND CARBON CONTENT AS INDICATIONS OF EUTROPHICATION IN THREE ECOLOGICALLY DIFFERENT AREAS OF THE ADRIATIC SEA	
WHO YUG- 71-G R. BATEL CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ	CMRRO
GENOTOXIC RISK ASSESSMENT IN THE MARINE ENVIRONMENT USING INVERTEBRATES AS INDICATOR ORGANISMS	
FAO YUG- 86-H D. DEGOBBIS CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ	CMRRO
EUTROPHICATION TRENDS IN THE NORTHERN ADRIATIC SEA	
FAO YUG- 96-G M. DEVESCOVI CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ	CMRRO
BASE-LINE STUDIES OF CADMIUM, COPPER AND LEAD CONCENTRATIONS IN SELECTED NORTHERN ADRIATIC BENTHIC ORGANISMS	



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WHO	YUG- 20-K D.	FUKS	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ			CMRRO
SURVIVAL OF SOME INTESTINAL PATHOGENS IN THE MARINE ENVIRONMENT			
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FAO	YUG- 57-G C.	LUCU	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ			CMRRO
INTERACTION OF METAL POLLUTANTS WITH GILL EPITHELIA OF MARINE ORGANISMS. TRANSPORT AND EFFECTS			
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FAO	YUG- 95-G C.	LUCU	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ			CMRRO
IMPAIRMENT OF PHYSIOLOGICAL PROCESSES IN MARINE ORGANISMS INDUCED BY TOXIC METALS			
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FAO	YUG- 21-G M.	OZRETTIC	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ			CMRRO
TOXICITY AND BIOACCUMULATION OF POLLUTANTS IN MARINE ORGANISMS			
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FAO	YUG- 38-G M.	OZRETTIC	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ			CMRRO
TOXICITY OF POLLUTANTS TO MARINE ORGANISMS: PHYSIOLOGICAL AND BIOCHEMICAL STUDIES			
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FAO	YUG- 53-G M.	OZRETTIC	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ			CMRRO
SERUM ENZYMES IN FISH AS BIOCHEMICAL INDICATORS OF MARINE POLLUTION			
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FAO	YUG- 70-G B.	OZRETTIC	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ			CMRRO
DEVELOPMENT OF SHORT-TERM TOXICITY TESTS: THE USE OF SEA URCHIN GAMETES AND THEIR DEVELOPMENTAL STAGES			
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FAO	YUG- 94-G M.	OZRETTIC	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ			CMRRO
OCCURENCE OF ARSENIC AND CADMIUM IN MARINE ORGANISMS FROM VARIOUS NORTHERN ADRIATIC SITES AND THEIR TOXICITY			
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FAO	YUG- 54-H R.	PRECALI	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ			CMRRO
EFFECTS OF LIGHT ON THE PATHWAYS OF CARBON ASSIMILATION IN THE RELATION TO GROWTH RATE FOR NATURAL POPULATIONS OF MARINE PHYTOPLANKTON			

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IAEA YUG- 77-A M. SKREBLIN  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ

CMRRO

OPTIMIZATION OF PROCEDURES FOR THE DETERMINATION OF MERCURY IN ENVIRONMENTAL  
SAMPLES USING THE M-511 GOLD FILM MERCURY ANALYZER

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FAO YUG- 19-I D. ZAVODNIK  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ

CMRRO

MONITORING OF ECOSYSTEMS MODIFICATIONS IN THE NORTHERN ADRIATIC SEA INDUCED BY  
EUTROPHICATION AND ANIHROPOGENIC ACTIVITIES

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FAO YUG- 37-H D. ZAVODNIK  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ

CMRRO

MONITORING OF ECOSYSTEMS MODIFICATIONS IN THE NORTHERN ADRIATIC SEA INDUCED BY  
EUTROPHICATION AND ANIHROPOGENIC ACTIVITIES

---

UNEP YUG- 39-Z D. ZAVODNIK  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ

CMRRO

MONITORING OF JELLYFISH PELAGIA NOCTILUCA ALONG THE WEST ISTRIAN RIVIERA  
(NORTHERN ADRIATIC)

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FAO YUG- 92-H N. ZAVODNIK  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ

CMRRO

A CENTURY OF ALTERATIONS IN NORTHERN ADRIATIC SHALLOW WATER COMMUNITIES

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FAO YUG- 93-H D. ZAVODNIK  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ

CMRRO

PHYTOPLANKTON BLOOM CONSEQUENCES ON BENTHIC ORGANISMS

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IAEA YUG- 11-K M. BRANICA  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

ANTHROPOGENIC INFLUENCE ON THE DISTRIBUTION AND FLUXES OF LEAD SPECIES INTO THE  
MARINE ENVIRONMENT

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IOC YUG- 17-A M. BRANICA  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

DEVELOPMENT OF ELECTROCHEMICAL TECHNIQUES AND THEIR APPLICATION IN LABORATORY  
AND "ON BOARD" FOR DETERMINATION AND SPECIATION OF HEAVY METALS IN THE  
MEDITERRANEAN

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IAEA YUG- 61-A M. BRANICA  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

DEVELOPMENT OF ELECTROCHEMICAL TECHNIQUES AND THEIR APPLICATION FOR  
DETERMINATION AND SPECIATION OF HEAVY TRACE METALS (CD, PB, ETC.) IN SEAWATER

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FAO	YUG- 64-K	M. BRANICA	CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB	CMRZA
BIOGEOCHEMICAL CYCLE OF MERCURY SPECIES IN THE MARINE ENVIRONMENT				
IOC	YUG- 18-A	B. COSOVIC	CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB	CMRZA
DEVELOPMENT OF NEW ELECTROANALYTICAL TECHNIQUES FOR DETERMINATION OF SURFACE ACTIVE SUBSTANCES AND DETERGENTS IN SEAWATER AND SEA SURFACE MICROLAYER				
IAEA	YUG- 41-L	B. COSOVIC	CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB	CMRZA
STUDY OF THE PHYSICO-CHEMICAL INTERACTIONS OF NATURAL AND ARTIFICIAL SURFACE ACTIVE SUBSTANCES WITH TOXIC SUBSTANCES IN THE SEA				
IAEA	YUG- 85-K	B. COSOVIC	CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB	CMRZA
OCCURRENCE, FATE AND EFFECTS OF SYNTHETIC SURFACTANTS IN THE MARINE ENVIRONMENT				
IAEA	YUG- 65-L	M. JURACIC	CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB	CMRZA
POLLUTANT TRANSFER PROCESSES: THE ROLE OF SUSPENDED MATTER AND SEDIMENTS IN THE LAND-TO-SEA TRANSPORT IN A KARSTIC ESTUARY				
WHO	YUG- 14-G	B. KURELEC	CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB	CMRZA
THE CORRELATION BETWEEN LEVELS AND EFFECTS OF MUTAGENIC POLLUTANTS IN THE MARINE ENVIRONMENT				
IOC	YUG- 15-F	M. KUZMIC	CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB	CMRZA
MATHEMATICAL MODELLING OF HORIZONTAL CIRCULATION AND VERTICAL DISTRIBUTION OF CURRENTS IN THE NORTHERN ADRIATIC				
FAO	YUG- 13-H	T. LEGOVIC	CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB	CMRZA
MODELLING EUTROPHICATION PROCESSES IN THE NORTHERN ADRIATIC				
UNEP	YUG- 32-Z	T. LEGOVIC	CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB	CMRZA
SWARMING AND TRANSPORT OF PELAGIA NOCTILUCA IN THE ADRIATIC SEA				

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IOC YUG- 79-F T. LEGOVIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

RECONSTRUCTION OF A CURRENT FIELD AND CONCENTRATION FIELD OF A POLLUTANT IN  
COASTAL SEA USING MICROCOMPUTER

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FAO YUG- 82-H T. LEGOVIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

LONG-TERM EUTROPHICATION OF THE NORTHERN ADRIATIC SEA: EVIDENCE AND CONTROL

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FAO YUG- 76-I A. Z. LOVRIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

ECOLOGICAL MAPPING OF PHYTO-INDICATORS OF COASTAL POLLUTION INDUCED DEGRADATION  
ALONG THE EAST ADRIATIC COAST, ISLANDS AND ESTUARIES

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FAO YUG- 72-G J. PAVICIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

METAL-BINDING PROTEINS SIMILAR TO METALLOTHIONEINS AS A POTENTIAL INDICATOR OF  
METAL POLLUTION

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FAO YUG- 89-G J. PAVICIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

FIELD EVALUATION OF METAL-BINDING PROTEINS OF MYTILUS GALLOPROVINCIALIS IN  
ASSESSING TRACE METAL POLLUTION OF MARINE ENVIRONMENT

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FAO YUG- 16-A M. PICER  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

IMPROVEMENTS AND TESTING OF THE METHODS OF ANALYSIS FOR CHLORINATED AND  
PETROLEUM HYDROCARBONS IN WATER AND SEDIMENTS

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IOC YUG- 62-A M. PICER  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

IMPROVEMENTS AND TESTING OF THE METHODS OF ANALYSIS OF PETROLEUM HYDROCARBONS  
IN WATER, SEDIMENTS AND MUSSELS BY SPECTROFLUOROMETRY

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IAEA YUG- 10-L V. PRAVDIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

THE ROLE OF SEDIMENTS AND SUSPENDED MATTER IN THE TRANSFER OF SELECTED  
POLLUTANTS IN THE NORTHERN ADRIATIC BASIN

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FAO YUG- 12-J V. PRAVDIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

DEVELOPMENT OF SCIENTIFIC CRITERIA FOR A CODE-OF-GOOD-PRACTICE IN SITING OF  
THERMAL EFFLUENTS IN THE MEDITERRANEAN REGION

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WHO YUG- 63-C V. PRAVDIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

DEVELOPMENT OF MODELS FOR CALCULATION OF ENVIRONMENTAL CAPACITY OF SEAWATER IN  
THE MEDITERRANEAN

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IAEA YUG- 90-A B. RASPOR  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

DEVELOPMENT OF NEW METHOD FOR THE ESTIMATION OF SEAWATER POLLUTION WITH TRACE  
METALS

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FAO YUG- 8-H V. ZUTIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

RELATIONSHIP BETWEEN PHYTOPLANKTON BLOOMS AND DISSOLVED ORGANIC MATTER IN THE  
NORTHERN ADRIATIC

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IOC YUG- 33-L V. ZUTIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

VERTICAL TRANSPORT OF POLLUTANTS IN THE ESTUARY: THE IMPORTANCE OF ORGANIC  
AGGREGATES

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IOC YUG- 81-L V. ZUTIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

POLLUTANT ACCUMULATION AT THE HALOCLINE OF MEDITERRANEAN STRATIFIED ESTUARIES

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FAO YUG- 87-H V. ZUTIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

EUTROPHICATION PROCESSES IN THE KRKA ESTUARY (ADRIATIC SEA)

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WMO YUG- 29-L Z. I. JANJIC  
FEDERAL HYDROMETEOROLOGICAL INSTITUTE, BELGRADE

FHIBL

DEFINITION OF SYNOPTIC SCALE DRIVING PARAMETERS FOR A MODEL OF ATMOSPHERIC  
POLLUTION TRANSPORT TOWARDS AND INTO THE MEDITERRANEAN SEA

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WMO YUG- 80-L Z. I. JANJIC  
FEDERAL HYDROMETEOROLOGICAL INSTITUTE, BELGRADE

FHIBL

PRELIMINARY STUDY OF POTENTIAL LONG-RANGE CADMIUM TRANSPORT FROM MAJOR  
IDENTIFIED SOURCES IN EUROPE INTO THE MEDITERRANEAN REGION

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IAEA YUG- 74-K M. HORVAT  
INSTITUTE JOSEF STEEFAN, UNIVERSITY E. KARDELJ, LJUBLJANA

