

**Report of the Executive Director**  
**(December 1995 - April 1996)**

Since the last report of the Executive Director submitted to the Governing Board at Puntarenas in December 1995 the following developments have taken place.

**UNDP Project (GEF I)**

The UNDP Project has expired for IOI Headquarters, Madras and Fiji but will be operational for IOIs Costa Rica and Senegal till 1997-98. The amount sanctioned for Headquarters for networking i.e. Directors/Vice Chancellors Meeting, travel expenses of Executive Director and Honorary Chairman, costs of issuing newsletter and PR brochures is thus not available from Project Funds. The impact of this on the financial position of IOI is explained later.

The Executive Director and Ms. Anita Coady, Member Governing Board of IOI, visited Dakar from 17-24 March, 1996. The report of the Executive Director has been submitted to UNDP and may be seen at Appendix I. The report of Ms. Anita Coady to the Governing Board is being separately circulated.

The visit to IOI Senegal revealed that IOI Senegal has done good work in translating and adapting IOI courses into French. IOI Senegal also enjoys the support of the Government of Senegal and there are good possibilities for IOI Senegal becoming self sustaining by:

- raising \$ 10 million from Japan for laboratories and accomodation for participants in training courses;
- tapping UNDP Dakar for regional funds meant for South-South cooperation;
- tapping CIDA and IDRC for funds;
- taking up a bio-villages and eco-technology project.

**UNDP Project (GEF II)**

As already reported, a short project brief for a project of \$ 4.8 million was submitted to UNDP. The strategy for GEF II has been radically altered so that very little money is available for global and inter-regional projects. Most of the money is now earmarked for so-called country-driven projects. As a result there are very slim chances of IOIs Project of \$ 4.8 million being approved.

However it is likely that IOI may get approximately \$ 1.5 million for opening three new centres under Train-Seacoast. This would be a joint venture project with UNDP and UNDOALOS. This matter was discussed by the Honorary Chairman and the Executive Director with Mr. Philip Reynolds of UNDP and Ms. Stella Maris Vallejo of UNDOALOS in New York on 27 February where they had both gone for

the Seminar on Oceans for the delegates to the Commission on Sustainable Development. Initial reactions of GEF Secretariat to the joint project have been favourable.

### **Eco-technology and bio-villages project**

The Honorary Chairman and the Executive Director attended an international seminar on "Ecotechnology and Shaping the Future" organised by UNESCO and the MS Swaminathan Foundation in Madras from 4-8 February, 1996. The Honorary Chairman presided over one of the sessions while the Executive Director presented a paper on the Networking Experience of IOI.

During the Workshop IOI made good contacts with Dr. Mohammed El-Ashry, former Minister of Environment, Japan and a possible future Prime Minister. Both of them, as also Prof. Federico Mayor, visited IOI Madras and were very impressed with the work done and the facilities available to IOI from I.I.T. Madras.

During the course of the Workshop and through informal discussions with Dr. El-Ashry, Dr. M.S. Swaminathan and Prof. Federico Mayor the idea of extending the ecotechnology concept to the coastal area was hammered out. A draft project proposal on the extension of Ecotechnology to coastal villages has been prepared (proposal at Appendix II) for discussion with GEF in Washington. IOIs Costa Rica, Fiji, Madras and Senegal have agreed to the Project while M.S. Swaminathan Foundation will be IOIs partner in the Project. Approval of the Governments of India, Senegal, Costa Rica and Fiji is being sought for the project so that it can be "country-driven".

### **CIDA**

The CIDA support to IOI of CA \$ 325,000 a year for the years 1993-95 was reduced to CA \$ 250,000 for 1995 due to financial cuts in CIDA's budget. CIDA has since agreed to extend support IOI to the extent of CA \$ 200,000 a year for the years 1996-98.

### **PIM XXIII**

PIM XXIII was held successfully in Puntarenas, Costa Rica in December, 1995. All the local costs were arranged by IOI Costa Rica and Headquarters had to pay \$ 53,000 for external travel of participants other than Directors/Vice Chancellors whose costs were met from UNDP Project Funds.

### **Financial Position of IOI**

The audit of IOI's accounts has not yet been completed. But the financial position at the end of 1995 should be roughly in balance.

The position for 1996 is however not too good. Though the position of the IOI Centres is quite favourable, the same is not true of Headquarters. An extract from the note submitted to the Board in December 1995 is reproduced below:

IOI has serious deficiencies in funds for administration. At the moment IOI has the following unattached amounts:

CIDA	US\$ 240,000
Donations	US\$ 220,000

The CIDA amount plus some more has to go to IOI Halifax as otherwise IOI would end up with no CIDA money at all. In 1995 this left less than US\$ 200,000 for Malta. This just about covered establishment expenses leaving no money even for Board meetings. In the past 2 years Prof. Borgese has contributed over \$ 150,000 and this has helped to tide over the crisis.

**Serious thought needs to be given as to how to raise another \$ 200,000 a year to cover Board Meetings, augmentation of headquarters staff and visits by Board Members to operational centres. UNDP and other institutional donors do not usually fund such expenses.**

Since the above note was written, the position has worsened. CIDA has reduced its annual contribution from US\$ 240,000 to US\$ 150,000. Also for PIM XXIV there would be need for US\$ 90,000 - 100,000 to fund external travel including that of Governing Board Members, invited Speakers and Directors of IOI Centres.

During the last meeting of the Governing Board, Ms. Anita Coady and Mr. Nikolaus Gelpke had volunteered to approach potential donors. A fundraising Committee consisted of Prof. Busuttill (Chairman), Amb. Bhagwat Singh and Mr. Maxwell Bruce was set up in 1993.

The Board Members need to seriously consider the above financial position. The matter is also being put up to the next Executive Committee meeting to be held on 14 May, 1996 in Malta.

A P P E N D I X I

Report of the visit of Dr. K. Saigal  
Executive Director, International Ocean Institute (IOI)  
to IOI Senegal, Dakar  
17-24 March, 1996

<u>Contents</u>		Page(s)
<b>Introduction</b>		<b>1</b>
Programme in Dakar		1
Implementation of the Workplan IOI Senegal		2
Physical Outputs		3
Train-Seacoast		3
Future Strategy and sustainability of IOI Senegal		4
Summing up		5
<b><u>Annexes</u></b>		
Annex A	- Syllabus of 6-week course on the Planning and Management of the Coastal Zone including the Exclusive Economic Zone, 18 March to 27 April, 1996 in Dakar, Senegal	6
Annex B	- List of participants of the 6-week course on the Planning and Management of the Coastal Zone including the Exclusive Economic Zone, 18 March to 27 April, 1996 in Dakar, Senegal	18
Annex C	- Syllabus of 2-week course on the Integrated Management of the Coastal Zone including the Exclusive Economic Zone, 18 to 29 September, 1995 in Dakar, Senegal	20
Annex D	- List of participants of the 2-week course on the Integrated Management of the Coastal Zone including the Exclusive Economic Zone, 18 to 29 September, 1995 in Dakar, Senegal	24
Annex E	- Course report of the 2-week course on the Integrated Management of the Coastal Zone including the Exclusive Economic Zone, 18 to 29 September, 1995, Dakar, Senegal	28

Annex F	-	Ms. Anita Coady's report on the visit to the International Ocean Institute, Operational Centre in Dakar, Senegal, March 18 to 22 March, 1996	31
Annex G	-	Detailed time table of Train-Seacoast programme	36

## **Introduction**

I visited Dakar from 17-24 March, 1996. I was joined in Dakar from 18-22 March by Ms. Anita Coady, Editor of Across the Oceans and Member of the Governing Board of IOI.

Ms. Coady, who is fluent in French, was also involved in the conducting of IOI courses for nearly 10 years up to 1991. The two of us worked as a Team for purposes of discussions with the various personalities involved.

The intention of the visit was to review the Workplan of IOI Senegal, chalk out a strategy for the future and look into the sustainability of the IOI Centre.

## **Programme in Dakar**

The Team participated in the opening ceremony of the 6-week course on the Planning and Management of the Coastal Zone including the Exclusive Economic Zone, attended some of the lectures in the first week of the course and both formally and informally discussed the course contents with the participants and faculty. There were, of course, in depth discussions with Dr. Toure. The syllabus of the course is at Annex A and the list of participants at Annex B.

The Team also reviewed the materials prepared for the first 2-week course conducted by IOI Senegal from 18-29 September, 1995 on the Integrated Management of the Coastal Zone, including the Exclusive Economic Zone. The Team also went through the syllabus of the course (Annex C), the list of participants (Annex D), and the report on the course (Annex E).

The Team also had discussions regarding IOI Senegal with:

- Mr. Alassane Dially Ndiaye, Minister of Fisheries and Marine Transport, Government of Senegal;
- Mr. Bara Mbengue, Director du Cabinet to the Minister of Agriculture;
- Dr. Papa Abdoulaye Seck, representative of Director General, ISRA;
- Dr. Salif Diop, Coordinator of the UNDP/UNESCO COMARAF Project who along with his team assisted in the development of the materials for the two courses;
- Dr. Tafsin Malick Ndiaye, the specialist on Ocean Law;
- Dr. Bakary Kante, the Director of Environment;
- Mr. Mamadou Mamoune MBacke, the Director of Programmes, UNDP, Dakar;
- Mr. Keiichi Hara, the Embassy of Japan, Dakar;



- Mr. Toru Togawa, Bureau Chief, Japanese International Cooperation Agency, Dakar;
- Mr. Alioune B. Camara, Regional Programme Officer, IDRC, Dakar;
- The Representative of CIDA, Dakar.

Ms. Anita Coady has given a separate report which is being put up to the Governing Board of IOI (report at Annex F). As will be seen the comments of Ms. Anita Coady (page 5 of Annex F) they do not significantly differ from what I have to say. Her main conclusions are:

- IOI is in the very capable hands of Dr. Diafara Toure.
- the elaboration and production of course materials in French is of very high quality.
- the course development team draws its membership from an impressive network.
- IOI Senegal is well positioned to meet the challenges ahead.

#### Implementation of the Workplan IOI Senegal

The position of the IOI Workplan in both financial and physical terms and as executed up to 31.3.96 is as below:

#### Cash Flow Projections (UNDP funds), 1995-1997

CODE	TITLE	Workplan 1995-97	Likely expenditure of IOI up to 31 March, 1996*
1.1.3a	Information Dissemination:- Brochures	3.0	6.2
1.1.4b	Programme Development (Travel): Director	6.0	13.8
2.1.1a	Development of Research Programme	5.0	5.2
2.1.2a	Curriculum Development	50.0	43.9
2.1.2b	Training of Trainers	16.0	5.4
2.1.3a	Courses	200.0	89.1
2.1.3b	Alumni	10.0	-
2.1.3c	Leaders	30.0	-

	<b>TOTAL</b>	<b>320.0</b>	<b>163.6</b>
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\* Estimate only exact figures will be known after audit.

### Physical Outputs

Workplan 1995-97	580 trainee weeks
Achievement up to 31.3.96 1995	46 trainee weeks
1996 (6-week course)	144 trainee weeks
To translate IOI courses into into French	Largely done
Train 3 persons in pedagogy of Train-x	Done

As can be seen from the above, it seems that the achievement of the physical target of trainee-weeks is likely to be less than originally targeted. I pointed this out to Dr. Toure. His explanation was that the second course turned out to be more expensive than originally budgeted largely due to the cost of accomodation. Though he had managed a substantial discount at a downtown hotel, still the costs tended to be higher than anticipated. He, however, promised to try and achieve the physical targets before the Project ended.

As regards the course material, Ms. Coady who reviewed the materials of the first two-week course (an IOI course) was of the view that the course materials, if anything, exceded IOI standards because they were adapted to the region and so more contextual that the so-called "international" IOI courses. I reviewed the economics and management section of the material and found it to be up to standard.

The points brought out during the evaluation of the first 2-week course, namely, the attaching of more importance to case studies and workshops, the development of a manual dealing with the fundamentals, and the incorporation of sociology courses in the curriculum has been done for the current 6-week course.

As regards course development, full use has been made of resource persons from COMARAF, the University of Senegal, UNIDEP, and UN African Regional Centre for Technology. Dr. Salif Diop and Dr. Bakary Kante had a good opinion of the course as it had been developed. The participants of the 6-week course, who were informally interviewed by Ms. Coady, were also very satisfied with the first week's lectures.

### Train-Seacoast

We also discussed the question of Train-Seacoast with Dr. Toure. It was agreed that IOI Senegal would include the Train-Seacoast course "Harmonisation of Legislation on Sustainable Development of Fisheries in West Africa" in the Workplan instead of the present course "Law of the Sea: African perspectives". The course would be conducted towards the end of 1996. The detailed time table is at Annex G.