IJSLJ

ESTABLISHMENT OF MERCURY LEVELS IN THE ADRIATIC SEA

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IAEA	YUG- 75-K	K. JUZNIC	
INSTITUTE JOSEF STEFAN, UNIVERSITY E. KARDELJ, LJUBLJANA			IJSLJ
DISTRIBUTION OF CS-137 AND SR-90 IN ADRIATIC MARINE ORGANISMS AND SEDIMENTS AFTER THE CHERNOBYL ACCIDENT			
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WHO	YUG- 28-D	P. STEGNAR	
INSTITUTE JOSEF STEFAN, UNIVERSITY E. KARDELJ, LJUBLJANA			IJSLJ
ANALYSIS OF HUMAN HAIR FOR ASSESSING EXPOSURE AND POSSIBLE HEALTH HAZARDS IN MEDITERRANEAN POPULATIONS DUE TO METHYLMERCURY IN SEAFOOD			
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WHO	YUG- 79-D	P. STEGNAR	
INSTITUTE JOSEF STEFAN, UNIVERSITY E. KARDELJ, LJUBLJANA			IJSLJ
ANALYSIS OF HUMAN HAIR AND OTHER TISSUES ON BEHALF OF INSTITUTIONS PARTICIPATING IN MEDITERRANEAN METHYLMERCURY PROJECT			
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IOC	YUG- 55-F	M. BONE	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
STUDY OF THE INFLUENCE OF ATMOSPHERIC VORTICITY ON TRANSPORT PROCESSES IN THE NORTH ADRIATIC			
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IOC	YUG- 6-F	M. GACIC	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
LOW-FREQUENCY CURRENT FIELD OSCILLATIONS IN THE COASTAL ZONE OF THE CENTRAL ADRIATIC			
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IOC	YUG- 68-F	M. GACIC	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
PHYSICAL OCEANOGRAPHY COMPONENT OF POLLUTION MONITORING			
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WHO	YUG- 67-C	N. KRSTULOVIC	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
COMPARISON OF FAECAL COLIFORM LEVELS IN MUSSEL FLESH AND FLESH/INTERVALVULAR FLUID			
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FAO	YUG- 3-H	I. MARASOVIC	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
EUTROPHICATION AND CONCOMITANT PLANKTON BLOOMS IN THE COASTAL AREA OF CENTRAL ADRIATIC			
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FAO	YUG- 43-H	I. MARASOVIC	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
STUDIES OF TOXIC DINOFLAGELLATE SPECIES IN THE INSHORE WATERS OF THE EAST ADRIATIC COAST			
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FAO	YUG- 59-H	T. PUCHER-PEIKOVIC	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
INVESTIGATIONS OF DOMINANT DIATOM POPULATIONS CHARACTERISTIC FOR AN EUTROPHICATED ENVIRONMENT (MIDDLE ADRIATIC)			
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FAO	YUG- 2-I	D. REGNER	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
POLLUTION-INDUCED ECOSYSTEM MODIFICATION IN THE COASTAL AREA OF CENTRAL ADRIATIC			
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FAO	YUG- 51-H	D. REGNER	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
INFLUENCE OF EUTROPHICATION ON THE COPEPOD NUTRITION IN THE COASTAL ENVIRONMENT			
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FAO	YUG- 58-I	D. REGNER	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
IMPACT OF POLLUTION ON THE COPEPOD COMMUNITY AT THE MOST POLLUTED AREAS OF THE EASTERN ADRIATIC COAST			
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MONI	YUG- 4-O	S. SOBOT	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
COASTAL WATER QUALITY CONTROL IN THE SPLIT AREA			
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FAO	YUG- 5-G	M. TUDOR	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
RESEARCH ON THE EFFECTS OF OIL DISPERSANTS ON MARINE ORGANISMS			
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FAO	YUG- 48-G	M. TUDOR	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
RESEARCH ON THE EFFECTS OF OIL AND HEAVY METALS ON FISH			
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UNEP	YUG- 42-Z	T. VUCETIC	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
COMPARATIVE STUDY OF THE UNUSUAL APPEARANCE OF PELAGIA AND CHANGES OF THE ENVIRONMENTAL FACTORS			
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MONI	YUG- 1-O	I. VUKADIN	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
STUDY AND MONITORING OF TOXIC HEAVY METALS (ZN, CD, PB, CU, HG) IN SEAWATER SEDIMENTS AND ORGANISMS IN KASTELA BAY			
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FAO	YUG- 52-H	I. VUKADIN	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
EFFECTS OF EUTROPHICATION ON THE ECOSYSTEM IN SEMI-ENCLOSED BASINS (KASTELA BAY AND ELEFSIS BAY)			

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IOC	YUG- 36-F	M. ZORE-ARMANDA	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			
TURBIDITY TRANSPORT BY RESIDUAL CURRENTS			IOFSP
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FAO	YUG- 49-K	T. ZVONARIC	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			
STUDY OF THE MERCURY ECOCYCLE IN THE MARINE SYSTEM OF THE KASTELA BAY			IOFSP
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FAO	YUG- 26-D	R. BUZINA	
INSTITUTE OF PUBLIC HEALTH OF SR CROATIA, ZAGREB			
THE ANALYSIS OF MERCURY AND METHYLMERCURY IN SEAFOOD IN VARIOUS PARTS OF THE MEDITERRANEAN REGION			IPHZA
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WHO	YUG- 27-D	R. BUZINA	
INSTITUTE OF PUBLIC HEALTH OF SR CROATIA, ZAGREB			
EVALUATION OF METHYLMERCURY IN MEDITERRANEAN POPULATIONS AND RELATED HEALTH HAZARDS			IPHZA
<hr/>			
WHO	YUG- 91-A	V. PRESECKI	
INSTITUTE OF PUBLIC HEALTH OF SR CROATIA, ZAGREB			
LABORATORY PROCEDURES FOR ENTEROVIRUSES, ROTA VIRUS AND HEPATITIS A VIRUS PRESENCE DETERMINATION IN SEAWATER, SEDIMENT AND SHELFISH (MUSSEL)			IPHZA
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IAEA	YUG- 9-A	J. MAKJANIC	
DEPARTMENT OF PHYSICS, RUDJER BOSKOVIC INSTITUTE, ZAGREB			
DEVELOPMENT OF X-RAY EMISSION SPECTROSCOPY AS MULTIELEMENTAL ANALYTICAL TECHNIQUES FOR MONITORING MARINE POLLUTANTS			IRBDP
<hr/>			
WMO	YUG- 73-L	L. KLASINC	
PHYSICAL CHEMISTRY DEPARTMENT, RUDJER BOSKOVIC INSTITUTE, ZAGREB			
PHOTOCHEMICAL OXIDANTS IN THE TROPOSPHERE - SIGNIFICANCE OF LAND TO SEA TRANSPORT IN THE MEDITERRANEAN			IRBPC
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UNEP	YUG- 35-Z	Z. MARETIC	(FOR 1986 SEE WHO YUG/35-D)
MEDICAL CENTRE, PULA			
PELAGIA NOCTILUCA - HUMAN HEALTH ASPECTS			MCPUL
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WHO YUG- 35-D Z. MARETIC (FOR 1985 SEE UNEP YUG/35Z)  
MEDICAL CENTRE, PULA

MCPUL

PELAGIA NOCTILUCA - HUMAN HEALTH ASPECTS

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WHO YUG- 83-D Z. MARETIC  
MEDICAL CENTRE, PULA

MCPUL

PELAGIA NOCTILUCA AND OTHER TOXIC MARINE ORGANISMS - IMPACT ON HUMAN HEALTH

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UNEP YUG- 34-Z B. CEZAREVIC  
MEDICAL CENTRE, DUBROVNIK

MECDU

INVESTIGATION OF MEDICAL EFFECTS OF JELLYFISH ON HUMANS IN THE REGION OF  
DUBROVNIK

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IOC YUG- 25-F J. FAGANELI  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN

MRICP

MODIFICATIONS OF THE SUSPENDED ORGANIC MATTER COMPOSITION AND SEDIMENTATION  
IN THE POLLUTED COASTAL WATERS

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IAEA YUG- 66-A J. FAGANELI  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN

MRICP

INPUT AND TRANSFORMATIONS OF ALLOCHTHONOUS ORGANIC MATTER IN THE COASTAL WATERS

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FAO YUG- 24-H N. FANUKO  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN

MRICP

EUTROPHICATION AND CONCOMITANT PLANKTON BLOOMS

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FAO YUG- 40-H N. FANUKO  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN

MRICP

EUTROPHICATION OF THE NORTH ADRIATIC AND CONCOMITANT PLANKTON BLOOMS

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FAO YUG- 47-G N. FANUKO  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN

MRICP

TOXICITY OF CADMIUM, MERCURY AND PCBS TO THE REPRESENTATIVE NORTHERN-  
ADRIATIC PHYTOPLANKTON SPECIES CULTURED IN VITRO

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UNEP YUG- 45-Z A. MALEJ  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN

MRICP

RATE OF METABOLISM OF JELLYFISH AS RELATED TO BODYWEIGHT, CHEMICAL COMPOSITION  
AND TEMPERATURE

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IAEA YUG- 78-K A. MALEJ  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN

MRICP

CHEMICAL AND ISOTOPIC COMPOSITION OF MARINE ORGANIC MATTER AS INDICATORS  
OF ITS ORIGIN

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WHO YUG- 84-D R. BUZINA  
INST. FOR DIABETES, SCHOOL OF MEDICINE, ZAGREB

SMZAG

EVALUATION OF METHYLMERCURY IN MEDITERRANEAN POPULATIONS AND RELATED HEALTH  
HAZARDS

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FAO YUG- 23-G M. GASIC

INSTITUTE OF CHEMISTRY, UNIVERSITY OF BELGRADE, BELGRADE

UBEIC

HALOGEN-CONTAINING TERPENOIDS AND RELATED SUBSTANCES IN MARINE ORGANISMS

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IOC YUG- 88-L J. FAGANELI  
INSTITUTE OF BIOLOGY, UNIVERSITY EDVARD KARDELJ, LJUBLJANA

UKALJ

THE ROLE OF SEDIMENTATION IN THE BIOGEOCHEMICAL CYCLES OF SELECTED HEAVY METALS  
AND NUTRIENTS IN SHALLOW COASTAL WATERS (GULF OF TRIESTE, NORTHERN ADRIATIC)

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UNEP YUG- 44-Z B. SEDMAK  
INSTITUTE OF BIOLOGY, UNIVERSITY EDVARD KARDELJ, LJUBLJANA

UKALJ

CYTOLITIC TOXINS FROM JELLYFISH; PELAGIA NOCTILUCA COTYLORHIZA TUBERCULATA

---

IAEA YUG- 22-K N. AJDACIC  
UNIVERSITY "VELJKO VLAHOVIC", TITIGRAD

UTITO

ACCUMULATION AND TRANSPORT OF RADIONUCLIDES IN THE BIOTA OF THE SOUTH ADRIATIC  
REGION

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IOC YUG- 60-F D. JUSTIC  
FACULTY OF NATURAL SCIENCES AND MATHEMATICS, UNIVERSITY OF ZAGREB, ZAGREB

UZANS

OXYGEN CONTENT AND OXYGEN METABOLISM OF THE NORTHERN ADRIATIC SEA: A MODEL  
APPROACH

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ANNEX X

SUMMARY OF WORK PERFORMED IN THE FRAME OF  
MED POL JELLYFISH PROGRAMME

ANNEX X  
SUMMARY OF WORK PERFORMED IN THE  
FRAME OF MED POL JELLYFISH PROGRAMME

ITALY (Adriatic Region)

BARI: Prof. L. Scalera Liaci - Istituto di Zoologia - Università di Bari.

During 1985 a weekly monitoring was done along the coasts between Bari and Termoli, and on Tremiti Islands, with five fixed stations. When coastal aggregations were detected, daily observations were carried out. The monitoring includes also hydrological and meteorological data. Data collected are still to be analysed, but show a massive occurrence of Pelagia noctiluca from July onwards.

During 1986, the monitoring activities will continue. Maturity stages of the gonads will be determined by histological and histochemical analysis on Pelagia noctiluca sampled during aggregations.

FANO: Prof. C. Piccinetti - Laboratorio di Biologia Marina e Pesca, Cattedra di Ecologia - Università di Bologna.

During 1985 the program on the monitoring of jellyfish and hydrological parameters which started in 1984, was continued by means of seasonal research cruises. These cruises are operative in the framework of the Fishery Research Project of the "Ministero Marina Mercantile" in the Adriatic Sea and Western Mediterranean Sea. Data of the 1985 cruises show a presence of Pelagia noctiluca in the Adriatic Sea in massive aggregations during spring and summer. Hydrological data have been collected as well and have to be elaborated. An analysis to determinate the reproduction potential of this species in the Adriatic is being carried out.

The continuation of this program is forecasted for 1986, also analysing the correlation between Pelagia noctiluca and the quantity of eggs and larval stages of fish.

TRIESTE: Prof. L. Rottini Sandrini - Dipartimento di Biologia - Università di Trieste; CIMAM - Laboratorio di Biologia Marina - Trieste.

Bio-ecological research: This operative group have carried out monitoring in four permanent stations in the Gulf of Trieste and have gathered meteorological and hydrological data with the collaboration of the Thalassografic Institute - CNR of Trieste. The year-to-year sea level and wind variability have been studied, in relation to the periodic marine phenomena. A series of experiments in aquarium have been carried out on the influence of temperature and salinity on the behaviour, reproduction and the development of Pelagia noctiluca. An histological control of the grade of maturity has been done on specimens collected from coastal surface aggregation in the Gulf of Trieste. Analyses on the reproduction potential, the seasonal variations and maturity gradient are under way. The interaction between fishery and jellyfish in the Adriatic Sea has been examined.

1986 program:

- 1) Pray-predador model and damage to fishery, eco-system, sanitary
- 2) Analysis of isotopic content in the mesoglea in relation with the seawater values
- 3) Creation of a climatological data bank and climatic studies of the Northern Adriatic area.

#### Toxicological-medical research

- R. Della Loggia et al. - Istituto di Farmacologia e Farmacognosia - Università di Trieste; Laboratorio di Biologia Marina - Trieste

The first problem considered was the individuation of an animal model suitable for the detection of the dermatotoxic effects of Pelagia noctiluca preparations. The second step in the research program was the separation of Pelagia nematocysts in still active form, without contamination by non-nematocyst material.

In 1986, the aims of the research will be the purification of the toxin and possible immunological studies.

- C. Scarpa et al. e Kokelj F. - Clinica Dermatologica - University Skin Clinic, Trieste

A study of the clinical evolution of patients suffering from serious jellyfish stings has been carried out and a statistical analysis was therefore done.

An Experimental testing on human skin with Pelagia noctiluca watery extract was made: an extract was obtained in distilled water with Pelagia noctiluca tentacles, then filtered through a plankton net to 100 nanometers. This extract was then tried by patch-scratch-testing on skin of 16 human volunteers. Positive results were obtained in 75% of the tested group (12/16). This fluid is now being used in our present research work in order to find the proper testing dilution. The elicited reactions seem to be of irritative, not allergic nature. We will try in the future some local and general antidote drugs in order to achieve a faster healing of pelagia noctiluca skin injuries.

#### YUGOSLAVIA

##### Monitoring activities

Monitoring of Pelagia noctiluca occurrence has been carried out in the southernmost part of the Yugoslav coast as to evaluate the "input" of medusae to more northern regions of the Adriatic Sea. Jellyfish appearance has been followed along the whole eastern coast with a peak abundance (especially in form of passive aggregations) registered in the Northern Adriatic. Reports from the Southern Adriatic in early spring of 1985 describing Pelagia as real "zoccurrent" and its mass presence in Northern Adriatic during late summer, autumn and early winter indicate the transport by currents as an important factor in regulating the population dynamics in the northern region of the Adriatic Sea. It must be stressed, however, that the observations were limited to coastal regions and surface waters.

In Northern Adriatic the behavioural characteristics of Pelagia noctiluca distribution were studied and two types of aggregations were recognized: passive, formed on surface by organisms with limited mobility and active, where animals were active and spread throughout the water column. Both types could be observed along the shore but also in open waters. Some comments on existing methodology for monitoring jellyfish were also prepared in collaboration with Italian colleagues. Special attention has been given to the impact of mass presence of Pelagia noctiluca on human health. This aspect has been studied in Dubrovnik, Pula and in 1983 and 1984 also in Piran. It was concluded that this jellyfish represented more a nuisance than a real health hazard. In Pula, the experiments with the venom apparatus and antibody tests ELISA are also in course.

#### Research activities

Research activities included the study of proteolytic activity of Pelagia noctiluca, investigations of plankton community and research of the biometrics characteristics and nutritional ecology of Pelagia noctiluca.

It is concluded that at least two proteolytic enzymes are present in Pelagia, one of which is active in the acid pH range and the other in the alkaline pH range. A high degree of activation after dialysis is observed. Plankton was studied by standard plankton methodology in the Adriatic Sea near Dubrovnik. The prevalence of holoplanktonic species and rare findings of meroplanktonic medusae confirm influence of the Southern Adriatic open waters, which is recognizable very near to the coast. The presence of meroplanktonic species indicate their shifting by currents.

Numerous measurements of biometrics characteristics of Pelagia noctiluca enabled us to describe their relationship by allometric equations which indicate isometric growth. Biochemical analyses of Pelagia revealed protein as major constituent and showed a tendency of decreasing in bigger animals. The opposite is shown for lipids. Estimation of the caloric value indicate Pelagia as noneligible food source.  $^{13}\text{C}$  analyses in differently sized animals suggest the change of diet during growth. Metabolic rates were significantly influenced by temperature and it is suggested that migration to colder water layer and reduction of activity level (passive floating at the depth of jellyfish neutral buoyancy) would minimize energy losses. The findings were correlated to the formation of passive and active aggregations.

ANNEX XI

FELLOWSHIPS IN THE FRAME OF MED POL  
ITALY  
(ADRIATIC REGION)

ANNEX XI  
FELLOWSHIPS  
(1982-1989)  
ITALY (ADRIATIC REGION)

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JC84 ITA-ROTT L. ROTTINI-SANDRINI  
LABORATORY OF MARINE BIOLOGY - CIMAM, TRIESTE

CIMAM

UNEP CONSULTATION MEETING ON A JELLYFISH PROJECT IN THE MEDITERRANEAN SEA  
ATHENS, GREECE, 6-7 FEBRUARY 1984

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JW83 ITA-ROTT L. ROTTINI-SANDRINI  
LABORATORY OF MARINE BIOLOGY - CIMAM, TRIESTE

CIMAM

UNEP WORKING GROUP ON THE BLOOMS OF JELLYFISH IN THE MEDITERRANEAN  
ATHENS, GREECE, 31 OCTOBER - 4 NOVEMBER 1983

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TB84 ITA-DALL L. DALLA VENEZIA  
ISTITUTO DI BIOLOGIA DEL MARE, CNR, VENEZIA

IBMVE

FAO/UNEP MEETING ON THE TOXICITY AND BIOACCUMULATION OF SELECTED SUBSTANCES IN  
MARINE ORGANISMS  
ROVINJ, YUGOSLAVIA, 5-9 NOVEMBER 1984

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RC84 ITA-FOSS V. U. FOSSATO  
ISTITUTO DI BIOLOGIA DEL MARE, CNR, VENEZIA

IBMVE

FAO/UNEP/IAEA CONSULTATION MEETING ON REFERENCE METHODS FOR THE DETERMINATION  
OF CHEMICAL CONTAMINANTS IN MARINE ORGANISMS  
ROME, ITALY, 4-8 JUNE 1984

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JW83 ITA-STRA F. STRAVISI  
ISTITUTO TALASSOGRAFICO DI TRIESTE, TRIESTE

ITTRI

UNEP WORKING GROUP ON THE BLOOMS OF JELLYFISH IN THE MEDITERRANEAN  
ATHENS, GREECE, 31 OCTOBER - 4 NOVEMBER 1983

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RC88 ITA-PICC C. PICCINETTI  
LABORATORIO DI BIOLOGIA MARINA E PESCA, FANO

LBMPF

INTERNATIONAL CONFERENCE ON THE RED CORAL, 27-30 SEPTEMBER 1988,  
TORRE DEL GRECO, ITALY

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CB89 ITA-BOER F. BOERO  
BIOLOGY DEPARTMENT, UNIVERSITY OF LECCE, LECCE  
ULEBD  
5TH INTERNATIONAL CONFERENCE ON COELENTERATE BIOLOGY 'COELENTERATES 1989'  
(SOUTHAMPTON, 10-14 JULY 1989)

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EE85 ITA-CAST A. CASTELLI  
ISTITUTO DI ZOOLOGIA, UNIVERSITA DI MODENA, MODENA  
UMOIZ  
MEETING ON THE EFFECTS OF POLLUTION ON MARINE ECOSYSTEMS  
BLANES, SPAIN, 7-11 OCTOBER 1985

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MM84 ITA-RIOL M. RIOLFATTI  
ISTITUTO D'IGIENE, UNIVERSITA DI PADOVA, PADOVA  
UPDII  
WHO/FAO/UNEP CONSULTATION MEETING ON BIOLOGICAL MONITORING OF METHYLMERCURY IN  
MEDITERRANEAN POPULATIONS  
ZAGREB, YUGOSLAVIA, 17-21 SEPTEMBER 1984

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SE89 ITA-VENI F. VENIALE  
UNIVERSITY OF PAVIA, DIP. SCIENZE DELLA TERRA  
UPDST  
FIRST INTERNATIONAL SYMPOSIUM ON SMALL ESTUARIES, SKRADIN, 22-27 MAY 1989.

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JW83 ITA-SCAR C. SCARPA  
ISTITUTO DI CLINICA DERMATOLOGICA, UNIVERSITA DI TRIESTE, TRIESTE  
UITRD  
UNEP WORKING GROUP ON THE BLOOMS OF JELLYFISH IN THE MEDITERRANEAN  
ATHENS, GREECE, 31 OCTOBER - 4 NOVEMBER 1983

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JW83 ITA-DELL R. DELLA LOGGIA  
ISTITUTO DI FARMACOLOGIA E FARMACOGNOSIA, UNIVERSITA DI TRIESTE, TRIESTE  
UIRFF  
UNEP WORKING GROUP ON THE BLOOMS OF JELLYFISH IN THE MEDITERRANEAN  
ATHENS, GREECE, 31 OCTOBER - 4 NOVEMBER 1983

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ANNEX XII

FELLOWSHIPS IN THE FRAME OF MED POL  
YUGOSLAVIA

ANNEX XII  
FELLOWSHIPS  
(1982-1989)  
YUGOSLAVIA

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BM86	YUG-BENO	A.	BENOVIC	
BIOLOGICAL INSTITUTE, DUBROVNIK				BIDUB
SCIENTIFIC VISIT TO BRITISH MUSEUM LONDON, U.K., 24 JUNE - 5 JULY 1986				
<hr/>				
CI86	YUG-BENO	A.	BENOVIC	
BIOLOGICAL INSTITUTE, DUBROVNIK				BIDUB
VIII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN PALMA DE MALLORCA, SPAIN, 20-22 OCTOBER 1986				
<hr/>				
JC84	YUG-BENO	A.	BENOVIC	
BIOLOGICAL INSTITUTE, DUBROVNIK				BIDUB
UNEP CONSULTATION MEETING ON A JELLYFISH PROJECT IN THE MEDITERRANEAN SEA ATHENS, GREECE, 6-7 FEBRUARY 1984				
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JS83	YUG-BENO	A.	BENOVIC	
BIOLOGICAL INSTITUTE, DUBROVNIK				BIDUB
SEMINAR ON JELLYFISH ATHENS, GREECE, 6-9 JUNE 1983				
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JW83	YUG-BENO	A.	BENOVIC	
BIOLOGICAL INSTITUTE, DUBROVNIK				BIDUB
UNEP WORKING GROUP ON THE BLOOMS OF JELLYFISH IN THE MEDITERRANEAN ATHENS, GREECE, 31 OCTOBER - 4 NOVEMBER 1983				
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ME85	YUG-BENO	A.	BENOVIC	
BIOLOGICAL INSTITUTE, DUBROVNIK				BIDUB
WORKSHOP ON MODERN TRENDS ON SYSTEMATICS, ECOLOGY AND EVOLUTION OF HYDROIDS/HYDROMEDUSAE ISCHIA, ITALY, 22 SEPTEMBER - 6 OCTOBER 1985				
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EM86	YUG-ONOF	V.	ONOFRI	
BIOLOGICAL INSTITUTE, DUBROVNIK				BIDUB
THIRD INTERNATIONAL SYMPOSIUM ON ENVIRONMENTAL MANAGEMENT, FOR DEVELOPING COUNTRIES ISTANBUL, TURKEY, 6-12 AUGUST 1986				
<hr/>				
SE89	YUG-VILI	D.	VILICIC	
BIOLOGICAL INSTITUTE, DUBROVNIK				BIDUB
FIRST INTERNATIONAL SYMPOSIUM ON SMALL ESTUARIES, SKRADIN, 22-27 MAY 1989.				

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GN87	YUG-DEGO	D.	DEGOBBIS	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ				CMRRO
SECOND MEETING OF THE PARCOM, WORKING GROUP ON NUTRIENTS STOCKHOLM, SWEDEN, 27-29 OCTOBER 1987				
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RA85	YUG-DEGO	D.	DEGOBBIS	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ				CMRRO
INTERNATIONAL WORKSHOP ON RED-ALGAL BLOOMING IN THE ADRIATIC SEA BOLOGNA, ITALY 9-14 SEPTEMBER 1985				
<hr/>				
CI84	YUG-FUKS	D.	FUKS	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ				CMRRO
VII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN LUCERNE, SWITZERLAND, 11-13 OCTOBER 1984				
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MO85	YUG-FUKS	D.	FUKS	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ				CMRRO
8TH INTERNATIONAL SYMPOSIUM ON MEDICAL OCEANOGRAPHY NICE, FRANCE, 9-12 OCTOBER 1985				
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SE82	YUG-FUKS	D.	FUKS	(FROM 1981 ALLOC. )
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ				CMRRO
WHO/UNEP CONSULTATION MEETING ON METHODS FOR MONITORING SELECTED POLLUTANTS IN SEWAGE EFFLUENTS AND COASTAL RECREATIONAL WATERS ROME, ITALY, 24-26 NOVEMBER 1982				
<hr/>				
PE85	YUG-KRAJ	M.	KRAJNOVIC-OZRETIC	(ONLY PARTIAL GRANT )
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ				CMRRO
VII SYMPOSIUM ON PHYSIOLOGICAL EFFECTS OF POLLUTANTS IN ESTUARINE AND COASTAL ORGANISMS GEORGETOWN, SOUTH CAROLINA, USA, 21-25 OCTOBER 1985				
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CI86	YUG-LUCU	C.	LUCU	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ				CMRRO
VIII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN PALMA DE MALLORCA, SPAIN, 20-22 OCTOBER 1986				
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JW83	YUG-OZRE	B.	OZRETIC	(PART D.S.A. )
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ				CMRRO
UNEP WORKING GROUP ON THE BLOOMS OF JELLYFISH IN THE MEDITERRANEAN ATHENS, GREECE, 31 OCTOBER - 4 NOVEMBER 1983				

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CI84 YUG-PAVI J. PAVICIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ  
CMRRO

VII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN  
LUCERNE, SWITZERLAND, 11-13 OCTOBER 1984

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CI86 YUG-PAVI J. PAVICIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ  
CMRRO

VIII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN  
PALMA DE MALLORCA, 20-22 OCTOBER 1986

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HM85 YUG-PAVI J. PAVICIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ  
CMRRO

FIFTH INTERNATIONAL CONFERENCE ON HEAVY METALS IN THE ENVIRONMENT  
ATHENS, GREECE, 9-14 SEPTEMBER 1985

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CI86 YUG-SKRE M. SKREBLIN  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ  
CMRRO

VIII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN  
PALMA DE MALLORCA, SPAIN, 20-22 OCTOBER 1986

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EE85 YUG-ZAVO D. ZAVODNIK  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ  
CMRRO

MEETING ON THE EFFECTS OF POLLUTION ON MARINE ECOSYSTEMS  
BLANES, SPAIN, 7-11 OCTOBER 1985

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CI88 YUG-KRAJ M. KRAJNOVIC-OZRETIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ  
CMRRO

IX ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN AND ICSEM  
CONGRESS  
ATHENS, GREECE, 17-21 OCTOBER 1988

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GN88 YUG-DEGO D. DEGOBBIS (TICKET AND PER DIEMS )  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ  
CMRRO