### **Future strategy and sustainability of IOI Senegal**

This matter was discussed at great length not only with Dr. Toure but also at the Ministerial level with the Government of Senegal,

UNDP Dakar, the COMARAF group, Dr. Bakary Kante and the representatives of the University of Senegal. The following points emerged during these discussions:

- (i) the Government of Senegal, the University of Senegal and COMARAF were fully supportive of IOI Senegal;
- (ii) Dr. Toure had a special position in the scientific community as he was the President of the Association of Research Scientists of Senegal and this enabled him to assemble a good resource team;
- (iii) UNDP, Dakar had a major project for South-South cooperation and so would like to use IOI Senegal for training activities in West Africa;
- (iv) there was need for a hostel for participants from West African countries as otherwise training tended to be somewhat costly;
- (v) there was need for IOI Senegal to work at the village level so as to generate ground-level data for transmission to policy makers and for use in their training courses.

In view of the above, the Team along with Dr. Toure met representatives of JICA, the Japanese Embassy, CIDA and IDRC (Canada). When what was being done by IOI Senegal was explained to these donors, the response was found to be extremely good and there were indications that Japan may be able to fund a building, including laboratories, for CRODT for running training programmes and for dissemination of information in W. Africa (cost about US\$ 10 million). The Japanese Embassy has also a small grants window which can give up to US\$ 50,000 to NGOs for equipment etc. The response from CIDA and IDRC was also very positive.

Dr. Toure was advised to:

- (i) establish an Advisory Committee for IOI Senegal, if possible under the Minister for Agriculture so that a long-term strategy, including fund-raising, could be established for IOI Senegal;

- (ii) prepare a project proposal for US\$ 10 million for submission by Government of Senegal to Government of Japan through the Japanese Embassy in Dakar on the lines of the one prepared by IOI South Pacific for the Government of Fiji;
- (iii) submit reports on the activities of IOI Senegal to all concerned so as to improve the perception of donors regarding IOI Senegal;
- (iv) identify villages in Southern Senegal which could be taken up by IOI as part of its bio-villages and eco-technology project after getting the approval of the Government of Senegal to the project;
- (v) approach the Japanese Embassy for up to US\$ 50,000 as per the form made available to him;
- (vi) liaise with UNDP, Dakar so that IOI Senegal could become a part of the strategy being worked out by UNDP for the decade 1997-2007;
- (vii) carry out regional hearings for the Independent World Commission on the Oceans (IWCO) and submit recommendations to the IWCO through the Minister of Fisheries, Senegal who is a Member of the Commission.

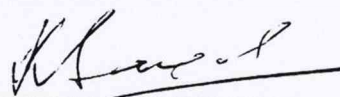
### Summing up

My overall impression is that the work of IOI Senegal is so far proceeding smoothly. The physical target of trainee weeks needs to be achieved by reducing the cost of training.

Also my view would be that now that the IOI course material has, by and large, been translated into French, stress of the Project should be more on networking and programme development than on training (except for the two Train-Seacoast courses) with other donors being tapped for funds for training. I have asked Dr. Toure to start adjusting his work plan accordingly.

IOI Senegal also needs to be more aggressive in taking advantage of the opportunities that exist in the field of training and policy research. To this end they need to step up their publications and dissemination of information in the West African region.

It also seems to be necessary for UNDP conducting an independent evaluation of IOI Senegal's activities (the one by Danny Elder was really premature) as that would help IOI Senegal to better "present" itself and to raise funds.

  
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**Dr. Krishan Saigal**  
**Executive Director**

## SEMINAIRE REGIONAL IOI-SENEGAL

## PLANIFICATION ET AMENAGEMENT DES ZONES COTIERES ET MARINES

(Du 18 mars au 27 avril 1996)

(PROJET DE PROGRAMME)

Semaine 1 : 18 mars au 22 mars 1996

Introduction : Cadre Juridique National et International

SEANCES	DATES & HEURES	TITRE DES COURS	NOMS & FONCTIONS
	Lundi 18 mars 1996 09 h 10 h	Cérémonie d'Ouverture	Ministre de la Pêche et des Transports maritimes
	10 h 00 - 10 h 30	PAUSE	
Séance 1	10 h 30 - 11 h 30	Introduction au cours : méthodologie de formation, productions escomptées, dispositions administratives, présentations des participants	Diafara TOURE Océanographe. Directeur du Centre IOI-SENEGAL Directeur du CRODT
Séances 2 et 3	11h 30 -	Les différentes approches pour une gestion intégrée des zones côtières et marines	Salif DIOP Professeur à l'Université UCAD. Responsable du Programme COMARAF - UNESCO
Séances 4 et 5		Introduction aux droits de la mer	Tafsir Malick NDIAYE Professeur à la Faculté des Sciences Juridiques et Politiques - UCAD
	Mardi 19 mars 1996 09 h 00 - 10 h 30	La ZEE : historique, nature et régime juridique	Hamid DIOP, Administrateur des Affaires Maritimes, Ancien Directeur de l'Océanographie et des Pêches Maritimes
	11 h 00 - 12 h 30	La mer territoriale, la zone contiguë et les eaux intérieures	Daouda FALL Professeur à la Faculté des Sciences juridiques et Politiques - UCAD
	12 h 30 - 14 h 30	PAUSE	
	15 h 00 - 16 h 30	Les eaux archipélagiques, le régime des îles	Daouda FALL. Faculté des Sciences juridiques et Politiques - UCAD

	<b>Mercredi 20 mars 1996</b> 09 h 00 - 10 h 30	La Haute mer	Hamid DIOP, Administrateur des Affaires Maritimes, Ancien Directeur de l'Océan et des Pêches Maritimes
	10 h 45 - 12 h 15	Les Fonds marins et la Recherche scientifique marine	Daouda FALL. Faculté des Sciences juridiques et Politiques - UCAD
	12 h 30 - 14 h 30	<b>PAUSE</b>	
	15 h 00 - 16 h 30	La protection de l'Environnement marin et la Convention de Montégo-Bay	Moustapha N'GAIDE Professeur à la Faculté des Sciences juridiques et Politiques - UCAD
	16 h 45 - 18 h 15	Développement, technologie et transfert des techniques marines	Abdoulaye SAKHO, Enseignant à la Faculté des Sciences juridiques et Politiques - UCAD
	<b>Jeudi 21 mars 1996</b> 09 h 00 - 10 h 15	La durabilité économique : les commodités publiques : politique économique de l'Environnement	Mamadou Mansour NDIAYE Institut des Sciences de l'Environnement Pape Meïssa DIENG
	10 h 30 - 12 h 00	Les coûts de la pollution et la méthode de l'évaluation : consommation à long terme	Mamadou Mansour NDIAYE Institut des Sciences de l'Environnement
	12 h 30 - 14 h 30	<b>PAUSE</b>	
	15 h 00 - 17 h 00	Chapitre 17 Agenda 21 et son application à l'Afrique. Convention d'Abidjan	Cheikhou Issa SYLLA Faculté de Droit - UCAD
	12 h 30 - 14 h 30	<b>PAUSE</b>	
	<b>Vendredi 22 mars 1996</b> 09 h 00 - 12 h 00	Synthèse	Tafsir Malick NDIAYE à la Faculté des Sciences juridiques et Politiques - UCAD
	14 h 00	Visite du projet PSPS (Workshop). Projection de film sur la pêche à l'explosif	Hamid DIOP, Administrateur des Affaires Maritimes, Ancien Directeur de l'Océan et des Pêches Maritimes

# SEMINAIRE REGIONAL IOI-SENEGAL

## PLANIFICATION ET AMENAGEMENT DES ZONES COTIERES ET MARINES

(Du 18 mars au 27 avril 1996)

(PROJET DE PROGRAMME)

Semaine 2 : 25 mars au 29 mars 1996

Introduction : Cadre Physique des écosystèmes côtiers

SEANCES	DATES & HEURES	TITRE DES COURS	NOMS ET FONCTIONS
Séance 1	Lundi 25 mars 1996 09 h 00 - 10 h 30	L'évolution de la technologie en océanographie électronique, télédétection, repérage à distance. L'innovation des bâtiments de recherche	N. DIOP
Séance 2	11 h 00 - 12 h 30	L'océanographie dans les pays en voie de développement	Diafara TOURE
	12 h 30 - 14 h 30	PAUSE	
Séance 3	15 00 - 16 h 30	L'interface océan/air : la météorologie et son importance dans les pays africains	M.CARN
Séance 4	16 h 30 - 18 h 30	Océanographie côtière : l'eau de mer, les courants, les vagues, les zones marines	M. BA
Séance 1	Mardi 26 mars 1996 09 h 00 - 10 h 30	Les différents écosystèmes côtiers : côtes, estuaires, deltas. Evolution du littoral du Quaternaire à l'actuel	M. BA
Séance 2	10 h 45 - 12 15	Aspects et processus de l'évolution littorale : érosion des côtes et transports des sédiments	B. DIOUF
	12 h 30 - 14 h 30	PAUSE	
Séance 3	15 h 00 - 16 h 30	Variations du niveau marin : les variations holocènes du niveau marin ; les relations actuelles ; les tendances futures en relation avec les changements climatiques	I. DIOP

Séances 1,2,3 et 4	<b>Mercredi 27 mars 1996</b> 09 h 00 - 10 h 30	Ateliers sur les méthodes utilisées pour l'étude de l'évolution du littoral. Etude de cas du Saloum	B. DIOUF et M. BA
	10 h 45 - 12 h 15		
	12 h 30 - 14 h 30	<b>P A U S E</b>	
	<b>Jeudi 28 mars 1996</b> 09 h 00 - 10 h 45	Sortie sur la pointe de Sangormar (Saloum) : mesures de profils et de la ligne de rivage	B. DIOUF et M. BA
Séances 1,2	<b>Vendredi 29 mars 1996</b> 09 h 00 - 12 h 00	Analyses des résultats obtenus sur le terrain	B. DIOUF et M. BA
Séance 3 & 4	14 h 00	Téledétection : Reconnaitances des différentes unités dans les écosystèmes côtiers	S. DIOP et A. PESIN



# PLANIFICATION ET AMENAGEMENT DES ZONES COTIERES ET MARINES

(Du 18 mars au 27 avril 1996)

(PROJET DE PROGRAMME)

Semaine 3 : 01 avril au 05 avril 1996

Introduction : Les ressources vivantes dans la zone côtière

SEANCES	DATES & HEURES	TITRE DES COURS	NOMS ET FONCTIONS
Séance 1	Lundi 01 avril 1996 09 h 00 - 10 h 30	Ecologie et biodiversité de la flore littorale : menaces, causes d'extinction, protection et conservation	1. GUISSÉ
Séance 2	11 h 00 - 12 h 30	Ecophysiologie de la flore littorale. Rôle des palétuviers et autres plantes côtières dans les écosystèmes	N. DIALLO
	12 h 30 - 14 h 30	PAUSE	
Séance 3	15 h 00 - 16 h 30	Biodiversité des communautés ichtyoplanctoniques des eaux côtières et estuariennes	D. PANDARE
Séance 4		Maladies parasitaires chez des poissons : conséquences sur la productivité	B. TOGUEBAYE
Séances 1 & 2	Mardi 02 avril 1996 09 h 00 - 10 h 30	Atelier de diagnostic et identification des maladies parasitaires de poissons	B. TOGUEBAYE
Séances 3 & 4	10 h 30 - 12 h 15	Atelier sur les ressources halieutiques : étude anatomique et morphologique de cas choisis	F.L. BA

	<b>Mercredi 03 avril 1996</b>	<b>Sortie autour de la presqu'île du Cap-Vert</b>	<b>D. PANDARE</b>
	<b>Jeudi 04 avril 1996</b>	<b>Visite du site d'expérimentation de reboisement de la Somone</b>	<b>N. DIALLO, S. DIOP et A. GUISSÉ</b>
<b>Séances 1,2,3 et 4</b>	<b>Vendredi 05 avril 1996</b>	<b>Atelier d'expérimentation des tris des communautés ichtyoplanctoniques prélevées dans la presqu'île du Cap-Vert</b>	<b>D. PANDARE</b>
<b>Séances 1 &amp; 2</b>	<b>Lundi 08 avril 1996</b>	<b>(Suite ressources vivantes dans les zones côtières) Peuplements des poissons des milieux estuariens et lagunaires</b>	<b>P.S. DIOUF</b>

# PLANIFICATION ET AMENAGEMENT DES ZONES COTIERES ET MARINES

(Du 18 mars au 27 avril 1996)

(PROJET DE PROGRAMME)