THIRD MEETING OF THE PARCOM, WORKING GROUP ON NUTRIENTS  
THE HAGUE, 23-27 OCTOBER 1988

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CI84 YUG-JURA M. JURACIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB  
CMRZA

VII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN  
LUCERNE, SWITZERLAND, 11-13 OCTOBER 1984

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CI84	YUG-KURE	B.	KURELEC	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB				CMRZA
VII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN LUCERNE, SWITZERLAND, 11-13 OCTOBER 1984				
JC84	YUG-LEGO	T.	LEGOVIC	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB				CMRZA
UNEP CONSULTATION MEETING ON A JELLYFISH PROJECT IN THE MEDITERRANEAN SEA ATHENS, GREECE, 6-7 FEBRUARY 1984				
JW83	YUG-LEGO	T.	LEGOVIC	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB				CMRZA
UNEP WORKING GROUP ON THE BLOOMS OF JELLYFISH IN THE MEDITERRANEAN ATHENS, GREECE, 31 OCTOBER - 4 NOVEMBER 1983				
JW83	YUG-MAKJ	J.	MAKJANIC	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB				CMRZA
UNEP WORKING GROUP ON THE BLOOMS OF JELLYFISH IN THE MEDITERRANEAN ATHENS, GREECE, 31 OCTOBER - 4 NOVEMBER 1983				
CI86	YUG-PICM	M.	PICER	(D.S.A. ONLY )
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB				CMRZA
VIII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN PALMA DE MALLORCA, SPAIN, 20-22 OCTOBER 1986				
RC84	YUG-PICM	M.	PICER	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB				CMRZA
FAO/UNEP/IAEA CONSULTATION MEETING ON REFERENCE METHODS FOR THE DETERMINATION OF CHEMICAL CONTAMINANTS IN MARINE ORGANISMS ROME, ITALY, 4-8 JUNE 1984				
CI86	YUG-PICN	N.	PICER	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB				CMRZA
VIII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN PALMA DE MALLORCA, SPAIN, 20-22 OCTOBER 1986				
CI84	YUG-PRAV	V.	PRAVDIC	
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB				CMRZA
VII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN LUCERNE, SWITZERLAND, 11-13 OCTOBER 1984				

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CI84 YUG-ZUTI V. ZUTIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB  
CMRZA  
VII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN  
LUCERNE, SWITZERLAND, 11-13 OCTOBER 1984

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GC88 YUG-ZUTI V. ZUTIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB  
CMRZA  
GORDON RESEARCH CONFERENCE ON ESTUARINE PROCESSES  
VENTURA, CALIFORNIA, USA, 29 FEBRUARY 1988-4 MARCH 1988

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CM88 YUG-MIKA N. MIKAC (PT8 )  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB  
CMRZA  
CHEMISTRY OF THE MEDITERRANEAN  
PRIMOSTEN, YUGOSLAVIA, 4-12 MAY 1988

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CM88 YUG-KOZA S. KOZAR (PT8 )  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB  
CMRZA  
CHEMISTRY OF THE MEDITERRANEAN  
PRIMOSTEN, YUGOSLAVIA, 4-12 MAY 1988

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CI88 YUG-LIMI N. LIMIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB  
CMRZA  
IX ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN AND ICSEM  
CONGRESS  
ATHENS, GREECE, 17-21 OCTOBER 1988

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CI88 YUG-ORLI M. ORLIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB  
CMRZA  
IX ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN AND ICSEM  
CONGRESS  
ATHENS, GREECE, 17-21 OCTOBER 1988

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CI88 YUG-PICE M. PICER  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB  
CMRZA  
IX ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN AND ICSEM  
CONGRESS  
ATHENS, GREECE, 17-21 OCTOBER 1988

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CI88 YUG-SEKU B. SEKULIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB  
CMRZA  
IX ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN AND ICSEM  
CONGRESS  
ATHENS, GREECE, 17-21 OCTOBER 1988

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CI88 YUG-PICR N. PICER  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

IX ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN AND ICSEM  
CONGRESS  
ATHENS, GREECE, 17-21 OCTOBER 1988

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SE89 YUG-PETR D. PETRICIOLI  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

FIRST INTERNATIONAL SYMPOSIUM ON SMALL ESTUARIES, SKRADIN, 22-27 MAY 1989.

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IF85 YUG-SOBO S. SOBOT  
DEPT. OF PLANNING AND ENVIRONMENTAL PROTECTION, ZAGREB

DPEZA

FIFTH INTERCALIBRATION EXERCISE AND CONSULTATION MEETING ON MICROBIOLOGICAL  
METHODS FOR COASTAL WATER QUALITY MONITORING  
MARSEILLE, FRANCE, 18-23 NOVEMBER 1985

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IT84 YUG-SKAB C. SKABIC  
HEALTH PROTECTION INSTITUTE, PULA

HPIPU

WHO/UNEP THIRD INTERCALIBRATION EXERCISE AND CONSULTATION MEETING ON  
MICROBIOLOGICAL METHODS FOR COASTAL WATER QUALITY MONITORING  
TUNIS, TUNISIA, 12-16 NOVEMBER 1984

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CI88 YUG-OZRE Z. OZRETIC  
HYDROGRAPHIC INSTITUTE OF THE YUGOSLAV NAVY, HYDMOR, SPLIT

IHYNS

IX ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN AND ICSEM  
CONGRESS  
ATHENS, GREECE, 17-21 OCTOBER 1988

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CI86 YUG-HORV M. HORVAT  
INSTITUTE JOSEF STEFAN, UNIVERSITY E. KARDELJ, LJUBLJANA

IJSLJ

VIII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN  
PALMA DE MALLORCA, SPAIN, 20-22 OCTOBER 1986

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HM89 YUG-HORV M. HORVAT (ECONOMY AIR TICKET )  
INSTITUTE JOSEF STEFAN, UNIVERSITY E. KARDELJ, LJUBLJANA

IJSLJ

7TH INTERNATIONAL CONFERENCE: HEAVY METALS IN THE ENVIRONMENT  
GENEVA, SWITZERLAND, 12-15 SEPTEMBER 1989

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CI84 YUG-DUJM J. DUJMOV  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT

IOFSP

VII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN  
LUCERNE, SWITZERLAND, 11-13 OCTOBER 1984

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CI86	YUG-DUJM	J. DUJMOV	(D.S.A. ONLY )
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
VIII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN PALMA DE MALLORCA, SPAIN, 20-22 OCTOBER 1986			
MO87	YUG-GACI	M. GACIC	(TICKET ONLY )
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
INTERNATIONAL MEETING ON OCEANOGRAPHY VANCOUVER, CANADA, 9-22 AUGUST 1987			
IM84	YUG-KRST	N. KRSTULOVIC	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
WHO/UNEP SECOND INTERCALIBRATION EXERCISE AND CONSULTATION MEETING ON COASTAL WATER QUALITY MONITORING ATHENS, GREECE, 25-29 JUNE 1984			
IT84	YUG-KRST	N. KRSTULOVIC	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
WHO/UNEP THIRD INTERCALIBRATION EXERCISE AND CONSULTATION MEETING ON MICROBIOLOGICAL MEIHODS FOR COASTAL WATER QUALITY MONITORING TUNIS, TUNISIA, 12-16 NOVEMBER 1984			
EE85	YUG-MARA	I. MARASOVIC	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
MEETING ON THE EFFECTS OF POLLUTION ON MARINE ECOSYSTEMS BLANES, SPAIN, 7-11 OCTOBER 1985			
EE85	YUG-REGN	D. REGNER	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
MEETING ON THE EFFECTS OF POLLUTION ON MARINE ECOSYSTEMS BLANES, SPAIN, 7-11 OCTOBER 1985			
EP85	YUG-REGN	D. REGNER	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
THIRD INTERNATIONAL SYMPOSIUM ON ENVIRONMENTAL POLLUTION AND ITS IMPACT ON LIFE IN THE MEDITERRANEAN REGION ISTANBUL, TURKEY, 1-4 SEPTEMBER 1985			
ME87	YUG-REGN	D. REGNER	
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT			IOFSP
4TH SYMPOSIUM OF ENVIRONMENTAL POLLUTION (MESAEP) KAVALA, GREECE, 6-11 SEPTEMBER 1987			

TB84 YUG-TUDO M. TUDOR  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT  
IOFSP  
FAO/UNEP MEETING ON THE TOXICITY AND BIOACCUMULATION OF SELECTED SUBSTANCES IN  
MARINE ORGANISMS  
ROVINJ, YUGOSLAVIA, 5-9 NOVEMBER 1984

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JW83 YUG-VUCE T. VUCETIC  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT  
IOFSP  
UNEP WORKING GROUP ON THE BLOOMS OF JELLYFISH IN THE MEDITERRANEAN  
ATHENS, GREECE, 31 OCTOBER - 4 NOVEMBER 1983

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ME85 YUG-VUCE T. VUCETIC  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT  
IOFSP  
WORKSHOP ON MODERN TRENDS ON SYSTEMATICS, ECOLOGY AND EVOLUTION OF  
HYDROIDS/HYDROMEDUSAE  
ISCHIA, ITALY, 22 SEPTEMBER - 6 OCTOBER 1985

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BC84 YUG-VUKA I. VUKADIN  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT  
IOFSP  
FAO/UNEP/WHO/IOC/IAEA MEETING ON THE BIOGEOCHEMICAL CYCLE OF MERCURY IN THE  
MEDITERRANEAN  
SIENA, ITALY, 27-31 AUGUST 1984

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CI84 YUG-VUKA I. VUKADIN  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT  
IOFSP  
VII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN  
LUCERNE, SWITZERLAND, 11-13 OCTOBER 1984

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CI86 YUG-VUKA I. VUKADIN  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT  
IOFSP  
VIII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN  
PALMA DE MALLORCA, SPAIN, 20-22 OCTOBER 1986

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ME87 YUG-VUKA I. VUKADIN  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT  
IOFSP  
4TH SYMPOSIUM OF ENVIRONMENTAL POLLUTION (MESAEP)  
KAVALA, GREECE, 6-11 SEPTEMBER 1987

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SM87 YUG-VUKA I. VUKADIN  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT  
IOFSP  
INTERNATIONAL SYMPOSIUM ON ENVIRONMENT MANAGEMENT  
ISTANBUL, TURKEY, 5-9 JUNE 1987

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CI86 YUG-ZVON T. ZVONARIC  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT IOFSP

VIII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN  
PALMA DE MALLORCA, SPAIN, 20-22 OCTOBER 1986

---

EC86 YUG-ZVON T. ZVONARIC  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT IOFSP

SECOND INTERNATIONAL CONFERENCE ENVIRONMENTAL CONTAMINATION  
AMSTERDAM, HOLLAND, 23-25 SEPTEMBER 1986

---

CI88 YUG-REGN D. REGNER  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT IOFSP

IX ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN AND ICSEM  
CONGRESS  
ATHENS, GREECE, 17-21 OCTOBER 1988

---

CI88 YUG-SUCE B. SUCEVIC  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT IOFSP

IX ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN AND ICSEM  
CONGRESS  
ATHENS, GREECE, 17-21 OCTOBER 1988

---

CI88 YUG-ZVON T. ZVONARIC  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT IOFSP

IX ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN AND ICSEM  
CONGRESS  
ATHENS, GREECE, 17-21 OCTOBER 1988

---

CC89 YUG-GACI M. GACIC  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT IOFSP

MEETING WITH MR T. HOPKINS TO DISCUSS A DOCUMENT ON CLIMATIC CHANGES.  
(7-9 JULY 1989)  
LA SPEZIA, ITALY

---

RA89 YUG-GACI M. GACIC ((3 PER DIEMS ONLY) )  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT IOFSP

VISIT A. LASKARATOS (DEPARTMENT OF APPLIED PHYSICS, UNIVERSITY OF ATHENS) TO  
FINALIZE PAPER FOR PUBLICATION RESULTING FROM MED POL RESEARCH ACTIVITIES  
ATHENS, GREECE, 8-12 MAY 1989.

---

SE89 YUG-KUSP G. KUSPILIC  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT IOFSP

FIRST INTERNATIONAL SYMPOSIUM ON SMALL ESTUARIES, SKRADIN, 22-27 MAY 1989.

---

TP89 YUG-GACI M. GACIC (TICKET AND PER DIEMS )  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT

IOFSP

CONSULTATION ON PHYSICAL PROCESSES AFFECTING THE TRANSPORT OF POLLUTANTS  
IN THE EASTERN MEDITERRANEAN  
ERDEMLI, TURKEY, 16-20 OCTOBER 1989

EP89 YUG-REGN D. REGNER (ECONOMY AIR TICKET )  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT

IOFSP

5TH INTERNATIONAL SYMPOSIUM ON ENVIRONMENTAL POLLUTION AND ITS IMPACT ON LIFE  
IN THE MEDITERRANEAN REGION  
BLANES, SPAIN, 2-6 OCTOBER 1989

EP89 YUG-VUKA I. VUKADIN (ECONOMY AIR TICKET )  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT

IOFSP

5TH INTERNATIONAL SYMPOSIUM ON ENVIRONMENTAL POLLUTION AND ITS IMPACT ON LIFE  
IN THE MEDITERRANEAN REGION  
BLANES, SPAIN, 2-6 OCTOBER 1989

MO85 YUG-CICE J. CICEK  
INSTITUTE OF PUBLIC HEALTH OF SR CROATIA, ZAGREB

IPHZA

8TH INTERNATIONAL SYMPOSIUM ON MEDICAL OCEANOGRAPHY  
NICE, FRANCE, 9-12 OCTOBER 1985

AP86 YUG-MARE Z. MARETIC  
MEDICAL CENTRE, PULA

MCPUL

VII SYMPOSIUM ON ANIMAL AND PLANT TOXINS  
PRAGUE, CZECHOSLOVAKIA, 18-22 AUGUST 1986

JW83 YUG-MARE Z. MARETIC  
MEDICAL CENTRE, PULA

MCPUL

UNEP WORKING GROUP ON THE BLOOMS OF JELLYFISH IN THE MEDITERRANEAN  
ATHENS, GREECE, 31 OCTOBER - 4 NOVEMBER 1983

CI86 YUG-FANU N. FANUKO  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN

MRTCP

VIII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN  
PALMA DE MALLORCA, SPAIN, 20-22 OCTOBER 1986

EM87 YUG-FANU N. FANUKO (PERDIEM ONLY (PT8) )  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN

MRTCP

22ND EUROPEAN MARINE BIOLOGY SYMPOSIUM (22ND EMBS)  
BARCELONA, SPAIN, 17-22 AUGUST 1987

CI86 YUG-MALE A. MALEJ  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN  
MRICP  
VIII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN  
PALMA DE MALLORCA, SPAIN, 20-22 OCTOBER 1986

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EM87 YUG-MALE A. MALEJ  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN  
MRICP  
22ND EUROPEAN MARINE BIOLOGY SYMPOSIUM (22ND EMBS)  
BARCELONA, SPAIN, 17-22 AUGUST 1987

---

JW83 YUG-MALE A. MALEJ  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN  
MRICP  
UNEP WORKING GROUP ON THE BLOOMS OF JELLYFISH IN THE MEDITERRANEAN  
ATHENS, GREECE, 31 OCTOBER - 4 NOVEMBER 1983

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EP85 YUG-TURK V. TURK  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN  
MRICP  
THIRD INTERNATIONAL SYMPOSIUM ON ENVIRONMENTAL POLLUTION AND ITS IMPACT ON  
LIFE IN THE MEDITERRANEAN REGION  
ISTANBUL, TURKEY, 1-4 SEPTEMBER 1985

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CI86 YUG-TUSN P. TUSNIK  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN  
MRICP  
VIII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN  
PALMA DE MALLORCA, SPAIN, 20-22 OCTOBER 1986

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EM87 YUG-TUSN P. TUSNIK (PERDIEM ONLY (PT8) )  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN  
MRICP  
22ND EUROPEAN MARINE BIOLOGY SYMPOSIUM (22ND EMBS)  
BARCELONA, SPAIN, 17-22 AUGUST 1987

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JW83 YUG-VUKO A. VUKOVIC (PART D.S.A. )  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN  
MRICP  
UNEP WORKING GROUP ON THE BLOOMS OF JELLYFISH IN THE MEDITERRANEAN  
ATHENS, GREECE, 31 OCTOBER - 4 NOVEMBER 1983

---

IE82 YUG-TURK V. TURK  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN  
MRICP  
WHO/UNEP INTERCALIBRATION EXERCISE  
ROME, ITALY, 22-26 NOVEMBER 1982

---

CI88 YUG-MALE A. MALEJ  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN  
MRICP  
IX ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN AND ICSEM  
CONGRESS  
ATHENS, GREECE, 17-21 OCTOBER 1988

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AB89 YUG-FANU N. FANUKO  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN  
MRTCP  
2ND INTERNATIONAL CONFERENCE ON PROBLEMS OF ALGAL BLOOMS IN AQUACULTURE  
SHERKIN ISLAND, IRELAND, 14-16 JUNE 1989

---

CB89 YUG-MALE A. MALEJ  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN  
MRTCP  
5TH INTERNATIONAL CONFERENCE ON COELENTERATE BIOLOGY 'COELENTERATES 1989'  
(SOUTHAMPTON, 10-14 JULY 1989)

---

CI84 YUG-MUND I. M. MUNDA  
SLOVENE ACADEMY OF SCIENCE AND ARTS, LJUBLJANA  
SASLJ  
VII ICSEM/IOC/UNEP WORKSHOP ON MARINE POLLUTION OF THE MEDITERRANEAN  
LUCERNE, SWITZERLAND, 11-13 OCTOBER 1984

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TB84 YUG-GASI M. J. GASIC  
INSTITUTE OF CHEMISTRY, UNIVERSITY OF BELGRADE, BELGRADE  
UBEIC  
FAO/UNEP MEETING ON THE TOXICITY AND BIOACCUMULATION OF SELECTED SUBSTANCES IN  
MARINE ORGANISMS  
ROVINJ, YUGOSLAVIA, 5-9 NOVEMBER 1984

---

TB84 YUG-TUSE M. TUSEK-ZNIDARIC  
INSTITUTE JOSEF STEFAN, UNIVERSITY E. KARDELJ, LJUBLJANA  
UUSLJ  
FAO/UNEP MEETING ON THE TOXICITY AND BIOACCUMULATION OF SELECTED SUBSTANCES IN  
MARINE ORGANISMS  
ROVINJ, YUGOSLAVIA, 5-9 NOVEMBER 1984

---

MM82 YUG-KOST L. KOSTA (FINANCED BY OWN INSTITUT.)  
DEPT. OF CHEMISTRY AND CHEMICAL TECHNOLOGY, UNIVERSITY OF LJUBLJANA, LJUBLJANA  
ULJDC  
WHO/UNEP CONSULTATION MEETING ON EVALUATION OF METHYLMERCURY IN MEDITERRANEAN  
POPULATIONS AND RELATED HEALTH HAZARDS  
ATHENS, GREECE, 13-17 SEPTEMBER 1982

---

MM84 YUG-KOST L. KOSTA  
DEPT. OF CHEMISTRY AND CHEMICAL TECHNOLOGY, UNIVERSITY OF LJUBLJANA, LJUBLJANA  
ULJDC  
WHO/FAO/UNEP CONSULTATION MEETING ON BIOLOGICAL MONITORING OF METHYLMERCURY IN  
MEDITERRANEAN POPULATIONS  
ZAGREB, YUGOSLAVIA, 17-21 SEPTEMBER 1984

---

RA85 YUG-ORLI M. ORLIC  
GEOPHYSICAL INSTITUTE, FACULTY OF SCIENCE, ZAGREB  
UZAGI  
INTERNATIONAL WORKSHOP ON RED-ALGAL BLOOMING IN THE ADRIATIC SEA  
BOLOGNA, ITALY, 9-14 SEPTEMBER 1985

---

IM84 YUG-BOKA S. BOKAN  
ZAVOD ZA PROSTORNO PLANIRANJE, RIJEKA

ZPPRI

WHO/UNEP SECOND INTERCALIBRATION EXERCISE AND CONSULTATION MEETING ON COASTAL  
WATER QUALITY MONITORING  
ATHENS, GREECE, 25-29 JUNE 1984

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ANNEX XIII

ON-JOB TRAINING IN THE FRAME OF MED POL



ANNEX XIII  
ON-JOB TRAINING IN THE FRAME OF MED POL  
(1982-1989)  
YUGOSLAVIA

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CRUI YUG-VILI D. VILICIC BIOLOGICAL INSTITUTE, DUBROVNIK	(PT8)	BIDUB
MONITORING OF MEDUSAE 30 JUNE - 14 JULY 1984 ITALIAN CRUISE, ADRIATIC		
VEIT YUG-JASP N. JASPRICA BIOLOGICAL INSTITUTE, DUBROVNIK		BIDUB
PARTICIPATION AT SUMMER SCHOOL ON ENVIRONMENTAL DYNAMICS 5-16 JUNE 1989 ISTITUTO VENETO DI S.L.A. VENEZIA, ITALY		
UVES YUG-BAZU D. BAZULIC CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ		CMRRO
GC DETERMINATION OF PCBS AND DDTS 11 JANUARY - 13 APRIL 1984 DIPARTIMENTO DI SCIENZE AMBIENTALI, UNIVERSITA DI VENEZIA, VENEZIA		
UVES YUG-DEGO D. DEGOBBIS CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ		CMRRO
GC DETERMINATION OF PDBS AND DDTS 11 JANUARY - 13 APRIL 1984 DIPARTIMENTO DI SCIENZE AMBIENTALI, UNIVERSITA DI VENEZIA, VENEZIA		
ILMR YUG-NAJD M. NAJDEK CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ		CMRRO
MEASUREMENTS OF HYDROCARBONS IN THE MARINE ENVIRONMENT 20 NOVEMBER - 20 DECEMBER 1985 ILMR, IAEA, MONACO		
UPEB YUG-ZUTI V. ZUTIC CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB	(PT8)	CMRZA
MEASUREMENT AND INTERPRETATION OF ESTUARINE CHEMICAL PARAMETERS 10 SEPTEMBER - 10 OCTOBER 1984 LABORATOIRE DE BIOLOGIE MARINE, UNIVERSITE DE PERPIGNAN, PERPIGNAN		

---

UATP YUG-KUZM M. KUZMIC  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

CONSULTATION ON PHYSICAL OCEANOGRAPHIC PROBLEMS  
1-5 FEBRUARY 1988  
LAB. OF PHYSICAL GEOGRAPHY, UNIV. OF ATHENS, ATHENS & UNIV. OF THESSALONIKI

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UATP YUG-ORLI M. ORLIC (PT8)  
CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB

CMRZA

CONSULTATION ON PHYSICAL OCEANOGRAPHIC PROBLEMS  
1-5 FEBRUARY 1988  
LAB. OF PHYSICAL GEOGRAPHY, UNIVERSITY OF ATHENS, ATHENS & UNIV. OF THESSALONIKI

---

IFRE YUG-HORV M. HORVAT  
INSTITUTE JOSEF STEFAN, UNIVERSITY E. KARDELJ, LJUBLJANA

IJSLJ

TRACE ELEMENT ANALYSIS BY GC  
31 MARCH - 15 APRIL 1986  
IFREMER, CENTRE DE NANTES, NANTES

---

UATP YUG-GACI M. GACIC  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT

IOFSP

ANALYSIS OF SEA-LEVEL DATA CONCERNING MESO-SCALE VARIABILITY  
25 JANUARY - 2 FEBRUARY 1987  
LABORATORY OF PHYSICAL GEOGRAPHY, UNIVERSITY OF ATHENS, ATHENS

---

UIHS YUG-GACI M. GACIC  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT

IOFSP

CO-OPERATIVE RESEARCH PROJECT  
11-22 JUNE 1984  
SCHOOL OF TECHNOLOGY, ARISTOTELIAN UNIVERSITY OF THESSALONIKI

---

UIHS YUG-DADI V. DADIC (PT8)  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT

IOFSP

CO-OPERATIVE RESERCH PROJECT  
11-22 JUNE 1984  
SCHOOL OF TECHNOLOGY, ARISTOTELIAN UNIVERSITY OF THESSALONIKI

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UATG YUG-GACI M. GACIC  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT

(PERDIEM ONLY (PT8)

IOFSP

ATHENS, GREECE, 20-23 OCTOBER 1987  
DEPARTMENT OF PHYSICAL GEOGRAPHY, UNIVERSITY OF ATHENS, ATHENS

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UATH YUG-GACI M. GACIC  
INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT

(PT8

IOFSP

CONSULTATIONS ON PHYSICAL OCEANOGRAPHIC PROBLEMS  
1-5 FEBRUARY 1988  
LABORATORY OF PHYSICAL GEOGRAPHY, UNIVERSITY OF ATHENS, ATHENS

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IIMR YUG-DRAV L. DRAVEC  
INSTITUTE OF PUBLIC HEALTH, PULA

IPHPU

MEASUREMENTS OF HYDROCARBONS IN THE MARINE ENVIRONMENT  
3-28 JUNE 1985  
IIMR, IAEA, MONACO

---

IIMR YUG-TUSN P. TUSNIK  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN

MRTCP

FLUORIMETRIC DETECTION OF PETROLEUM HYDROCARBONS  
11-26 JUNE 1984  
IIMR, IAEA, MONACO

---

IIMR YUG-PLAN R. PLANINC  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN

MRTCP

ANALYSIS OF HIGH MOLECULAR WEIGHT HALOGENATED HYDROCARBONS  
15 MAY - 15 JUNE 1984  
IIMR, IAEA, MONACO

---

UMET YUG-MALE A. MALEJ  
MARINE RESEARCH AND TRAINING CENTRE, PIRAN

MRTCP

MEET SCIENTISTS WORKING ON JELLYFISH PROGRAMME  
15 JUNE - 6 JULY 1986  
MIDDLE EAST TECHNICAL UNIVERSITY, ERDEMLI-ICEL

---

IIMR YUG-SIPO L. SIPOS  
FACULTY OF ENGINEERING, UNIVERSITY OF ZAGREB, ZAGREB

UZAFE

TESTING OF HG ANALYSER  
6-10 MAY 1985  
IIMR, IAEA, MONACO

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ANNEX XIV

PRIORITY ACTIONS PROGRAMME ACTIVITIES  
CARRIED OUT IN 1988-1989

ANNEX XIV  
PRIORITY ACTIONS PROGRAMME ACTIVITIES  
CARRIED OUT IN 1988-1989

1. The activities of PAP over the period 1988-1989 have been carried out in consistency with the approved workplans of the various Priority Actions.
2. These activities have been focused on the implementation of practical actions oriented towards integrated planning and environmentally sound management of Mediterranean coastal zones. The share of the integrated planning component has gradually increased in the programme while other Priority Actions have been concentrated on the preparation of methodological documents and training geared to the practical application of their results in the process of integrated planning and management of coastal areas.
3. While the earlier activities of PAP were oriented towards fact finding and case studies within selected priority topics, in the period 1988-1989 PAP has focused on the following:
  - further development and strengthening of PAP network of experts and institutions representing as equitably as possible all Mediterranean countries;
  - preparation of methodological documents, guidelines and codes of practice;
  - preparation of documents for training courses and organization of training focused on the practical application of knowledge and experience under specific Mediterranean conditions;
  - organization of seminars and workshops based on methodological documents and resulting in practical actions;
  - preparations for and implementation of co-operative projects in the fields of seismic risk reduction, soil erosion mapping and measurements, and environmentally sound planning and management of Mediterranean aquaculture.
4. In drafting programmes and carrying them out PAP/RAC has strived to accomplish its specific catalytic role and has enjoyed a generous support from a number of country administrations (Italy: Cooperative project on seismic risk reduction; Spain - ICONA; Cooperative project on soil erosion mapping and measurements: Spain - CIOEMAT; Cooperative network on renewable energy sources: Malta; Water resources management project: Cyprus, Egypt and Morocco: preparation of pilot EIAs: France - CEFIGRE: Training course on liquid waste treatment plants operation and maintenance: France - Municipality of Marseille: (a) action on 100 historic sites of common Mediterranean interest, and (b) preparation of training on environmentally sound approach to planning and design of waste treatment plants for big Mediterranean coastal cities: Syria, Turkey, Yugoslavia and Greece: preparation and implementation of PAP pilot projects). PAP/RAC has also enjoyed full support of

OCA/PAC-UNEP in the preparation and implementation of the action addressing EIA issues and in training on the application of ARC/INFO in the planning process.