Semaine 4 : 08 avril au 12 avril 1996

Introduction : Gestion et aménagement du littoral

SEANCES	DATES & HEURES	TITRE DES COURS	NOMS ET FONCTIONS
Séance 3	Lundi 08 avril 1996 09 h 00 - 10 h 30	L'utilisation de la mer : pêche, aquaculture, tourisme, sport, gaz et pétrole offshore	B. SAMB
Séance 4	11 h 00 - 12 h 30	Harmonisation du contrôle de la côte et de la zone économique exclusive. la politique d'approche analytique de la gestion océanographie	M. BARRY-GERARD
	12 h 30 - 14 h 30	PAUSE	
Séances 3 & 4	15 h 00	CRAT	
Séances 1 & 3	Mardi 09 avril 1996 09 h 00 - 10 h 30	Méthode d'évaluation de l'investissement : secteur privé	M. DEME
Séance 3	10 h 45 - 12 h 15	Eléments pour l'aménagement du littoral : les processus côtiers et leurs interactions avec les activités anthropiques	B. DIOUF
	12 h 30 - 14 h 30	PAUSE	
Séance 4	15 h 00 - 16 h 30	Etude de cas : conséquences d'aménagements incontrôlés sur la petite côte	

Séances 1 & 2	<b>Mercredi 10 avril 1996</b> 09 h 00 - 10 h 30	Visite des ouvrages de protection de Rufisque	I. DIOP
Séances 3 & 4	10 h 45 - 12 h 45	Atelier de simulation sur l'aménagement du littoral	I. DIOP
Séances 1,2,3 et 4	<b>Jeudi 11 avril 1996</b> 09 h 00 - 12 h 00	Atelier sur l'analyse de sédiments de divers milieux littoraux, exploitation des résultats, identification de la dynamique de ces milieux dans le cadre de l'aménagement du littoral	B. DIOUF et M. BA
Séances 1 & 2	<b>Vendredi 12 avril 1996</b> 09 h 00 - 12 h 00	Pollution et épuration des eaux : impacts sur le milieu marin. Comment mesurer, contrôler et réduire les polluants des océans	S. NIANG
Séances 3 & 4	14 h 00	Visite de deux stations d'épuration (Cambérène et Cité SHS, Golfe nord)	S. NIANG

# PLANIFICATION ET AMENAGEMENT DES ZONES COTIERES ET MARINES

(Du 18 mars au 27 avril 1996)

(PROJET DE PROGRAMME)

Semaine 5 : 15 avril au 19 avril 1996

Introduction : Gestion des ressources vivantes du littoral

SEANCES	DATES & HEURES	TITRE DES COURS	NOMS ET FONCTIONS
Séance 1	Lundi 15 avril 1996 09 h 00 - 10 h 30	Gestion et conservation des ressources vivantes	M. BAKHAYOKHO
Séance 2	11 h 00 - 12 h 30	Techniques d'inventaire : méthodes traditionnelles, modèles informatisés	B. SAMB
	12 h 30 - 14 h 30	PAUSE	
Séance 3	15 00 - 16 h 30	Stratégies de gestion : contrôle de la dimension des mailles, restriction des zones et des saisons	M. DEME / M. KEBE
Séance 4	16 h 30 - 18 h 30	Efficacité et carence des systèmes de contrôle existants ; participation des communautés de pêcheurs. Les formes traditionnelles de gestion et de conservation	M. DEME / M. KEBE
Séance 1	Mardi 16 avril 1996 09 h 00 - 10 h 30	Observation et surveillance de la zone exclusive économique	M. DEME
Séance 2	10 h 45 - 12 h 15	Principe de gestion et de planification des ressources marines vivantes	DOPM
	12 h 30 - 14 h 30	PAUSE	
Séance 3	15 h 00 - 16 h 30	Aquaculture, mariculture, pisciculture : notions et modèles	F.L. BA
Séance 4	16 h 30 - 18 h 00	Techniques de sélection d'espèces et d'amélioration génétique en milieu d'élevage	F.L. BA

	<b>Mercredi 17 avril 1996</b> 09 h 00 - 10 h 30	<b>Atelier : Gestion des ressources vivantes</b>	<b>M. THIAM</b>
	<b>Jeudi 18 avril 1996</b> 09 h 00 - 10 h 30	<b>Exposé sur le rôle et la fonction du CRODT ainsi que sur les relations de coopération avec les autres structures. Visite du CRODT</b>	<b>Diafara TOURE</b>
	<b>Vendredi 19 avril 1996</b> 09 h 00 - 10 h 30	<b>Sortie sur le terrain, plage, points de débarquements, marché, sortie en mer - CRODT</b>	

# PLANIFICATION ET AMENAGEMENT DES ZONES COTIERES ET MARINES

(Du 18 mars au 27 avril 1996)

(PROJET DE PROGRAMME)

Semaine 6 : 22 avril au 27 avril 1996

Introduction : Activités et économie de la zone côtière. Formulation de projets

SEANCES	DATES & HEURES	TITRE DES COURS	NOMS ET FONCTIONS
Séance 1	Lundi 22 avril 1996 09 h 00 - 10 h 30	Les critères d'estimation du développement économique : produit intérieur brut, produit national brut ; les carences du PNB, l'importance des indicateurs sociaux ; les indications de vulnérabilité	Moustapha KEBE
Séance 2	11 h 00 - 12 h 30	Les nouvelles méthodes de gestion intégrant le PNB et l'écologie	Moustapha KEBE
	12 h 30 - 14 h 30	PAUSE	
Séance 3	15 h 00 - 16 h 30	Les caractéristiques des économies africaines : désertification, pénurie alimentaire	A. FALL
Séance 4	16 h 30 - 18 h 30	Les ressources océanographiques en Afrique. L'importance des ressources dans les stratégies de développement en Afrique	Birane SAMB
Séance 1	Mardi 23 avril 1996 09 h 00 - 10 h 30	Industrie de la pêche : main d'oeuvre, production, conservation	DOPM
Séance 2	10 h 45 - 12 h 15	La pêche artisanale : sa place dans l'économie nationale et l'impact de la technologie sur son développement	DOPM
	12 h 30 - 14 h 30	PAUSE	
Séance 3	15 h 00 - 16 h 30	Les associations de pêcheurs : organisation, fonctionnement et rôle dans le secteur	L. BOUSSO

Séance 4	16 h 30 - 18 h 30	Les groupements féminins dans la transformation des produits halieutiques :: rôle et fonctionnement. Importance du secteur de la transformation dans le développement de la pêche	A.D. BA
	<b>Mercredi 24 avril 1996</b>		
Séances 1 & 2	09 h 00 - 10 h 30	Visite d'associations de pêcheurs à Kayar	L. BOUSSO
Séances 3 & 4	10 h 45 - 12 h 00	Visite du site de transformation des produits halieutiques de Kayar	A.D. BA
	<b>Jeudi 25 avril 1996</b>		
		Visite du port de Dakar	
	<b>Vendredi 26 avril 1996</b>		
Séances 1 & 2	09 h 00 - 12 h 00	Les différentes étapes de la formulation d'un projet : étude de cas de projets de pêche	L. BOUSSO et A.D. BA
<b>Séance de clôture</b>			



**LISTE DES PARTICIPANTS AU 2<sup>e</sup> COURS DE IOI-SENEGAL**

**18 MARS - 27 AVRIL 1996**

**ANNEX B**

Page 18

NOM et PRENOMS	SOCIETES OU ORGANISMES ET PAYS
Mr. Mamadou LO	Ministère des Pêches de Mauritanie (Nouakchott)
Mr. Boubacar LY	Aquaculteur au Centre National de Recherches Océanographiques et des Pêches de Nouadhibou (Rep.I.Mauritanie) (C.N.R.O.P.)
Mr. Alioune DAH OULD	Biologiste des Pêches au Centre National de Recherches Océanographiques et des Pêches de Nouadhibou (Rep.I. Mauritanie) (C.N.R.O.P.)
Mr. Alassane KEBE	Enseignant à la Faculté des Sciences de Nouakchott (Rep.I. de Mauritanie)
Mr. Nouri NAIRI	Etudiant à l'Université de Tunis
Mr. Soriba Facinet BANGOURA	Ichtiologue au Centre de Recherche Scientifique de Conakry - ROBANE (CERESCOR)
Mme Gbe Manou KOUNJI EUGENE	Stagiaire à l'Université de Bénin Cotonou
Mr. Pierre KOIVOGUI	Ichtiologue -Environnementaliste au Centre de Recherches Scientifiques de Conakry -Robane (CERESCOR)
Mr. le Capitane de Vaisseau Jean Pierre VONIDIBIO	Navigateur à la Marine Marchande de Brazzaville (Congo)
Mr. Bamba Siaka BARTELEMY	Hydrologue au Centre de Recherches Océanographiques d'Abidjan (Côte d'Ivoire)

<b>Mr. Youssouf</b>	<b>SANOGO</b>	<b>Biologiste à la Faculté des Sciences de Bamako (Mali)</b>
<b>Mr. Amadou</b>	<b>SAINE</b>	<b>Biologiste Fisheries Department Banjul (Gambie)</b>
<b>Mr. Luis Malabé DA FONSECA</b>		<b>Biologiste des Pêches au Centre d'Investigation de la Pêche Artisanale (CIPA) (Guinée Bissau)</b>
<b>Mr. Joarjhino</b>	<b>SA'</b>	<b>Planificateur à la Direction de la Planification côtière ( Guinée Bissau)</b>
<b>Melle Halima</b>	<b>LAAROUBI</b>	<b>Géologue Faculté des Sciences de Rabat (Maroc)</b>
<b>Mr. Julien NKIZOGHO-NGUEMA</b>		<b>Biologiste des Pêches au Ministère des Pêches du Gabon</b>
<b>Mr. Aboubakry</b>	<b>KANE</b>	<b>Aquaculteur à la Direction de l'Océanographie et des Pêches Maritimes (Sénégal)</b>
<b>Mme Tické NDIAYE</b>	<b>DIOP</b>	<b>Biologiste des Pêches à la Direction de l'Océanographie et des Pêches Maritimes (Sénégal)</b>
<b>Mr. Mamadou</b>	<b>DIALLO</b>	<b>Biologiste des Pêches au Centre de Recherches Océanographiques de Dakar-Thiaroye (Sénégal)</b>
<b>Mr. Abdoulaye</b>	<b>DIAME</b>	<b>Président de West African Association for Marine Environment - DAKAR - SENEGAL</b>
<b>Mr. Cheikh</b>	<b>NDOUR</b>	<b>Chimiste au Centre de Recherches Océanographiques de Dakar-Thiaroye ( Sénégal)</b>
<b>Mr. Pape Birane</b>	<b>SARR</b>	<b>Environnementaliste Direction de l'Environnement - Dakar(Sénégal)</b>
<b>Mr. Alphonse</b>	<b>SAGNA</b>	<b>Enseignant Centre National de Formation des Techniciens de la Pêche. Dakar (Sénégal)</b>
<b>Mr. Massal</b>	<b>FALL</b>	<b>Biologiste des Pêches au Centre de Recherches Océanographiques de Dakar-Thiaroye (Sénégal)</b>

## PROGRAMME DU PREMIER COURS DE IOI-SENEGAL

## SUR DE LA ZONE COTIERE, Y INCLUS LA ZONE

## ECONOMIQUE EXCLUSIVE

(CRODT 18 - 29 SEPTEMBRE 1995)

1<sup>ère</sup> semaine

<b>Lundi 18/09</b> Session 1 09 h 00 - 10 h 00	Cérémonie d'ouverture	
Session 2 10 h 00 - 11 h 30	Introduction : CZM, EEZ, soutien au développement ; les concepts, problèmes, opportunités et besoin	Salif DIOP Professeur à l'Université Cheikh Anta DIOP de Dakar (UCAD). Responsable du Programme COMARAF - UNESCO - Dakar
Session 3 11 h 30 - 13 h 00	Les systèmes d'approche à la gestion de la CZM et de la EEZ (ZEE) ; les interactions de l'écosystème, le système sociétal et les systèmes de gestion et de gouvernance	“ “
13 h 00 - 15 h 00	Déjeuner	
Session 4 15 h 00 - 16 h 30	Impact de la convention des Nations Unies sur les gestion des océans : chapitre 17 de l'Agenda 21 et de ses sept programmes : la Zone Economique Exclusive	Bakar MBAYE Docteur spécialisé en droit de la mer - consultant - Dakar
<b>Mardi 19/09</b> Session 1 08 h 30 - 10 h 00	Développement durable et effets des conférences internationales sur les pêches (stocks chevauchant et grands migrateurs), développement des petits états insulaires (DPEI) ; gestion de la zone côtière et protection du milieu (1993-1995)	“ “
Session 2 10 h 00 - 12 h 00	Coopération régionale et approche participative ; rôle de la femme, de la jeunesse, des indigènes, des communautés locales et du NGOC	A. L. BOUSSO Economiste consultant
Session 3 15 h 00 - 16 h 30	Structures organisationnelles pour les CZM et EEZM intégrés au niveau national, régional et global	Abdoul Hamid DIOP Administrateur des Affaires maritimes. Ancien Directeur de l'Océanographie et des Pêches maritimes - Dakar
<b>Mercredi 20/09</b> Session 1 08 h 30 - 10 h 00	Critères d'appréciation de l'investissement : différences dans le domaine du secteur privé et public et de la société	Moustapha DEME Economiste chercheur au Centre de Recherches Océanographiques de Dakar-Thiaroye (CRODT)
Session 2 10 h 00 - 12 h 30	VISITE DU CRODT	
Sessions 3 et 4 14 h 00 - 15 h 30	Océanographie (physique, chimique, géologique, biologique)	Mariline BA Géologue chercheur - enseignant à l'UCAD