5. Furthermore, PAP/RAC has sought to secure co-operation and, whenever possible, participation of relevant MAP and UNEP programmes, UN Agencies, and international institutions and organizations. This has enabled the use international knowledge, avoiding of duplication and overlapping of efforts, and rational use of limited funds.
6. The practice of organizing some seminars and workshops outside PAP/RAC offices has continued, owing to encouraging results achieved in the promotion of MAP and PAP activities in the host countries, and to the fact that a large number of local experts have had the opportunity to take part in these seminars and workshops.
7. Consolidation of the Centre has continued. Mention should be made, that the Federal Assembly of Yugoslavia adopted the Law of the Regional Activity Centre for the Priority Actions Programme in January 1989. This legal framework regulates the operation of the Centre and makes possible signing of the agreement between the Government hosting the Centre and UNEP on the Centre's role and function.
8. Difficulties faced in the implementation of the Programme has been the result of the current scarcity of Mediterranean Trust Funds. Therefore, some activities envisaged for 1988 had to be postponed. As the changes had to be reflected on the Project Document a number of revisions have been made weighing additionally upon the small staff of the Centre.
9. Outputs of individual actions have been sorted out, and some of them selected for translation into English/French and Arabic. Many of these outputs have been synthesized, edited and published as MAP Technical Reports Series. A list of PAP documents produced in the period 1985 - March 1989 has been sent to all PAP Focal Points.

#### Results achieved in Priority Actions

##### - Integrated Planning and Management of Mediterranean Coastal Zones

10. "Common Methodological Framework for the Process of Integrated Planning and Management of Mediterranean Coastal Areas" was prepared, and presented and discussed in the Meeting in Izmir in June 1988. It was later disseminated and used as the methodological basis for further activities.
11. Training documents on integrated planning were prepared and used for training in PAP CPPs. A training programme was prepared on the use of adequate software and PC hardware in the planning process under the Mediterranean conditions.
12. Preparations were made for the introduction of the integrated planning in the PAP CPPs, and initial studies were made for the potential new CPPs.

- Application of Environmental Impact Assessment in the Development of Mediterranean Coastal Zones
- 13. In co-operation with OCA/PAC and Med Pol a Practical Approach to the EIA was prepared for the application in the Mediterranean countries, as well as Guidelines for the preparation of EIAs for marinas, touristic complexes, wastewater treatment plants and submarine outfalls. In co-operation with national experts and on the basis of those documents, 2 pilot EIAs were prepared in Cyprus, and an expert meeting was organized for the presentation and evaluation of those EIAs. That meeting also evaluated and amended the Practical Approach and Guidelines.
- 14. At the moment and on the same basis, three pilot EIAs are in preparation in Morocco, and two in Egypt.
- 15. In co-operation with and under the guidance of OCA/PAC, an inter-regional meeting on the application of EIA is also being prepared, to be held in November 1989 in Cairo and Alexandria.
- Water Resources Management in Mediterranean Islands and Isolated Coastal Zones
- 16. In co-operation with institutions of the host-country, the project proposal of Water Resources Management of the Island of Malta was prepared, the outside financial support was secured, the tender for an international competition was prepared, and the technical side of the received offers was analyzed. Within this activity, a special attention was given to the preparation of a general aquifer model for Mediterranean islands, to be used for training purposes.
- 17. Guidelines on reuse of urban wastewater for agricultural purposes in Mediterranean countries are being prepared in co-operation with FAO and WHO.
- 18. The preparation of the Manual on Water Resources Management in Mediterranean Islands and Coastal Areas had to be postponed due to the lack of funds.
- Rehabilitation and Reconstruction of Mediterranean Historic Settlements
- 19. Methodological documents were prepared, and a Workshop on Methodology of Analyzing the Spatial Development of Mediterranean Historic Sites organized. A workshop is in preparation on evaluation and improvement of urban architectural heritage.
- 20. "Guidelines for the Study, Protection, Planning and Management of Mediterranean Historic Sites" was prepared and presented in the meeting on 100 Historic Sites of Common Mediterranean Interest held in Marseille in January 1989.
- 21. A draft synthesis of the methodological documents on the preparation of architectural survey, analysis of the actual state, and of spatial development of Mediterranean historic sites was also prepared, to be presented in a workshop in October 1989.

- Land-Use Planning in Earthquake Zones

22. The final version of the Project for Seismic Risk Reduction in the Mediterranean Region was prepared in co-operation with UNDR0 and UNDP. The first meeting of the project steering committee was organized in Genoa in April 1988. With the support by the Italian Government and the Municipality, Genoa has become the seat of the project, and its implementation started as a UNDP project. As a part of its contribution to this project, PAP is preparing documents on the implementation of seismic risk mitigation measures in the process of integrated planning.

- Promotion of Soil Protection as an Essential Component of the Environmental Protection in the Mediterranean Coastal Zones

23. This action has been developing as a separate cooperative project hosted by Spain and ICONA (Instituto Nacional para la Conservacion de la Naturaleza, Madrid), in co-operation with ACSAD, FAO and UNEP.

24. In 1988, a number of reports and methodological documents on erosion mapping and measuring was prepared, and presented in the Workshop on the State of Rainfall Erosion (Murcia, November 1988). Two expert meetings were also organized in March 1989, which made the programme for the implementation of the 1st phase of the project (1990-1991), as well as the concept of the 2nd phase (1992-1995). The final version of the project document was reviewed by the Inter-Agency meeting (Split, 3-5 May 1989). Preparatory activities have been started for the selection of pilot areas, and for the organization of a workshop to conclude the preparatory phase of the project (Malaga, November 1989).

- Solid and Liquid Waste Collection, Disposal and Management

25. "Code of Practice for Environmentally Sound Management of Liquid Waste Discharge in the Mediterranean Sea" is being translated in French, while "Guide pratique pour la gestion des déchets solides urbains dans les pays riverains de la Méditerranée" is being translated in English. A workshop to evaluate these documents was convened in Split, 25-28 September 1989.

26. In co-operation with CEFIGRE (France) the documents for the training course on management and maintenance of urban waste treatment plants in the Mediterranean were prepared and the first course on the subject organized in December 1988. The preparations of the second course are under way, including the translation of the documents in French. A course on wastewater reuse is also in preparation (to be held in December 1989 or January 1990).

27. In co-operation with the Municipality of Marseille, a course is in preparation on an environmental approach to planning and design of liquid waste treatment plants for large Mediterranean cities.



- Development of Mediterranean Tourism Harmonized with the Environment

28. An expert meeting for the preparation of draft Guidelines for an Environmental Approach to the Planning and Management of Tourism Development in the Mediterranean Coastal Zones was held in Split in February 1988, specific documents from 6 countries were prepared as well as draft Guidelines. A workshop was held in Split on 29-31 May 1989.

- Environmental Planning and Management of Aquaculture in Mediterranean Conditions

29. A proposal of a cooperative project for this priority action was prepared jointly with FAO and MEDRAP in 1987. Since this project requires considerable outside financial support, it was offered to one of the Contracting Parties for hosting. Although all the possible initiatives were made it was not possible, so far, to get a definitive answer on the possibility of supporting this project. Therefore, for the next period, a limited programme is proposed to serve an input to the process of integrated planning.

- Mediterranean Network in Renewable Sources of Energy

30. This action has been hosted by Spain and CIEMAT (Centro de Investigaciones Energeticas, Medioambientales y Termologicas). The programme and documents of the training course on the practical application of renewable energy sources in the Mediterranean conditions were jointly prepared, and the course organized in Almeria in November-December 1988.

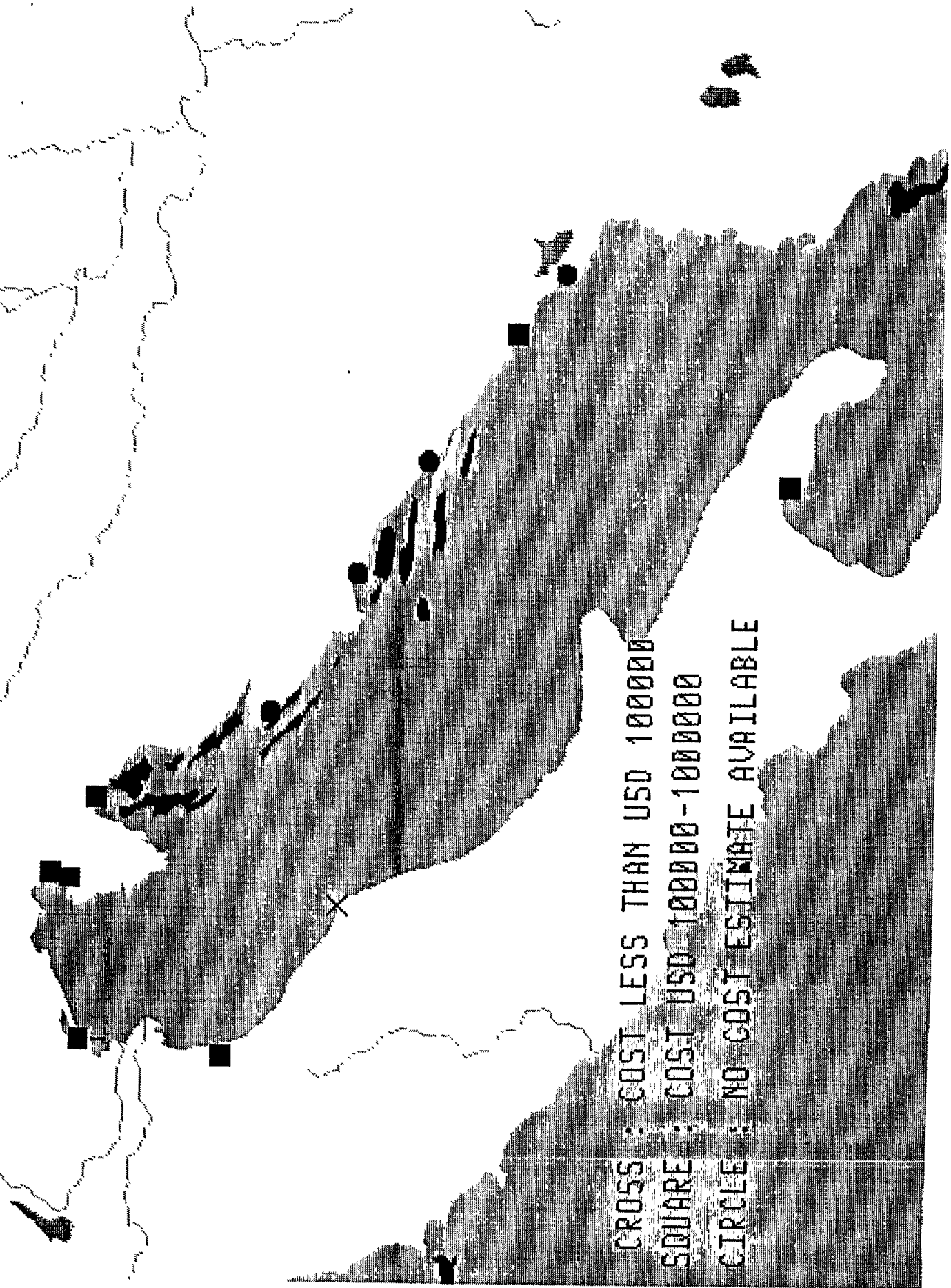
31. The documents are being translated in French and the preparation of the second course (in French and English) is under way. The course is to be held in Madrid and Almeria in November 1989.

32. The document "The Role of Renewable Energy Sources in the Integrated Planning of Mediterranean Coastal Zones" is also in preparation.