<b>Jeudi 21/09</b> Session 1 08 h 30 - 10 h 00	Ecosystèmes côtiers : structure et fonction	„ „
10 h 00 - 12 h 00	Ressources côtières : distribution et abondance ; ressources non vivantes - terre, eau, énergie et minéral	Isabelle NIANG DIOP chercheur enseignant géologue à l'UCAD
Session 3 14 h 00 - 15 h 30	Principes écologiques : chaînes alimentaires, processus dynamiques et relations entre les écosystèmes ; écosystèmes critiques et leur vulnérabilité	Salif DIOP Professeur à l'Université Cheikh Anta DIOP de Dakar (UCAD). Responsable du Programme COMARAF - UNESCO - Dakar
<b>Vendredi 22/09</b> Session 1 08 h 30 - 10 h 00	Activités côtières : tourisme, pêcheries, aquaculture, transport, industrie, foresterie et exploitation minière	Birane SAMB Chercheur biologiste des pêches au CRODT
Sessions 2,3 et 4 10 h 30 - 12 h 30  14 h 00 - 16 h 00	Ateliers de travail et/ou exercices de simulation. Sujet : importance du CZM et du EEZM pour les pays en développement, problèmes et chances pour les résoudre, intégration de l'environnement et du développement	Isabelle NIANG DIOP Chercheur enseignant géologue à l'UCAD  Birane SAMB Chercheur biologiste des pêches au CRODT
16 h 00 - 17 h 00	Réunion de synthèse du comité	

<b>Lundi 25/09</b> Session 1 08 h 30 - 10 h 00	L'ossature de la prise de décision pour la CZM et la EEZM format d'entrée/sortie	A. Hamid DIOP Administrateur des Affaires maritimes. Ancien Directeur de l'Océanographie et des Pêches maritimes - Dakar
Session 2 10 h 00 - 12 h 30	Principes du GIS : concepts liés aux données ; analyse des données ; sortie des données ; concepts liés aux matériels et logiciels	Pape DIALLO Informaticien à l'Unité de Traitement d'Images Satellitaires (UTIS) CRODT - Dakar
<b>Mardi 26/09</b> Session 1 08 h 30 - 10 h 00	Evaluation de la pollution côtière : types et sources de pollution et leur impact au niveau de l'écosystème côtier	Itaf GUINGUE Chercheur - chimiste au CRODT
10 h 30 - 12 h 00	TRAVAUX PRATIQUES	
Session 3 14 h 30 - 16 h 00	Synthèse des cours	Diafara TOURE Océanographe. Directeur du Centre IOI-SENEGAL Directeur du CRODT
<b>Mercredi 27/09</b> Session 1 09 h 00 - 10 h 30	Robotique et exploitation minière dans le domaine marin	Ramadane SARR Informaticien au CRODT
Session 2 10 h 30 - 12 h 30	Télédétection : principes physiques de la télédétection, logiciels et applications des images satellitaires aux CZM/EEZM	Jean CITEAU Océanographe - physicien - Responsable (UTIS) CRODT - Dakar
14h 30 - 16 h 00	TRAVAUX PRATIQUES	
<b>Jedi 28/09</b> Session 1 08 h 30 - 10 h 00	Systèmes régulateurs : monitoring et systèmes de contrôle	M. KEBE/M.DEME Economistes au CRODT
Session 2 10 h 00 - 12 h 00	Les nouvelles sciences économiques incluant les méthodes comptables pour l'intégration du GNP et de l'écologie CZM/EEZ	Moustapha KEBE Economiste - responsable du Bureau d'Analyse Macro-Economique de l'ISRA
12 h 15 - 14 h 00	DEJEUNER	
Session 3 14 h 30 - 16 h 00	La Convention des Nations Unies sur le droit de la mer. Historique ; principales caractéristiques, intérêts des pays en développement	Tafsir Malick NDIAYE Professeur à la Faculté des Sciences juridiques (UCAD)
Session 4 16 h 00 - 17 h 30	La Convention des Nations Unies sur le droit de la mer. Développement dans le droit maritime : 1983-94 comprenant les résultats de la consultation informelle du secrétaire général des Nations Unies : à propos de l'exploitation minière du fond de la mer, 1990-94. Suite de l'entrée en force de la convention le 16 novembre 1994 : problèmes et perspectives	“ “
<b>Vendredi 29/09</b> Session 1 09 h 00 - 10 h 30	Evaluation de la technologie : impacts socio-culturels et environnementaux, diffusion de la technologie et impacts économiques de la technologie de pointe	Ousmane KANE Economiste

Session 2 10 h 00 - 12 h 30	Etudes de cas à développer par les participants	M. BA Géologue chercheur - enseignant à l'UCAD / M. KEBE économiste au CRODT
12 h 45 - 14 h 00	DEJEUNER	
Sessions 3 et 4 14 h 00 - 15 h 00	Réunion - Evaluation	
16 h 00	Cérémonie de clôture	
17 h 00	Réunion comité de gestion	

**LISTE DES DEVELOPPEURS DE COURS**  
**AU PREMIER COURS IOI-SENEGAL**  
**(18 - 29 SEPTEMBRE 1995)**

NOM, PRENOMS ET SPECIALITES	COURS
Salif DIOP, Professeur à l'Université Cheikh Anta DIOP de Dakar (UCAD). Responsable du Programme COMARAF - UNESCO - Dakar	<p>Introduction : CZM, EEZ, soutien au développement, les concepts, problèmes, opportunités et besoins.</p> <p>Les systèmes d'approche à la gestion de la CZM et de la EEZ (ZEE) ; les interactions de l'écosystème, le système sociétal et les systèmes de gestion et de gouvernance.</p> <p>Principes écologiques : chaînes alimentaires processus dynamiques et relations entre les écosystèmes : écosystèmes critiques et leur vulnérabilité.</p>
Baka MBAYE Docteur spécialisé en droit de la mer - Consultant - Dakar	<p>Impact de la convention des Nations Unies sur les gestion des océans : chapitre 17 de l'Agenda 21 et de ses sept programmes : la Zone Economique Exclusive.</p> <p>Développement durable et effets des conférences internationales sur les pêches (stocks chevauchant et grands migrateurs), développement des petits états insulaires (DPEI) ; gestion de la zone côtière et protection du milieu marin (1993-1995).</p>
A. L. BOUSSO Economiste	Coopérative régionale et approche participative : rôle de la femme, de la jeunesse, des indigènes, des communautés locales et du NGOC
Abdoul Hamid DIOP Administrateur des Affaires maritimes. Ancien Directeur de l'Océanographie et des Pêches maritimes - Dakar	<p>Structures organisationnelles pour les CZM et EEZM intégrés au niveau national et global.</p> <p>L'ossature de la prise de décision pour la CZM et la EEZM format d'entrée/sortie</p>
Moustapha DEME Economiste chercheur au Centre de Recherches Océanographiques de Dakar (CRODT)	<p>Critères d'appréciation de l'investissement : différences dans le domaine du secteur privé et public et de la société</p> <p>Système régulateurs : monitoring et systèmes de contrôle</p>

NOM, PRENOMS ET SPECIALITES	COURS
Marline BA Géologue - chercheur - enseignant à l'UCAD	Océanographie (physique, chimique, géologique, biologique)  Ecosystèmes côtiers, structure et fonction
Isabelle NIANG DIOP Chercheur - enseignant - géologue à l'UCAD	Ressources côtières : distribution et abondance : ressources non vivantes terre, eau, énergie et minéral  Ateliers de travail et/ou exercices de simulation. Sujet : importance du CZM et du EEZM pour les pays en développement, problèmes et chances pour les résoudre, intégration de l'environnement et du développement.  Océanographie côtière et processus côtiers (érosion et transport de sédiment).
Birane SAMB Chercheur biologiste des pêches au CRODT	Ateliers de travail et/ou exercices de simulation. Sujet : importance du CZM et du EEZM pour les pays en développement, problèmes et chances pour les résoudre, intégration de l'environnement et du développement;  Activités côtières : tourisme, pêcheries, aquaculture, transport, industrie, foresterie et exploitation minière.
Itaf DEME-GUINGUE Chercheur - chimiste au CRODT	Evaluation de la pollution côtière :: types et sources de pollution et leur impact au niveau de l'écosystème côtier
Waque NDIAYE Aquaculteur au CRODT	Pêcheries et aquaculture
Ousmane KANE Technologue - Directeur exécutif du Centre Africain de Technologie (CRAT) - Dakar	Evaluation de la technologie : impacts socio-culturels et environnementaux, diffusion de la technologie et impacts économiques de la technologie de pointe
Ramadane SARR Informaticien au CRODT	Robotique et exploitation minière dans le domaine marin
Jean CITEAU Océanographe - physicien - Responsable de l'Unité de Traitement d'Images Satellitaires (UTIS) CRODT - Dakar	Télédétection : principes physiques de la télédétection logiciels et applications des images satellitaires aux CZM/EEZM.  Ateliers de travail : modèle générique pour les pays en développement et concernant les CZM et EEZM effectifs, évaluation



NOM, PRENOMS ET SPECIALITES	COURS
Moustapha KEBE Economiste - responsable du Bureau d'Analyse Macro-Economique de l'ISRA	<p>Système régulateurs : monitoring et systèmes de contrôle.</p> <p>Les nouvelles sciences économiques incluant les méthodes comptables pour l'intégration du GNP et de l'écologie CZM/EEZM.</p> <p>Etudes de cas à développer par les participants.</p>
Tafsir Malick NDIAYE Professeur à la Faculté des Sciences juridiques (UCAD)	<p>La convention des Nations Unies sur le droit de la mer. Historique : principales caractéristiques, intérêts des pays en développement.</p> <p>La convention des Nations Unies sur le droit de la mer. Développements dans le droit maritime : 1983-94 comprenant les résultats de la consultation informelle du secrétaire général des Nations Unies : à propos de l'exploitation minière du fond de la mer, 1990-94. Suite de l'entrée en force de la convention le 16 novembre 1991 : problèmes et perspectives</p>
Florent DIOUF Documentaliste au CRODT	Sources d'information et accès aux documents primaires
Pape DIALLO Informaticien à UTIS	Principes du GIS : concepts liés aux données ; analyse données : sortie des données ; concepts liés aux matériels et logiciel

**LISTE DES PARTICIIPANTS**  
**AU PREMIER COURS DE IOI-SENEGAL SUR**  
**DE LA ZONE COTIERE, Y INCLUS**  
**LA ZONE ECONOMIQUE EXCLUSIVE**  
**(CRODT 18 - 29 SEPTEMBRE 1995)**

	PRENOMS	NOM	SERVICES
01	Cheikh	DIOP	Enseignant à l'Institut des Sciences de l'Environnement de l'Université Cheikh Anta DIOP de Dakar (UCAD)
02	Abdoulaye	SENE	
03	Jean L.	KALY	Etudiant en année de thèse (pêche continentale) (UCAD)
04	Mme Fagamou	SY	Agents de la Direction de l'environnement - Dakar
05	Pape B.	SARR	
06	Ibrahima	DIOUF	Enseignant à l'Ecole Nationale d'Economie Appliquée de Dakar
07	Abdoulaye	DIOP	Agents de la Direction des Parcs Nationaux - Dakar
08	Hamady	SOW	
09	Omar	BALDE	Agents du Ministère de la Recherche Scientifique et la Technologie
10	Youssouph	DIATTA	
11	Pierre	SARR	Agents de la Direction de la Marine Marchande - Dakar
12	Moussa	BA	
13	Martin	MANE	CONCAD
14	Djibril	GUEYE	
15	Khaly	SOW	Technicien supérieur au Département de géographie de l'UCAD
16	Babacar	FAYE	Agents de la Direction des Eaux, Forêts et Chasses Dakar
17	Mamadou	NGOM	
18	Aboubakry	KANE	Agents de la Direction de l'Océanographie et des Pêches Maritimes Dakar
19	Mamadou	GOUDIABY	
20	Almany I.	WADE	Agent du Centre de Suivi Ecologique - Dakar
21	Dieynaba	SOW	Direction des Mines et de la Géologie
22	Massal	FALL	Chercheur au Centre de Recherches Océanographiques de Dakar-Thiaroye (CRODT)
23	Mamadou	DIALLO	



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**REPORT ON THE TRAINING COURSE ON  
INTEGRATED MANAGEMENT OF THE  
THE COASTAL ZONE, INCLUDING  
THE EXCLUSIVE ECONOMIC ZONE  
(CRODT-DAKAR SEPTEMBER 18-29, 1995)**

A training course on the integrated management of the coastal zone, including the exclusive economic zone (EEZ) was held from September 18 to 29 at the Dakar-Thiaroye Oceanographic Research Centre.