ANNEX XV

MAP REPRESENTATION OF THE ITALIAN (ADRIATIC REGION)  
AND THE YUGOSLAV PORT RECEPTION FACILITIES

# PORT FACILITIES OF ADRIATIC REGION



CROSS : COST LESS THAN USD 100000  
SQUARE : COST USD 100000 - 1000000  
CIRCLE : NO COST ESTIMATE AVAILBLE

ANNEX XV  
 LOCATION OF PORT RECEPTION FACILITIES OF THE ADRIATIC REGION

STATUS AS OF: SEPTEMBER 26, 1989

Code 001: Cost up to US\$ 100,000  
 Code 002: Cost up to US\$ 1,000,000  
 Code 003: No estimate available

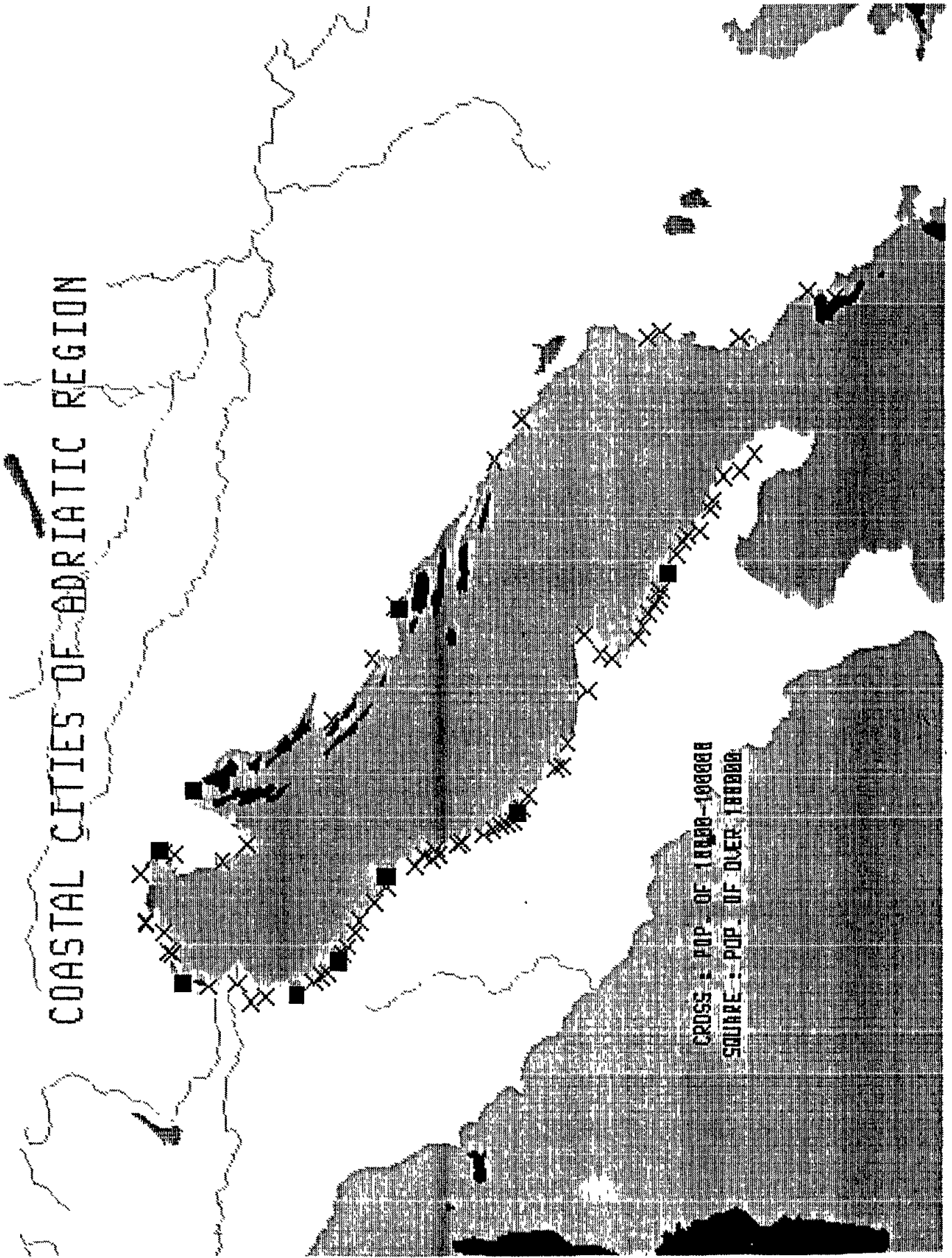
Total no. of entries: 11  
 No. of ports with code 001: 1  
 No. of ports with code 002: 6  
 No. of ports with code 003: 4

CODE	MEDITERRANEAN PORT	COUNTRY	CONSTRUCTION COST ( X \$1000)	LATITUDE		LONGITUDE	
				dd	mm	dd	mm
001	Ancona	ITA	50	43	37	13	31 E
002	Ravenna	ITA	700	44	25	12	12 E
002	Trieste	ITA	6100	45	39	13	47 E
002	Venice	ITA	2200	45	26	12	20 E
003	Bar	YUG	-	42	5	19	6 E
002	Bijela	YUG	400	42	25	18	35 E
003	Kardeljevo	YUG	-	43	2	17	27 E
002	Koper	YUG	130	45	31	13	44 E
002	Rijeka	YUG	350	45	20	14	27 E
003	Split	YUG		43	31	16	28 E
003	Zadar	YUG		44	7	15	14 E

ANNEX XVI

MAP REPRESENTATION OF THE ALBANIAN, GREEK (NORTH IONIAN REGION),  
ITALIAN (ADRIATIC REGION) AND YUGOSLAV COASTAL CITIES

COASTAL CITIES OF ADRIATIC REGION



CROSS = POP. OF 10000-100000  
SQUARE = POP. OF OVER 100000

ANNEX XVI  
COASTAL CITIES OF THE ADRIATIC REGION

STATUS AS OF SEPTEMBER 26, 1989

Code 001: Population 10,000 to 100,000  
Code 002: Population above 100,000

No. of cities with code 001: 69  
No. of cities with code 002: 9  
Total no. of cities : 78  
Total Population (X 1000) : 3919

CODE	COASTAL CITY	COUNTRY	POPULATION ( X 1000)	LATITUDE		LONGITUDE	
				dd	mm	dd	mm
001	Durres	Alb	73	41	18	19	28 E
001	Kavaje	Alb	22	41	11	19	33 E
001	Sarande	Alb	12	39	53	20	0 E
001	Vlore	Alb	60	40	29	19	29 E
001	Kerkyra	Gre	37	39	38	19	55 E
002	Ancona	Ita	105	43	37	13	31 E
002	Bari	Ita	368	41	7	16	52 E
001	Barletta	Ita	86	41	20	16	17 E
001	Bellaria-Igea Marina	Ita	12	44	9	12	27 E
001	Bisceglie	Ita	47	41	14	16	31 E
001	Brindisi	Ita	92	40	37	17	57 E
001	Caorle	Ita	12	45	36	12	53 E
001	Carovigno	Ita	14	40	43	17	40 E
001	Cattolica	Ita	16	43	58	12	44 E
001	Cervia	Ita	25	44	16	12	21 E
001	Cesenatico	Ita	20	44	12	12	24 E
001	Chioggia	Ita	54	45	13	12	17 E
001	Civitanova Marche	Ita	36	43	17	13	44 E
001	Codigoro	Ita	15	44	50	12	7 E
001	Commacchio	Ita	21	44	42	12	11 E
001	Eraclea	Ita	12	45	34	12	40 E
001	Falconara Marittima	Ita	31	43	37	13	23 E
001	Fano	Ita	52	43	51	13	1 E
001	Fasano	Ita	37	40	50	17	21 E
001	Fermo	Ita	35	43	9	13	44 E
001	Franravilla al mare	Ita	19	42	25	14	16 E
001	Giovinazzo	Ita	21	41	11	16	40 E
001	Giulianova	Ita	22	42	45	13	58 E
001	Grottammare	Ita	12	42	59	13	52 E
001	Iesolo	Ita	22	45	32	12	39 E
001	Latisana	Ita	11	45	46	13	0 E
001	Lecce	Ita	95	40	21	18	11 E
001	Manfredonia	Ita	57	41	37	15	55 E
001	Margherita di Savoia	Ita	12	41	23	16	9 E
001	Mola di Bari	Ita	27	41	3	17	5 E
001	Molfetta	Ita	65	41	12	16	36 E
001	Monfalcone	Ita	30	45	49	13	32 E
001	Monopoli	Ita	45	40	57	17	18 E

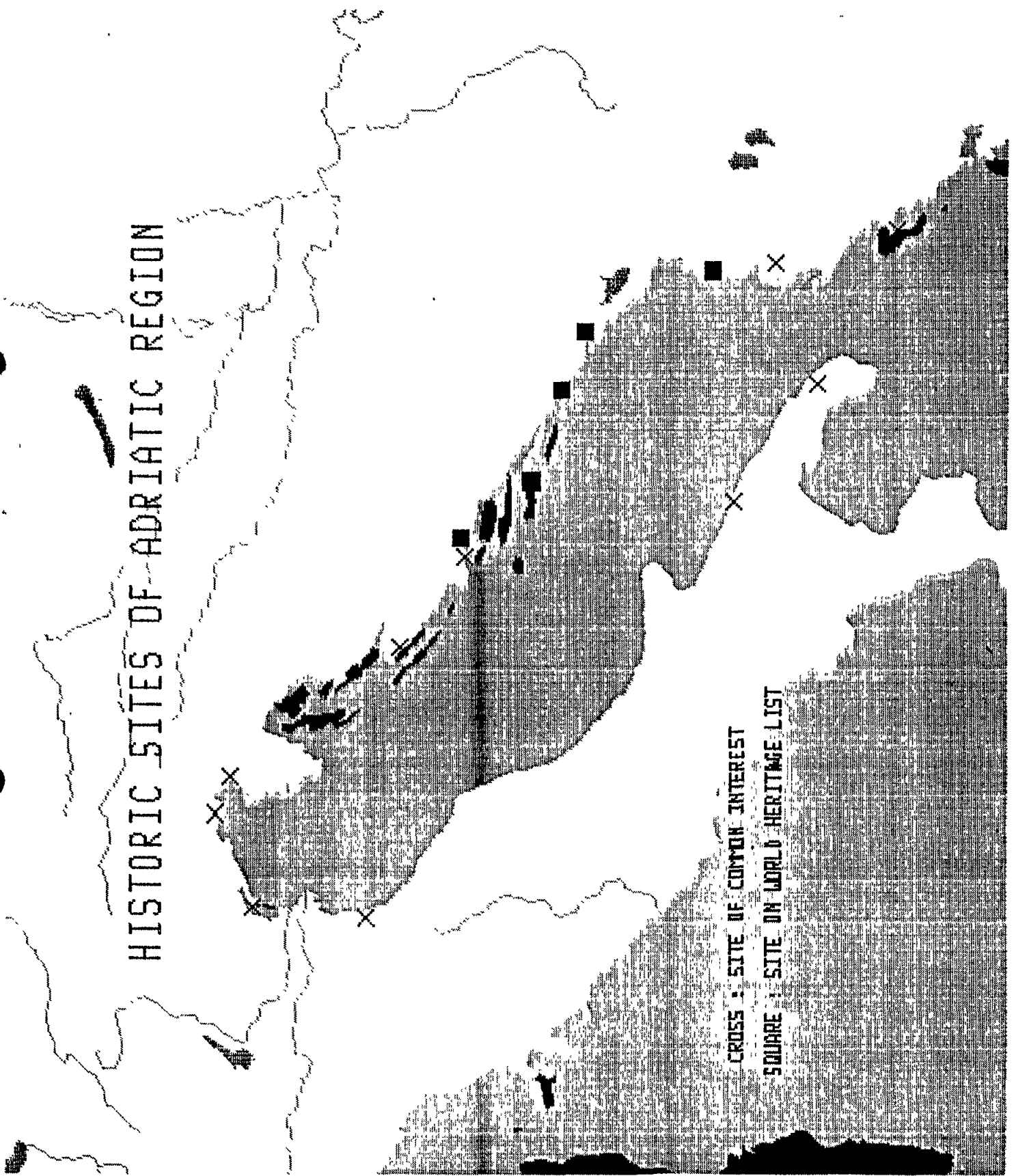
CODE	COASTAL CITY	COUNTRY	POPULATION ( X 1000)	LATITUDE		LONGITUDE	
				dd	mm	dd	mm
001	Monte Sant'Angelo	Ita	17	41	43	15	58 E
001	Montesilvano	Ita	31	42	29	14	8 E
001	Muggia	Ita	14	45	36	13	46 E
001	Ortona	Ita	22	42	21	14	24 E
001	Ostuni	Ita	32	40	44	17	35 E
001	Pesaro	Ita	91	43	54	12	54 E
002	Pescara	Ita	132	42	27	14	13 E
001	Pineto	Ita	11	42	36	14	4 E
001	Polignano a Mare	Ita	15	40	59	17	13 E
001	Porto San Giorgio	Ita	16	43	11	13	49 E
001	Porto Tolle	Ita	11	44	57	12	20 E
001	Potenza Picena	Ita	13	43	22	13	37 E
002	Ravenna	Ita	137	44	25	12	12 E
001	Riccione	Ita	32	44	0	12	39 E
002	Rimini	Ita	130	44	3	12	34 E
001	Roseto degli Abruzzi	Ita	22	42	40	14	2 E
001	San Benedetto del Tronto	Ita	46	42	57	13	53 E
001	San Elpidio a Mare	Ita	20	43	13	13	42 E
001	San Michele al Tagliamento	Ita	12	45	46	12	59 E
001	San Pietro Vernotico	Ita	16	40	28	18	0 E
001	San Salvo	Ita	14	42	3	14	44 E
001	Sannicandro Garganico	Ita	19	41	50	15	34 E
001	Senigallia	Ita	41	43	43	13	13 E
001	Silvi	Ita	11	42	33	14	6 E
001	Termoli	Ita	25	42	0	15	0 E
001	Trani	Ita	46	41	17	16	25 E
002	Trieste	Ita	244	45	39	13	47 E
001	Vasto	Ita	32	42	7	14	43 E
002	Venezia	Ita	337	45	26	12	20 E
001	Vieste	Ita	13	41	52	16	11 E
001	Dubrovnik	Yug	44	42	40	18	7 E
001	Herceg Novi	Yug	12	42	26	18	35 E
001	Koper	Yug	24	45	31	13	44 E
001	Pula	Yug	56	44	52	13	52 E
002	Rijeka	Yug	159	45	20	14	27 E
001	Rovinj	Yug	11	45	5	13	40 E
001	Sibenik	Yug	37	43	45	15	55 E
001	Solin	Yug	13	43	33	16	30 E
002	Split	Yug	169	43	31	16	28 E
001	Zadar	Yug	60	44	7	15	14 E