Participants to the course came from various government services and institutions, including, among others, the Department of Scientific and Technical Affairs, the Department of Forestry and Water Resources, the Environmental Monitoring Centre, the Department of Oceanography and Marine Fisheries, the Institute of Environmental Sciences, University Cheikh Anta Diop, Dakar, the Dakar-Thiaroye Oceanographic Research Centre, the African Regional Centre for Technology, and the African Institute for Economic Development and Planning.

In accordance with IOI guidelines, the training course covered an array of subjects in the form of modules, and special emphasis was put on the need for a holistic approach, with a view to sustainable management, from economic as well as environmental standpoints. The 23 participants had thus the opportunity to keep up with a modular training dealing not only with strictly oceanographic issues relating to the integrated management of the coastal zone, including the exclusive economic zone (physical, geological, chemical and biological aspects, management of living resources, exploitation of mineral resources, dynamic processes and the interplay of the various ecosystems concerned, the geographic information systems), but also with economic (tourism, project evaluation), legal (with the coming into effect of the United Nations Convention on the Law of the Sea), and social (involvement of grass roots organisations, management of technological innovation) aspects.

From a pedagogical standpoint, courses included illustration with slides, workshops, and simulation exercises.

After the keynote address by the Director General of ISRA, the Senegalese Agricultural Research Centre, concepts of coastal zone and exclusive economic zone were explained to enable trainees to better understand current and future challenges of the integrated management of these zones, especially the coastal zone, where 65% of the world population lives (75% by the year 2000) and which, with the exclusive economic zone, contributes 90% of fish production and 75% of marine pollution.

Erosion, which is compounded by the adverse effects of port and industrial activities, along with the development of tourism and population increase, constitute real threats to coastal zone ecosystems. Hence the need for capacity-building at the national level, with a view to identifying and solving problems, the onus of which is mainly on governments.

In this respect, the United Nations Convention on the Law of the Sea provides a favourable legal framework to developing countries. Still, these countries have to make the most of it through a better knowledge of the impact of the various economic activities and of climate change on the marine environment.

With government divestiture, grass roots organisations (women's and youth groups) have a more important role to play in the management of ecosystems. In this perspective, trainees were exposed to the participatory methodology and to project evaluation, with special emphasis on causes of the collapse of cooperative movements. These prerequisites enabled to present the modules concerned with physical, chemical, geological and biological aspects on the one hand, and with tools for decision-making offered by geographic information systems (remote sensing, access to information, monitoring) on the other.

The curriculum was designed to ensure a logical sequence in the presentation of modules, in view of the different backgrounds of trainees. At the end of the course, an evaluation meeting of the training was held with participants. They were pleased about the working environment and the responsiveness of staff at CRODT. A few recommendations, however, were levelled against the organisation and content of courses:

- more importance should be attached to workshops and case studies;
- emphasis should be put on the applicability of the knowledge imparted to everyday life situations;
- sociology courses should be incorporated in the curriculum;
- there is need to develop a manual dealing with fundamentals (development of this manual is under way);
- resource persons from other countries should be invited to share information and experiences.

As an IOI operational centre, CRODT will as far as practicable take into account these recommendations in the organisation of future training sessions, in concertation with the various partners involved in this project.

In view of the quality and success of the training programme, there was widespread agreement among participants and trainers that every effort should be made to give the management of the Dakar IOI Centre more autonomy. This would enable the setting-up of expert and counselling services in all aspects of coastal zone management, including the exclusive economic zone, for all States in the sub-region.

Report of Visit to International Ocean Institute, Operational Centre in Dakar, Senegal, March 18 - 22, 1996

At the 1995 annual meeting of the Board of Directors held December 7 in Puntarenas, Costa Rica I offered to accompany Dr. Krishan Saigal, Executive Director of IOI, on a visit to IOI-Senegal, one of our newer Centres. I am grateful to Dr. Diafara Toure, Director of CRODT (Centre de Recherches Oceanographiques de Dakar-Thiaroy), for taking care of all local arrangements at the airport and hotel.

The objective of our visit was to observe the day-to-day functioning of this IOI-Operational Centre which was established in June 1994, when IOI signed a Memorandum of Understanding with CRODT as well as its parent organization ISRA (Institut Senegalais de Recherches Agricole). A week-long site visit, we felt, would help us determine how well the Centre was doing in terms of training, course development, and overall institutional arrangements and outreach. I am happy to report very positive findings in all these areas and am optimistic that this Operational Centre under the competent leadership of Dr. Toure will be viable, after the satisfactory completion of the UNDP project.

Our arrival coincided with the official opening of a regional training programme "Planification et Aménagement des Zones Cotières et Marines " attended by 24 participants from 10 countries in west Africa. An outline of the syllabus and the list of participants is attached as Annex A. The official opening by the Hon. Alassane Dialy Ndiaye, Minister of Fisheries and Marine Transport was covered by national radio, television and the press. A press clipping is attached as Annex B. Immediately following opening formalities, the group began their work. I attended an afternoon lecture on UNCLOS by Professor Tafsir Malick Ndiaye, Professor of Law at Université Cheikh Anta Diop in Dakar. The session was extremely informative and elicited many questions from the audience. Subsequent lectures on Law of the Sea were given by Hamid Diop, former Minister of Fisheries & Marine Transport for Senegal. I was of the opinion that their expertise coupled with their extensive practical experience ensured the success of their presentations. Since the participants were staying at the same hotel, I had the opportunity to meet informally with them during the week, to assess their reactions to the programme. They all responded very positively to the week's work. It will be interesting to note if such enthusiasm is maintained throughout the six weeks of the course. This is always a challenge for course organizers. There is no doubt, that IOI-Senegal benefited from the course materials developed by IOI-Fiji and IOI-India but, on closer examination, it seems to me that the course developers are incorporating local case studies and local issues into the curriculum. I was able to examine a final draft of the modules developed for an earlier course entitled " Modules de formation en aménagement intégré de la zone côtière et de la zone économique

et exclusive". I have not included this 300 page document but recommend it to you. I attach as Annex C the course outline, list of participants and list of course developers. The final report and evaluation of this course was being printed and we encouraged Dr. Toure to circulate it to local and regional authorities as well as to all other IOI Centres. I visited the library of CRODT, their laboratories and the two rooms allocated for IOI. Interestingly enough, the office furniture and equipment was just being delivered, although it had been ordered many months before. Dr. Saigal met with the accountant and auditor to review the financial situation and met with Dr. Toure and colleagues to discuss their involvement in Train-Sea-Coast Network as well as the Centre's involvement in the hearings for the World Commission on the Oceans. Although I did not attend these meetings, I was advised that all projects are moving ahead.

After a day and one half in the classroom, Dr. Saigal, Dr. Toure and I agreed that perhaps we might seize the opportunity to meet with representatives of the government of Senegal to inform them of the successful work of IOI-Senegal to date and, if possible, arrange to meet with potential funding agencies. We were successful in arranging appointments with Japanese authorities, Canadian representatives, local UNDP representatives as well as members of the government of Senegal. IOI-Senegal prepared information kits for distribution which included a brochure, course announcements, course syllabus and participant lists.

Tuesday 19 March met with Mr. Toru Togawa  
Bureau de la JICA au Senegal  
3, Place de Independance  
Dakar, Senegal

Dr. Toure outlined present activities of IOI Senegal for Mr. Togawa, who described the procedures followed by JICA in awarding bi-lateral, technical assistance to Senegal. He encouraged Dr. Toure to prepare project proposals in collaboration with the appropriate Senegalese ministries and also suggested that we speak to Mr. Hara at the Embassy of Japan regarding small grants, for which ngo's are eligible.

Wednesday 20 March met with Alassane Dialy Ndiaye  
Min of Fisheries & Maritime Transport  
Dakar, Senegal

The Minister indicated his satisfaction with the work conducted to date, and indicated his willingness to increase the capacity of IOI-Senegal to meet the training needs within the Sahel region as well as to further strengthen marine research capability in west Africa. Minister Ndiaye, a member of the Independent World Commission on the Oceans, is interested in holding hearings in Senegal. Thanks to Margaret Wood of IOI-Halifax for sending so promptly copies of the brochure and questionnaire produced in

Canada. Hopefully these can be adapted by IOI-Senegal. Discussions then focused on the future of IOI-Senegal . In order to augment its training and research capacity both within the country and throughout the region it was felt that all efforts should be made to secure Japanese technical assistance. The Minister pointed out that this will require close collaboration and coordination among the various ministries, such as Fisheries, Agriculture and Rural Affairs. He indicated his willingness to work towards such a goal.

met with Hara Keiichi  
2nd Secretary,  
Embassy of Japan  
Corniche Ouest  
B.P. 3140 Dakar

It seemed to us that Mr. Keiichi, had already been briefed by Mr. Togawa. On arrival, he presented Dr. Toure with brochures and application forms for their Small Grants Programme. Such grants of less than \$US50,000.00 are usually awarded for the purchase of office equipment, supplies or small construction projects.

Wednesday 20 March met with Papa Abdoulaye Seck  
Institut Senegalais de Recherches  
Agricoles (ISRA)  
Dakar Senegal

Mr. Seck indicated his complete satisfaction with the efforts of Dr. Toure and his team. Based on this experience, he felt that ISRA would be honoured to support new proposals from IOI which would strengthen and enhance existing networks within Senegal and throughout the region.

Thursday 21 March met with Alioune B. Camara  
Regional Program Officer  
Centre de Recherches pour le  
Development International(CRDI)  
BP 11007 Dakar

Mr. Camara pointed out that the goal of this Canadian agency, has always been to develop scientific capacity in developing countries. IDRC has over twenty years experience in western Africa. Like all Canadian aid agencies, IDRC is currently undergoing major changes, but Africa is a focus area and he felt that given the similarity of goals of IDRC and IOI there would be future opportunities to collaborate in such areas as developing local capacity as well as the introduction and use of new information technologies.



Friday 22 March met with Mr. Baram Mbangue  
 Directeur du Cabinet for  
 Min. of Agriculture Robert Sagna

He indicated his support for the work of Dr. Toure and his colleagues and encouraged us to put forward new proposals for the consideration by the Director of ISRA and the Minister of Fisheries.

met with Mr. Bakary Kante  
 Director of Environment  
 23 rue Calmette  
 Dakar

Mr Kante an active environmentalist, both on the domestic and international fronts, welcomed the opportunity to learn about the work of IOI-Senegal and indicated his willingness to support future projects and activities. Mr. Kante is a member of ACOPS and has broad experience with UNEP and its Regional Seas Programme as well as UNDP and FAO.

Unfortunately, a meeting with Mr. Lachance at the Embassy of Canada was cancelled at the last minute, when he was involved in a minor traffic accident. We left behind materials for his consideration and Dr. Toure was advised to reschedule an appointment.

met with Mr. Mmadou Mamoune MBacke  
 Charge de Programme  
 U N D P  
 19, rue Parchappe, Dakar

Mr. MBacke was pleased to meet us and to learn about the work of IOI-Senegal. He felt there were lots of very concrete ways of assisting Dr. Toure , such as the dispersal of funds from UNDP in New York . He looked forward to deepening contact between his office and IOI-Senegal.

After our final appointment on Friday, Dr. Saigal and I returned to the CRODT where the weekly summary session was underway. Several participants had prepared written summations which were circulated. Lecturers from the week's roster were available for comment and a lively discussions ensued.

## Conclusions and Observations

1. I recommend that other members of the Board of IOI avail themselves of the opportunity to see IOI in action, so to speak. It is a very different view, than one is able to get from attending annual meetings or PIM conferences.

2. IOI-Senegal is in the very capable hands of Dr. Diafara Toure. Not only is Dr. Toure the Director of CRODT, a major marine research institute in Senegal( forty researchers);but he also leads the National Association of Research Scientists. For his work in this area, Dr. Toure has been commended not only by the government of Senegal, but also, by the Third World Academy of Sciences based in Trieste, Italy.

3. The elaboration and production of course materials in French is of extremely high quality and is keeping pace with the Centre's ability to conduct Training Programmes. The first course held in September 1995 was attended by twenty-three Senegalese from organizations concerned with marine affairs. According to Dr. Toure, much was learned, hopefully each course will demonstrate improvement in terms of quality of lectures, teaching materials developed and efficiency of delivery. Organizing training courses has strengthened links with Cheikh Diop University, the African Institute for Management Studies and the African Regional Centre for Technology. Although there is much more course development work to be done, I am encouraged by the Centre's very impressive beginning.

4. Numerous events conspired to delay the delivery of courses as planned in 1995, but I think the Centre is on its way. In addition to the current six week course, plans are underway for a two day workshop for top level government decision-makers to be held in September and for the development of course materials for the Train-Sea-Coast network with a test course planned for late October on the following topic "Harmonisation des Legislations pour une Conservation Durable des Ressources en Afrique de l'Ouest."

5. The course development team draws its membership from an impressive network of government agencies, research laboratories and the university located within Senegal. To develop closer ties within the region will take time but the Centre is aware of the task ahead. In fact, discussions are underway regarding how to communicate most effectively via brochures, newsletters, etc.

In conclusion, I believe that IOI-Senegal is well positioned to grow to meet the challenges ahead. The global network of IOI Operational Centres will be enriched by its experiences.

**PROGRAMME TRAIN-SEA-COAST  
IIO-SENEGAL**

**PROJET DE PLAN DE TRAVAIL**

Par

Diafara TOURE : responsable  
Birane SAMB (CRODT)  
Abdoulaye SAKHO (UCAD)

**Sujet à traiter :**

**HARMONISATION DES LEGISLATIONS POUR UNE CONSERVATION DURABLE  
DES RESSOURCES EN AFRIQUE DE L'OUEST**

*I. Analyse du problème* comprenant les *analyses du travail à faire* et de la *population cible (fin mai 1996)*

*Analyse du problème* doit permettre de répondre aux questions suivantes:

*Quel est le problème que l'enseignement doit résoudre?*

*Quelles sont les causes?*

*Existent-ils des mesures d'aménagement pouvant rendre effectif  
l'enseignement?*

*Quelles sont les solutions autres que la formation?*

**- Analyse du travail à faire**

On doit procéder à une analyse systématique du travail afin de définir les compétences requises pour acquérir les capacités, attitudes et les connaissances nécessaires pour une bonne réalisation du travail.

**- Analyse de la population cible**

Les informations portant sur les attentes de la population ciblée pour la formation doivent être mentionnées. Il est aussi nécessaire de connaître pour cette population, le niveau d'éducation, les méthodes souhaitées d'assimilation des connaissances et le niveau de base des compétences.

**II. Développement du programme  
(fin juin 1996)**

Niveau de performance attendu des participants à la fin de la formation

### **III. Développement des modules d'enseignements (fin Août 1996)**

Un plan détaillé des modules d'enseignements à développer

### **IV. Production de matériels d'enseignement (fin septembre 1996)**

support pédagogique  
figures, cas d'étude etc...

### **V. Validation et analyse**

(mi-octobre 1996)

### **VI. Validation du cours de formation**

(fin-octobre 1996)

## **PERSONNES RESSOURCES CONCERNEES**

Diafara TOURE (CRODT) Responsable

Birane SAMB (CRODT)

Abdoulaye SAKHO (UCAD)

Aboubacry N'DIAYE (Commission Sous Régionale des Pêches)

N'DIAW DIOUF(UCAD)

Mme Aminata CISSE NIANG (UCAD)

Ibrahima Khalil DIALLO (UCAD)

D'autres compétences pourraient être sollicitées en fonction des besoins

A P P E N D I X    I I

**Conceptualisation of a Project for Integrated Development  
of Coastal Areas through Information  
Dissemination and Ecotechnology**

**Project Outline**

The Project, which is technology-intensive, would be a joint endeavour between:

- (i) the concerned governments who would provide the extension services, credit etc.
- (ii) the International Ocean Institute which would provide its global network and training expertise
- (iii) the Swaminathan Foundation which would contribute its research findings in coastal ecosystem dynamics and experience in extending ecotechnologies in biovillages.

The Project would take up 4 groups of 10-15 villages each in the coastal zones of Costa Rica, Fiji, India and Senegal and provide the villages information about ecotechnologies that lead to economic upliftment, ecological sustainability and employment generation. Thus the three regions of Africa, Asia, Latin America and Oceania would be covered.

The methodology would be through:

- training trainers from Costa Rica, Fiji, India and Senegal at Madras about the research done by Swaminathan Foundation and the manner in which micro-level field projects need to be drawn up. This would be a joint endeavour of IOI and the Swaminathan Foundation;
- the trainers would thereafter train project managers and extension workers on how to adapt ecotechnology-based projects to individual areas and persons;
- thereafter micro-projects would be prepared for farmers, fisherfolk and local entrepreneurs (who would establish ecoenterprises in the post-harvesting, marketing, information dissemination etc. sectors) by the extension workers. Through constant contact, between project managers extension workers and the farmers the projects would be operationalised.

The Project is expected to last 4 years in the initial adaptive research-cum-demonstration phase. During this time at least 40 trainers (10 per country) and 12-15 project managers (3-4 per country) and 120-160 extension workers would be trained (30-40 per country) in the first year. Each extension worker would be given a target of 20 projects for the remaining 3 years. Thus 2400-3200 micro-projects would be established during the next three years. Twice Annually there would be workshops of all those involved in the Project so that experiences could be shared and new ideas developed.

The Project follows the great stress laid by UNCED on the sustainable management of coastal ecosystems. The threatened nature of aquatic ecosystems is due to the fact that the majority of the worlds people, including many of the poorest live along rivers and coastlines.

The Project seeks to add economic value to the time and work of the poor, through a pro-nature, pro-poor and pro-women orientation. The Project seeks to address the interlinked issues among the physical, social, economic and ecological parameters relevant to the technological empowerment of the poor. This the Project endeavours to achieve through an integrated on-farm and non-farm employment strategy based on the blending of traditional ecological prudence and technologies with state-of-the-art technologies such as biotechnologies and information, space and renewable energy technologies.

The Project also seeks to achieve the development of endogenous capacity for the development of appropriate technology-intensive packages which could lead to sustainable management of the coastal ecosystem through better water and land management practices. The projects as tested and validated could thereafter be widely disseminated in developing countries.

The Project is, thus, basically a research-cum-demonstration programme intended to develop successful packages which have a wide applicability.

### **Project Strategy**

The strategy for achieving the above is through:

- . utilising the facilities made available by the Governments of Costa Rica, Fiji, India and Senegal in the form of extension services and other in-kind commitments;
- . capitalising on the 25 years experience of the International Ocean Institute (IOI) in all matters relating to the oceanic ecosystem. The IOI, a non-profit, international NGO, has along with its associated partner associations, engaged itself in matters relating to the coastal and oceanic ecosystem, integrated coastal management, problems of small islands, land-ocean-air interface, regional cooperation in development, acquisition and transfer of marine technology and other related issues (detailed note at Annex A). Through its activities and the fact that it has over 1500 alumni in 100 developing countries the IOI is in a unique position to disseminate globally the technology-intensive packages developed in this pilot demonstration project;
- . capitalising on the successes of the M.S. Swaminathan

Research Foundation (MSSRF) in designing and implementing a programme for the sustainable management of coastal ecosystems in India through the extensive use of ecotechnology based packages. MSSRF, a Trust set up by the world-famous scientist Dr. M.S. Swaminathan, has developed ecotechnology projects to sustainably manage the wealth of coastal ecosystems (detailed note at Annex B).

- . utilising the capacities of the four IOI operational centres set up in Costa Rica, Fiji, India and Senegal to cover Latin America, Oceania, Asia and Africa. This was made possible by a \$ 2.6 million grant from GEF;
- . capitalising on the extensive training materials developed regarding sustainable development of the coastal zone, policy research done and networks established by the four IOI Centres in the last three years.

#### **Problem Addressed**

The present unsustainable practices in coastal villages are leading to:

- degradation of physical habitats of coastal areas (wetlands, mangroves, coral reefs, land conversions);
- introduction of toxic chemicals (pesticides, fertilizers), nutrients and sediments into the sea which are then carried across national boundaries by currents and living resources;
- overfishing, bad water management, salinity of the soil.

Solutions to the above need a comprehensive approach that integrates development with ecology and leads to sustainable development incorporating the co-option of the indigenous population, women and other vulnerable sections of society.

Improvements at present are being mainly sought through macro-policies at the national level. Assumption is that if policies are right and coastal zone management is integrated, solutions will automatically follow. The applicability of this approach to developing countries is limited however due to:

- . lack of developed industrialised sectors which can respond to government policies, plans and programmes;
- . very large sections of the population having no access to information, technology or resources.



Also systems developed so far (GIS, satellite based environmental monitoring, fishery surveys etc.) tend to cover large time and spatial scales and are thus of very limited utility to developing country managers responsible at the local field level.

There is need, therefore, to complement the approach adopted so far (which is top-down) by a bottom-up micro level approach which develops site-specific and person-specific solutions at the level where it really matters. This would also assist managers in developing countries who need practically oriented research activities that help in the decision-making processes that lead to sustainable development.

### **Reasons for GEF Support**

The Project has multiple benefits leading to improvement of social, economic and environmental conditions. It would:

- alleviate poverty and tackle unemployment thus leading to sustainable development and preservation of biodiversity;
- transform lab "know-how" into field level "do-how";
- make development site-specific and contextual to the needs;
- produce case studies that would make decision makers aware of:
  - . the need for comprehensive ecosystem-based approaches
  - . how their activities influence the aquatic environment and the need for correct water management practices
  - . the need for a regional approach;
- build institutional capacity;
- develop trained manpower;
- act as a pilot project for being adapted in other developing countries;
- lead to greater South-South cooperation;

The Project will also lead to the development of endogenous capacity by training extension workers, farmers, fisherfolk and decision makers.

Besides the Project covers three of the four focal areas of GEF: international waters (through sustainable management of the

coastal zone and thereby preventing land-based pollution of the oceans), biodiversity (through alleviation of poverty, prevention of land degradation) and global warming (through preservation of coastal habitats and sequestration of CO<sub>2</sub>). The Project being innovative, research oriented and having large externalities would not be funded by any national government on its own. Thus if GEF funding was not made available the Project would not be taken up at all.

**INTERNATIONAL OCEAN INSTITUTE**

The IOI's task, as defined in its Statutes, is:

to promote education, training and research, to enhance the peaceful uses of ocean space and its resources, their management and regulation as well as the protection and conservation of the marine environment.

The IOI is an independent, nongovernmental, international, nonprofit organisation, incorporated in the Netherlands, with headquarters in Malta. It has a Network of operational centres in Malta (University of Malta), Canada (Dalhousie University), China (State Oceanic Administration), Fiji (University of the South Pacific), India (Indian Institute of Technology), Japan (Yokohama City University), Senegal (Centre de Recherches Oceanographiques), and Costa Rica (University Nacional), (diagram of Network attached).

The Centres at Fiji, India, Senegal and Costa Rica were established in 1993 under a grant of \$ 2.6 million from the Global Environmental Facility.

Through these centres, the International Ocean Institute is extending the results of its research programmes and Pacem in Maribus Conferences to the general public, policy makers, civil servants, other nongovernmental organisations and representatives of the private sector. This activity is largely, but not exclusively, aimed at organisations and institutions and persons in developing countries. The main objective of the symposia, conferences, and training programmes conducted by the centres is to focus attention on the oceanic environment with special reference to the coastal ecosystem, integrated coastal zone management, acquisition and transfer of marine technology, regional cooperation, land-sea-air interactions, the problems of small islands and the sustainability of the oceans.

The approach of IOI is to bring together the various specialists involved in the oceans -- in science, technology, economics, law, management -- to help them transcend their narrow specialisations and help create a common language that can lead to the development of a common culture: a new spirit and a new faith. The language has to be simple so that the average person can understand it. This would help in the creation of a new global environmental culture and be in line with the attempts being made to harmonise science and spirituality, materialism and ethics.

IOI's partner institutions in the developing world (China, Costa Rica, Fiji, India and Senegal) bring a wealth of contextual research and implementation knowledge to the IOI Network.

In China IOI is associated with the State Oceanic Administration (SOA) of the Peoples Republic of China. SOA is the coordinating body for all matters concerning the oceans. SOA has been playing an important role in the West Pacific region in the promotion and development of the regional economy and in improving marine

resource utilisation and environmental protection. SOA has achieved considerable experience in the sustainable development of ocean resources, marine environment protection and deep seabed research.

In Costa Rica IOIs partner is the Universidad Nacional (UNA). UNA engages itself in extension activities so as to enrich the contact between the University and the coastal community. It has programmes on ocean satellite applications, coastal marine pollution, coastal information system, risks to coastal area and a mareographic and sea state service. UNA seeks to offer rural farmer communities alternatives to increase their incomes and production in harmony with the conservation of natural resources. UNA also networks with the Earth Council and the University for Peace.