ANNEX XVII

MAP REPRESENTATION OF THE ALBANIAN, GREEK (NORTH IONIAN REGION),  
ITALIAN, (ADRIATIC REGION) AND YUGOSLAV HISTORIC SITES

HISTORIC SITES OF ADRIATIC REGION



CROSS : SITE OF COMMON INTEREST

SQUARE : SITE ON WORLD HERITAGE LIST

ANNEX XVII  
HISTORIC SITES OF THE ADRIATIC REGION

STATUS AS OF: SEPTEMBER 26, 1989

Code 001: Historic site of common interest  
Code 002: Site on the World Heritage List

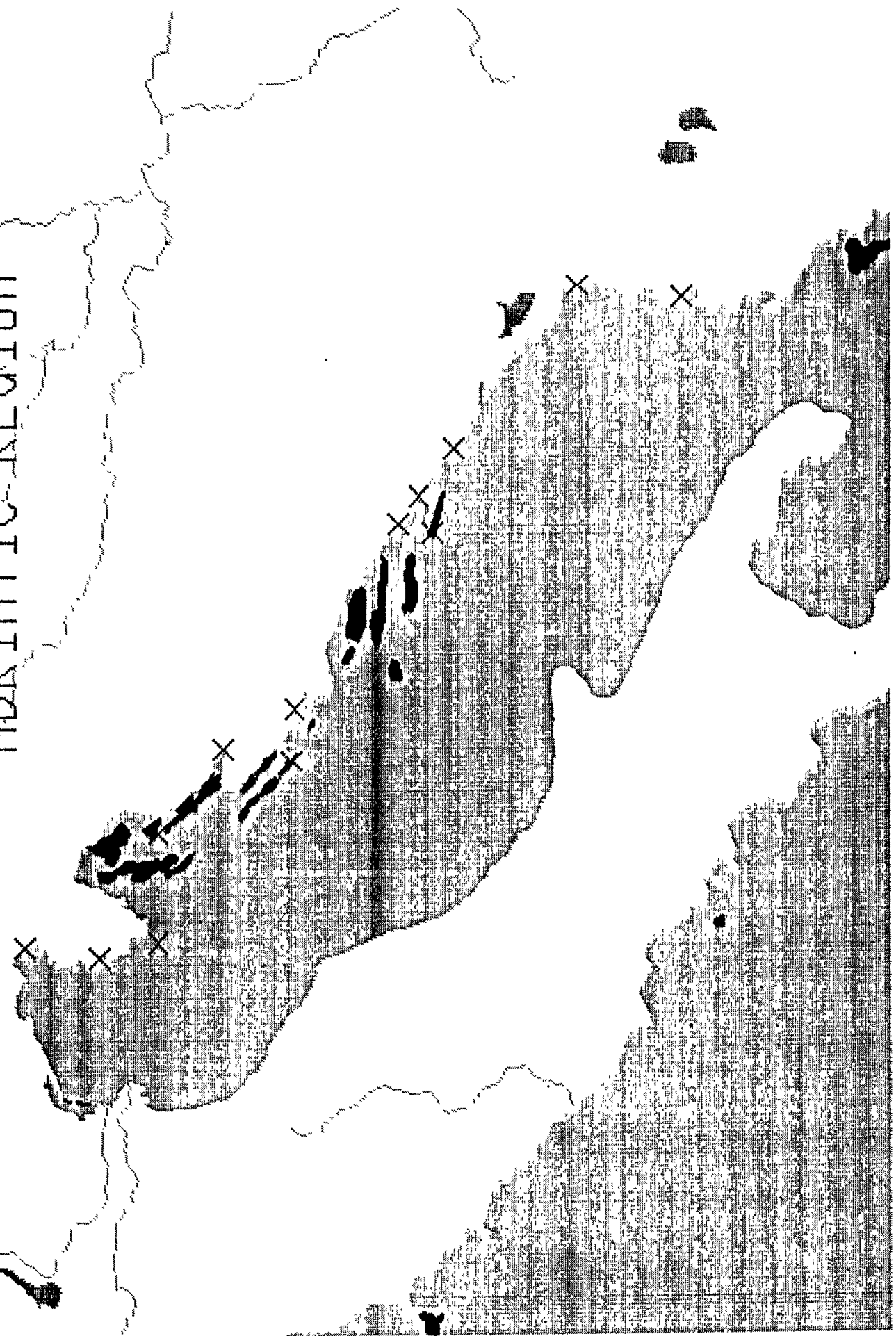
Total no of entries: 14  
No. of sites with code 001: 9  
No. of sites with code 002: 5

CODE HISTORIC SITE	COUNTRY	LATITUDE		LONGITUDE	
		dd	mm	dd	mm
001 (Apollonia)	Alb	40	44	19	33 E
002 (Dyrrachion)	Alb	41	18	19	28 E
001 Corfu	Gre	39	38	19	55 E
001 Agrigento	Ita	37	19	13	35 E
001 Bari	Ita	41	7	16	52 E
001 Lecce	Ita	40	21	18	11 E
001 Ravenna	Ita	44	25	12	12 E
001 Trieste	Ita	45	39	13	47 E
001 Venice and its lagoon	Ita	45	26	12	20 E
002 Dubrovnik	Yug	42	40	18	7 E
002 Hvar and Korcula	Yug	42	56	17	5 E
002 Kotor	Yug	42	27	18	46 E
002 Split	Yug	43	34	16	28 E
001 Trogir (natural/cultural)	Yug	43	32	16	15 E
001 Zadar (natural/cultural)	Yug	44	7	15	14 E

ANNEX XVIII

MAP REPRESENTATION OF THE ITALIAN (ADRIATIC REGION)  
AND YUGOSLAV SPECIALLY PROTECTED AREAS

SPECIALLY PROTECTED AREAS OF  
ADRIATIC REGION



ANNEX XVIII  
SPECIALLY PROTECTED AREAS OF THE ADRIATIC REGION

STATUS AS OF: SEPTEMBER 26, 1989

Total no. of entries: 13

LOCATION OF SPA SITE	COUNTRY	LATITUDE		LONGITUDE	
		dd	mm	dd	mm
Divjaka Nature Reserve	Alb	41	0	19	27 E
Kune Nature Reserve	Alb	41	45	19	33 E
Miramare Marine Reserve	Ita	45	42	13	42 E
Brioni Islands National Park	Yug	44	45	13	45 E
Kornati Islands	Yug	43	48	15	21 E
Krka National Park	Yug	43	46	15	49 E
Limski Zaljev Nature Reserve	Yug	45	10	13	37 E
Lokrum Nature Reserve	Yug	42	38	18	7 E
Malostonski Zaljev Nature Reserve	Yug	42	53	17	42 E
Mljet National Park	Yug	42	47	17	22 E
Neretva Delta Nature Reserve	Yug	43	2	17	27 E
Paklenica National Park	Yug	44	17	15	27 E
Suma Dundo Na Rabu Nature Reserve	Yug	44	45	14	42 E

ANNEX XIX

PAPERS PRESENTED AT THE JOINT MEETING OF THE TASK TEAM  
ON IMPLICATIONS OF CLIMATIC CHANGES IN THE MEDITERRANEAN  
AND THE CO-ORDINATORS OF TASK TEAMS FOR THE  
CARIBBEAN, SOUTH-EAST PACIFIC, SOUTH PACIFIC,  
EAST ASIAN SEAS AND SOUTH ASIAN SEAS REGIONS  
SPLIT, 3-8 OCTOBER 1988

ANNEX XIX

PAPERS PRESENTED AT THE JOINT MEETING OF THE TASK TEAM  
ON IMPLICATIONS OF CLIMATIC CHANGES IN THE MEDITERRANEAN AND THE  
COORDINATORS OF TASK TEAMS FOR THE CARIBBEAN, SOUTH-EAST PACIFIC,  
EAST ASIAN SEAS AND SOUTH ASIAN SEAS REGIONS  
SPLIT, 3-8 OCTOBER 1988

- Bach, W., Isopleth maps on mean monthly and annual data of the GISS-GCM programme for the Mediterranean (UNEP(OCA)/WG.2/17).
- Baric, A. and F. Gasparovic, Implications of climatic changes on the socio-economic activities in the Mediterranean coastal zone (UNEP(OCA)/WG.2/12).
- Corre, J.J., Implications des changements climatiques dans le Golfe du Lion (UNEP(OCA)/WG.2/4 F).
- Elder, D., A. Jeudy de Grissac, Effects of the sea-level rise on coastal ecosystems including those under special protection and threatened and migratory species (UNEP(OCA)/WG.2/5).
- Flemming, N., Predictions of relative coastal sea-level change in the Mediterranean based on archaeological, historical and tide gauge data (UNEP(OCA)/WG.2/13).
- Gacic, M., T. Hopkins, A. Iascaratos, Physical oceanography aspects and changes in circulation and stratification (UNEP(OCA)/WG.2/16).
- Georgas, D. and C. Perissoratis, Implications of future climatic changes on the Inner Thermaikos Gulf (UNEP(OCA)/WG.2/9).
- Hollis, G.E., Implications of climatic changes on the Garaet el Ichkeul and Lac de Bizerte, Tunisia (UNEP(OCA)/WG.2/2).
- Imeson, A.C., I.M. Immer, Implications of climatic change on land degradation in the Mediterranean (UNEP(OCA)/WG.2/7).
- IOC/CPPS/UNEP Task Team, Implications of climatic changes in the South-East Pacific region (UNEP(OCA)/WG.2/22).
- IOC/UNEP Task Team, Implications of climatic changes in the South Asian Seas region (UNEP(OCA)/WG.2/23).
- Jelgersma, S. and G. Sestini, Impact of a future rise in sea level on the coastal lowlands of the Mediterranean (UNEP(OCA)/WG.2/10).
- Le Houérou, H.N., Change in vegetation and land-use by the year 2050; a prospective study (UNEP(OCA)/WG.2/15).



Marino, M.G., Implications of climatic changes on the Ebro delta (UNEP(OCA)/WG.2/3).

Sestini, G., Implications of climatic changes on the Po delta and Venice Lagoon(UNEP(OCA)/WG.2/11).

Sestini, G., Implications of climatic changes on the Nile delta (UNEP(OCA)/WG.2/14).

Shröder, P.C., The impact of sea-level rise on society: a management approach (UNEP(OCA)/WG.2/19).

Simonetti, O., Preliminary report on the GRID Mediterranean case studies (UNEP(OCA)/WG.2/8).

Task Team for South Asian Seas region, Report of the Co-ordinator (UNEP(OCA)/WG.2/23 Add.1).

Task Team of the Association of South Pacific Environmental Institutions, Interim report on Potential impacts of greenhouse gas generated climatic change and projected sea-level rise on Pacific Island States of the SPREP region (UNEP(OCA)/WG.2/20).

Task Team of the Caribbean Environment Programme, Implications of climatic changes in the Wider Caribbean region (UNEP(OCA)/WG.2/21).

UNEP/MEDU, Bibliography on effects of climatic change and related topics (UNEP(OCA)/WG.2/18).

Wigley, T.M.L., Future climate of the Mediterranean Basin, with particular emphasis on changes in precipitation (UNEP(OCA)/WG.2/6).

ANNEX XX

SUMMARY OF DIRECT FINANCIAL INPUTS

ANNEX XX  
SUMMARY OF DIRECT FINANCIAL INPUTS

ACTIVITY	UNEP/MAP US dollars	Counterpart equivalent US dollars
2.1 MED POL-Phase I	18,780	n.a
MED POL-Phase II	249,616	n.a
2.2.1 Monitoring	360,000	700,000
2.2.3 Research	132,120 438,350	n.a n.a
2.2.4 Jellyfish	200,000	n.a
2.2.6 Training and fellowships	100,000	n.a
3.1 Priority Actions Programme(PAP)	2,606,000 <sup>(1)</sup>	1,485,000 <sup>(1)</sup>
4.1 Port reception facilities (Rijeka)	250,000 <sup>(2)</sup>	500,000(est.)
8. Climatic changes	50,000	50,000
	4,404,866	2,735,000

(1) Includes PAP activities outside Adriatic  
(2) EEC

n.a = details not available