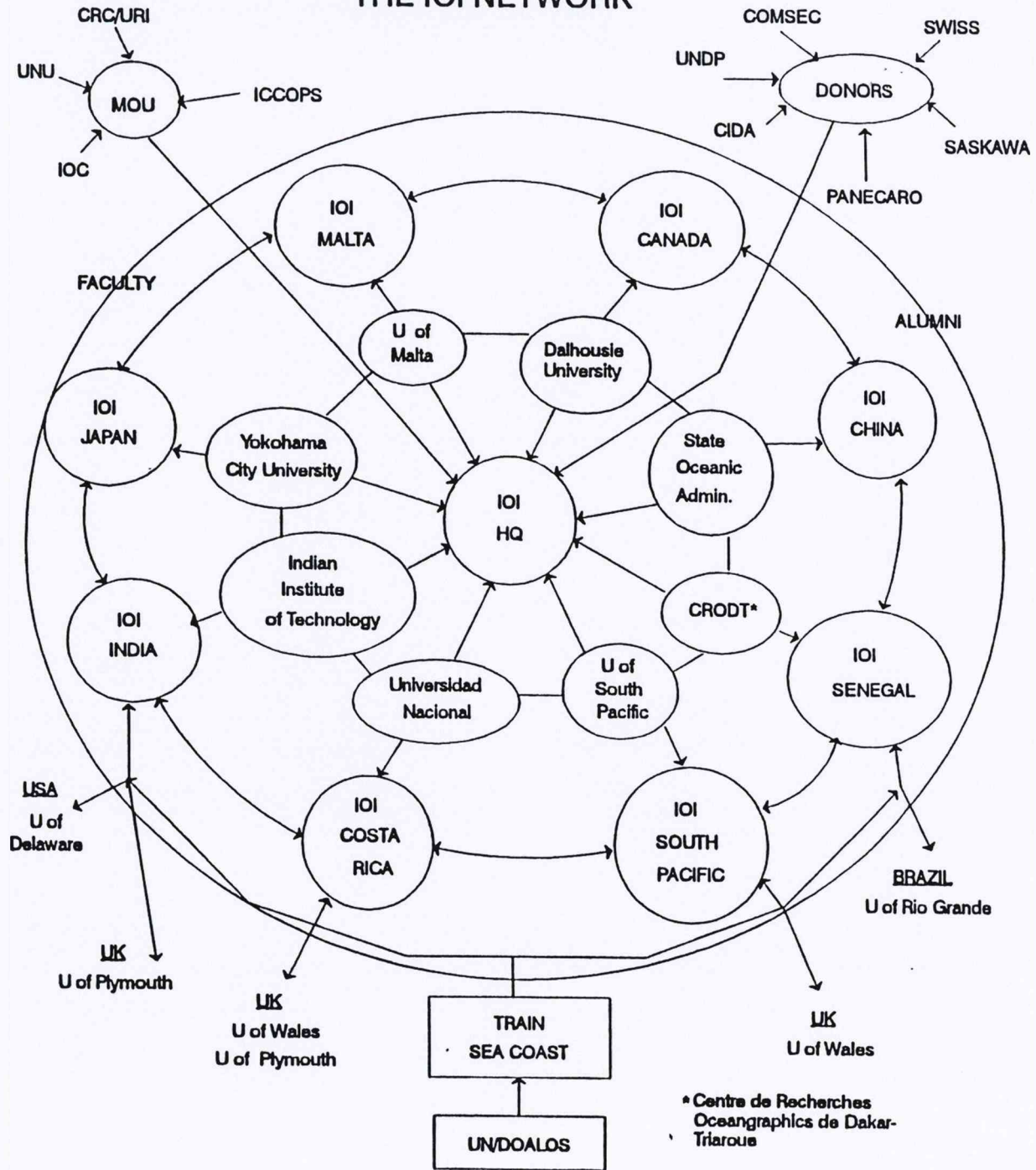
IOIs partner in Fiji is the University of the South Pacific (USP). USP serves 12 island states in the South Pacific and through its training and research programmes seeks to solve their problems. It has networking relationships with South Pacific Regional Environment Programme (SPREP).

IOIs partner in India is the Indian Institute of Technology, Madras (IITM). IITM has probably the largest Ocean Engineering Centre in the developing world. IOI India has networking relations with a large number of institutions including, inter alia, National Institute of Oceanography, Goa and National Institute of Ocean Technology, Madras. All the above institutions are globally recognised as Centres of Excellence.

In Senegal, IOI is based in CRODT, the Senegalese Institute for Oceanic Research. IOI Senegal has networking relationships with the University of Senegal, the African Regional Centre of Technology, UNESCO/COMARAF etc.

IOI Centres are also part of UNDP's Train-Seacoast Network which enables it to extend its experience to a large number of other developing countries as well as to learn from them.

# THE IOI NETWORK



The M.S. Swaminathan Research Foundation was established in July 1988 as a non-profit Trust. The following issues are of central concern to the Foundation:

- \* Promotion of sustainable and equitable agricultural and rural development
- \* Development of ecologically sound and economically viable "Green Technologies" by integrating traditional skills and frontier science, and
- \* Generation of greater opportunities for skilled employment, particularly for rural women and youth.

#### Activities of the Foundation

To turn this vision into action, three kinds of activities were planned for the period 1990-95, branching into research, integration and communication.

1. Setting up a research centre for Sustainable Agricultural and Rural Development at the Institutional Complex, Taramani, Madras focussing on:
  - . programmes for conservation, evaluation and utilisation of our biological wealth, with an initial emphasis on coastal ecosystems
  - . development of methodology to measure and monitor sustainability in the improvement of biological productivity
  - . anticipatory research on problems relating to changes in sea levels, precipitation and temperature.
2. Organising a research - action interface through:
  - . workshops on issues relating to science and society, involving both social scientists and those engaged in the leading edge of technology development and dissemination
  - . training programmes for trainers
  - . demonstration and operational research, involving local communities. A participatory approach, involving close interaction with user communities guided these activities.
3. In the next phase the plan is to set up:
  - . an Information and Communication Centre
  - . data bases, computer-simulation models

- . computer-aided instructional techniques
- . an Asian ecotechnology network in association with UNESCO.

### The Centre for Research on Sustainable Agricultural & Rural Development

#### Objectives

- . To integrate equity and sustainability in technology development & dissemination
- . To harmonise the demands of intra-generational & inter-generational equity, or equity of present and future, and
- . To promote pro-active research and action in relation to equity and sustainability.

#### Mandate

The prime task of the Centre is to develop and disseminate technologies that will be both ecologically sustainable and economically viable and would lead to the generation of opportunities for skilled jobs and higher incomes in villages. Youth and women will be the main target groups, since the major challenges facing rural India are the flight of educated youth from the villages and the low and uncertain incomes and enormous drudgery of women. Agriculture, including crop and animal husbandry, fisheries, forestry and agro-industries, will be the focus of technology development.

#### Scientific Strategies

The new technologies to be developed by the Centre must fulfil several criteria. They must be knowledge-intensive, based on the fullest possible use of available scientific knowledge. They must be capable of adoption by rural communities with scarce resources and also of replication under the prevailing socio-economic and socio-cultural conditions. They must lead to diversification of labour and not to unemployment, and at the same time be ecologically viable. To achieve all these goals, the scientific approach must aim at blending traditional and frontier technologies or what are referred to sometimes as 'survival' and 'sophisticated' technologies. As a first step, well planned inter-disciplinary and trans-sectional scientific research must provide the know-how essential for technology blending.

#### Designing and Implementing a Coastal Systems Research (CSR) Programme for the Sustainable Management of Coastal Ecosystems

The Centre took up this research project during 1990-95.

India has a coastline of over 7000 km and Tamil Nadu's coastline extends across 1000 km. Coastal communities depend for their livelihood largely on fisheries, forestry, animal husbandry and tourism. Coastal areas are getting bereft of natural vegetation such as mangroves, sea grasses and coral reefs. These are amongst the most diverse ecosystems on earth - the marine equivalent of tropical rain forests. Most people inhabiting the coastal areas are poor; women in particular perform unskilled and underpaid jobs and child labour persists.

Coastal areas offer scope for launching an integrated programme of management of land and sea surface on ecologically sound lines.

A Coastal Systems Research Programme (similar to Farming Systems Research) was initiated. An operational research project mode with the active participation of farm and fisher families was adopted. Training was on the basis of learning by doing. The major components of the CSR Programme was capture fisheries, aquaculture and coastal agro-forestry, integrated into a sustainable coastal resources management system. Coastal forestry included protecting existing mangrove forests and planting mangrove species, palmyra, casuarina, cashewnut and coconut. Agro-forestry systems included animal husbandry and fodder production programmes, the choice of the animal species being based on local preferences and marketing opportunities. Training Programmes were conducted in the field of brackish-water aquaculture, fish handling, processing and marketing and raising nurseries for agro-forestry systems.



Future Strategy of the IOI: Views by  
the Executive Director

1. Introduction

The following analysis is presented in order to stimulate discussion and reflection. The alternative suggestions are based on my experiences and observations, in the inter-governmental and non-governmental systems. I am of course not claiming any originality or that the analysis is in any way complete. There may exist many more alternatives than the ones I consider here. A rather complete analysis of environmental NGO's is presented by G.J. Hewison (1996) in Ocean Yearbook 12.

There are several NGO's which are based on the network principle. The difference between them and their impact appears to be how firmly the network is United together. The unifying element is of course the common goal.

The IOI has a very large advantage in having a goal, a mission statement, a charter and being incorporated as a Stitching IOI. The common functions of IOI now are the organisation of courses, of the meetings of the Planning Council, the Governing Board and the PIM Conference. In addition there are preparations of proposals and possibly a mid-term meeting of the Executive Committee and the Directors of the Operational Centres.

An alternative way of organising this structure would be to have one Operational Centre Director be responsible for the Planning Council and Board and another for the PIM Conference, both being also leading the related fund raising campaign. Continuity could be achieved by letting the Director who has done the Planning Council and Board responsibility one year do the PIM Conference the subsequent year. The leading team would then consist of these two Centre Directors and the Executive Committee.

There would be requirement for international or common resources from IOI for both Directors, in terms of some monthly allowance, a half time secretary/assistant and the required travel. It would probably be sufficient with about, in all 60,000 US\$.

However, would it work? The integrity and the identity of IOI would decrease. Experiences from other similar situations suggest that it would not work, and would lead to disintegration. It is not a viable approach for an organisation which has such a goal as the IOI, and is a body working at the global level.

2. Closely connected network

This model of a close network of national bodies or centres or

even organisations with an international co-ordination office can be seen in several of the leading international environmental NGO's. During the running of the UNDP-GEF I project the IOI essentially developed into such a close network. However, it may not be necessary to have such a rather substantial funded project as the unifying element. The model could instead be an 'ocean world academy of science', where the Centres are working together with, for instance:

- Fellowship schemes;
- Joint training programmes;
- Joint coastal programmes;
- Annual PIM Conference.

Such a strategy will require some common funding. This may be obtainable through applications to donors willing to support projects which can run for several (3-5) years. Part of the funding will have to be used for supporting the Operational Centres running costs, administration, reporting and as seed money to generate further funding for other projects. Thus an overhead of 20% on the funds brought in for the common projects would be expected to be dispersed to the Operational Centres for motivated running costs. Assuming that 500,000 US\$/year are generated for the common projects from several donors, the overheads would still not give more than 10,000 US\$ per year for each of the 10 Operational Centres.

Such a closely knit network would require an office acting as the international focal point. There the staff would work full time for the Organisation. Their tasks would include preparation of the common proposals, discussions with donors, communication, preparation for the Planning Council and Board meetings and preparation of inputs for annual reports and newsletters. This would also, however, require regular inputs as regards report, newsletters, etc., from the Operational Centres. The Centres would remain autonomous and closely related to the host institutions but would also subscribe to the implementation of agreed common projects. The funding required for the international co-ordinating centre (or Headquarters) would be about 150,000 US\$ per year. Their funds would not, however, be available for the Operational Centres to draw on.

### 3. An international ocean NGO

This is essentially what IOI stands for. The IOI has a charter, a goal, a headquarters agreement and several MOU's with host institutions for the Centres as well as regards cooperation with other bodies. Furthermore, the IOI has observer status with several UN bodies, e.g. UNESCO, UN itself and UNEP. The IOI goal is stated in the charter and in the recently adopted mission statement of IOI. In pursuing to obtain its goal and mission the IOI needs to maintain and strengthen as much as possible its outreach and impact. This may be achieved by gradually transforming the existing network into a closely knit network of national affiliate organisations cooperating through an international office. The charter or "Stitching IOI" would

continue to unite the national organisations. However, the Operational Centres would gradually change to become national and regional bodies. A model is provided in the development in India. There a national Centre for Sustainable Development was created with one of its two divisions being IOI India. There is also a charter and statutes. Another model is the Halifax Centre, which is transformed into IOI Canada, with a separate charter and statute and governance. This includes a possibility for membership.

Depending upon the local-national conditions the other Centres could choose the most appropriate path of becoming an acknowledged national and gradually regional body. The Operational Centres would then be the nodes of IOI. They could form linkages with other national bodies, both NGO's and national authorities, as well as other regional bodies.

In order for this network to become a real international organisation there will, however, be a need to secure an income for each national-regional body and for the international office, possibly referred to as IOI International. Part of this basic funding could come from an endowment fund. However, this may not suffice. The additional funding could be obtained from membership fees. The membership could be: individuals; alumni's; private industry; national institutions or authorities; other NGO's; and possibly governments. The Operational Centres as the national organisations would be responsible for their respective nation and region, as appropriate and feasible. Membership fees would have to be agreed. There would have to be also an agreed management structure and administration of the funds obtained through the membership fees. This international ocean NGO would require an international part, or Headquarters, more or less like now. Rather than referring to it as headquarters, it may be more attractive to call it IOI International. The existing agreement with the Government of Malta would still cover the needs, as would the existing Stitching IOI. However, the tasks of the office would have to be specified. They would include in any case what was referred to in section 2, and what is presently done. The cost maybe about 200,000 US\$ per year. Likewise the tasks, responsibilities and budget of the national counterparts, the Operational Centres or IOI national organisations, would have to be specified.

The joint activities could include all those mentioned in section 2. In addition there could be a fellowship scheme for research grants at the Centres, joint co-operation with other organisations, including the inter-governmental ones e.g. UNEP, UNESCO (IOC), IMO, UN, which is already going on, but may need a more organisational rather than individual approach; services as virtual centre, providing advice, or as an advisory body utilising all the partners; and out-reaching campaigns to create awareness, generate education, counter ignorance and provide common support to more involvement, as is also now going on through some of the Centres; leadership seminars; and joint research projects; finally, the implementation of a joint comprehensive ocean and coastal area programme, supporting proper

governance and management of the marine environment. In this connection reference is made to the theme and aim of the PIM Conference 1998.

For the network to function as an organisation there is a need to have international funding for each of the partners. This funding should be obtained through the IOI International so as to provide for basic administrative support, seed money for generating and follow-up proposals and for ensuring inputs to common reporting and joint publications. There could possibly also be partial coverage of the salaries for the Directors, and travel allowances. We could aim for an initial funding of 100,000-150,000 US\$ per year for this purpose, to be divided among 8-10 Operational Centres. This would not be sufficient for covering joint activities. Funds for these must be generated through joint proposals.

In order to achieve this organisation there is also a need for more advanced planning than now. Joint actions must be agreed upon at an early stage and joint proposals prepared well in advance. This will require that the programme be prepared and agreed 1-2 years in advance. Thus the Planning Council and Governing Board should review the programme of work for year 2002 in year 2000. A preliminary discussion of the programme could be held at the meeting in 1999. However, there would also be required a mid-term meeting of the Directors with the Executive Committee, at which the programme implementation, funding and problems of the current year are presented, and the state of preparations for the subsequent year are reviewed. This mid-term meeting would take the form of a seminar, where exchanges of experiences and ideas for further developments and joint actions and new policies would also take place. It would be appropriate to organise this mid-term event always at the IOI International office. This office would have to be responsible for the organisation of the common IOI system-wide activities. As is now the case, the PIM conference would rotate and the annual Planning Council and Board meetings would continue with the PIM Conference. The PIM Conference theme, place and time should, however, be announced earlier than is now the case.

#### 4. Conclusion

The IOI is the only international body wholly devoted to the ocean, and the marine environment in a comprehensive fashion. There is growing interest for the ocean and the state of the marine environment. The coastal areas of the world are in many ways a national resource of priority interest; in some cases together with the resources of the related EEZ.

Unfortunately the sustainable development and proper management of the marine and coastal areas leave much to be desired. The fractionation and sectoral interests dominate and there is mostly no institutional co-operation and no integrated approach. The IOI has a large role or task to fulfil. In order to achieve the goal it is desirable that the IOI develops into a more close network than now, and possibly follows the scenario of

development indicated in section 3 above. This may be achieved over a period of some years, but it seems appropriate that the 1998 International Year of the Ocean is used to set the stage and agree on the process. That may generate an international non-governmental organisation with sufficient impact to play a continuous role for the proper development of the ocean in support of the implementation of UNCLOS and follow-up to UNCED. This development would also continue the efforts of 1998 International Year of the Ocean as a process into the next millennium. In this process the integrity as well as the goal of the IOI should be guarded and maintained.

The IOI would then also become a stronger and more viable partner than now in the cooperation with other bodies. The IOI has a reputation for being able to deliver and meet deadlines. This must be maintained. However, the cashflow situation is the central aspect which must be addressed through this further development. It is when this problem of cashflow has been solved that the organisation can be secure in delivering and playing a partnership role on an equal basis with other organisations.

Document Ex.com. 5/2/1  
 IOI Headquarters  
 Malta, May 1999

Report of the Executive Director  
(November 1998 - May 1999)

A summary is presented, on programme implementation and related activities carried out through IOI Headquarters since the previous report submitted to the Governing Board in November 1998. The substantive activities and financial positions of the Operational Centres will be presented by the respective Directors in Agenda Item 3.

1. Projects and developments

Headquarters has pursued the further development of some projects in accordance with the programme framework decided upon in November 1998. These include:

- Item 6*
- (i) Risk assessment and management in integrated coastal area management, where a proposal to Swiss Re has been followed-up, with a consultation in Zurich, 10-11 March, and preparation of an action plan for the first phase. This has been accepted and funds to start implementation have been provided to the Ocean Science and Research Foundation. It is expected that the distribution of work, schedule and individual tasks will be decided upon at the June meeting. The action plan for the first phase is attached as Annex 1.
- Now*
- (ii) Pursuance of the specification for the IOI involvement with the News Forum of the UNEP-GPA/LBA Office in The Hague, The Netherlands. Correspondence with the office has led to such specification in consultation and through communication with the Operational Centres. IOI-Canada has agreed to be the Team Leader. We are presently waiting for formal confirmation from the GPA Coordination Office and UNEP Headquarters. A draft MOU has been received, and commented upon.
- now*
- (iii) In consultation with research institutions in Bulgaria (Varna), Greece (Athens), Malta, and Germany (Hannover) a project proposal for a coastal zone project involving these institutions to be submitted to EU for possible funding is being elaborated. This project will include observations, risk assessment, modelling, and will contribute to the further specification of the coastal module of GOOS.
- IA 3*
- (iv) Some support has been provided to the specification of the project proposal for the continuation of the Eco-villages project, mainly in India. The proposal was submitted to the Japan Fund for the Global Environment in January. The JFGE informed us by end of April that the proposal has been endorsed and will be funded for

the first year. Funds for the major part of 1999 for the project in India has been received from Germany (GTZ).

Now  
(v) The finalisation of the IOI brochure and the establishment of an IOI Website have been pursued with the Operational Centre, Southern Africa. It is expected that the brochure will be available at the June meeting. Contributions are being made to the homepage.

3  
(vi) The Headquarters has continued to be associated with the further strengthening of the IOI-Operational Centre at the University of Malta. Several consultations have been held, proposals for initial activities have been made, and a revised MOU has been drafted. The IOI-Malta is now associated with several regional projects, e.g. the Mediterranean GOOS, the project referred to under item (iii) above, and the preparation of a training activity and workshop on economical oceanography with focus on small island developing states. Efforts are being made to associate IOI-Malta with marine and coastal area awareness creation and education at national level in Malta.

4  
(vii) Consultations have been held with several institutions following their expressed wish to establish an IOI Operational Centre or an Affiliate. Taking into account the guiding principle of the Board from November 1998, that no further Operational Centres be created until the sustainability of the existing ones have been secured, or if economical demands are placed on the IOI, these consultations have resulted in the establishment of Affiliates in Ukraine (Sevastopol), Russia (Moscow), Germany (Bremen) and Kenya (Mombasa). It is possible that the latter two will emerge as Operational Centres.

11  
(viii) Possibilities for further strengthening and development of the IOI has been studied on basis of the decision of the Board, November 1998, taking into account the status and statutes of various partners with which IOI is cooperating. A paper is provided to the June meeting on this matter (Document Ex.com. 5/11/1). This concerns also the strategy for planning and fund raising. Since fund raising is an inherent part of most of the activities this aspect is an essential element of the further strengthening of the IOI.

12  
(ix) A number of project proposals have been re-submitted and several have been drafted and submitted, following consultations with the Operational Centres concerned. The list of current proposals as far as Headquarters is aware is attached to Document Ex.com. 5/12/1 as

Annex 1.

**2. Reporting**

On basis of reports and other material received from the Operational Centres and otherwise available, the final report to CIDA was prepared, covering the period spring 1996 to spring 1999, as required by the agreement releasing the general programme support from CIDA for that period. The report is attached hereto as Annex 2. It has been accepted by CIDA. Subsequent correspondence has indicated that the general programme support for IOI from CIDA will be continued, following submission of the project proposal in fall of 1998 and budget estimates in spring of 1999.

Part of this support for 1999 is then planned to be used for the XXVII PIM Conference as part of the contribution from IOI through Headquarters.

Following information received from the Operational Centres in India, Southern Africa and Senegal, integrated reports, with associated requests for release of the remaining funds, have also been prepared and submitted to GTZ, Germany, and the Ministry for Foreign Affairs, Education and Developing Countries Division, The Netherlands. These reports have been accepted and the corresponding funds have been released.

As part of the previous JFGE funded project, the final report on the Workshop on "Women in Marine Resource Management", organised by IOI-South Pacific and the Women in Fisheries Network in 1998, was received and published as a separate report (copies will be provided). This report has been favourably received and could be used to generate further funding. It has been used in relation to the project proposals for Nippon Foundation and UNDP.

Reports on IOI programme activities and experiences over the past 2-3 years, largely based on the final report to CIDA, have also been provided to DFID (UK) and SIDA (Sweden) in pursuance of project proposals submitted to those bodies. Correspondence is going on, but so far there is no firm indication that funding will be forthcoming. It should be noted the project proposals were submitted following preparatory, positive discussions.

Preparations for the June meeting of the Executive Committee and Directors of the Operational Centres have also included a fair amount of reporting and preparation of documentation. The batch of documents was mailed out around 22-23 April, except the 1998 Audit report and this report.

The preparation of the 1998 Audit report has involved considerable communication with the Operational Centres. This was concluded by end of April and the report will be presented to the Executive Committee at the June meeting. The financial overview for the IOI Headquarters for the current year as of April/May is presented in Annex 3 to this present report.



The Directors of the Operational Centres are invited to present similar reports or overviews to the June meeting.

Correspondence has been maintained with all the Operational Centres regarding programme matters and project developments. The response is generally good. Attempts have been made to provide inputs from Headquarters to the IOI website managed through IOI-Southern Africa. Advice has been provided regarding course developments to some Centres, Affiliates, and to the national Institute of Oceanography, Karachi, Pakistan.

### 3. Participation in meetings

The executive Director has participated in several international meetings, following invitation.

In November he attended part-time the IOC Executive Council, Paris, 17-23 November representing IOI, and presenting the Revelle Lecture, apart from participating in the IOI meetings and the PIM XXVI Conference in Halifax.

In December 1998 he represented the IOI at the Second London Oceans Workshop, 10-12 December. Here reference was made to the PIM XXVI Conference and the resulting Halifax Declaration. A reference to the proposal for the establishment of a high level global forum to consider biannually marine affairs in a comprehensive fashion was included in the Workshop Report.

The executive Director participated in the Conference "Oceanography of the Eastern Mediterranean and the Black Sea", Athens, Greece, 23-26 February 1999, and delivered a key note presentation.

Consultations were held in Zurich, Switzerland with Swiss Re and Treuco, representing the Ocean Science and Research Foundation, regarding the risk assessment and management project, 10-11 March 1999. Following that the Executive Director attended the Second Euro GOOS meeting, Rome, 11-13 March, and delivered a key note presentation (following invitation).

The Executive Director was invited to attend the second meeting of the IOC Regional Committee for the Black Sea, Istanbul, 4-7 May 1999. However, since the Director of IOI-Black Sea was to attend the same meeting, the Executive Director considered it more appropriate that IOI was represented by him, and consequently arranged accordingly. The Director of IOI-Black Sea may possibly wish to report on the meeting.

The Executive Director was invited to attend the Second NGO Consultation on GPA Implementation, The Hague, The Netherlands, 26-28 May 1999. He has accepted the invitation. Unfortunately, Dr. Jan Stel, The Hague, who is very familiar with the IOI, was not available to represent the IOI.

The Executive Director will represent the IOI at the 20th Session of the IOC Assembly, Paris, 29 June to 6 July, 1999.

#### 4. Cooperation with other organisations

~~X~~ A submission has been made to the Secretariat of ECOSOC at the United Nations, New York, for provision of observer status of IOI with ECOSOC. A decision is expected in summer of this year (1999).

~~X~~ Consultations have been held with the IMO on the observer status of IOI with IMO. Informal information has been received that this is accepted. Confirmation officially is expected in June/July this year.

Substantial correspondence is being maintained with UNEP Headquarters, with the UNEP-GPA Coordination Office in The Hague, The Netherlands, and with the UNEP-CBD Secretariat Office in Montreal, Canada regarding the respective cooperation activities with the IOI. A proposal for the role of IOI with respect to the GPA News Forum has been submitted to the GPA Coordination Office. A draft has also been submitted to UNEP Headquarters for an IOI-UNEP proposal to the UN Foundation (the Turner Foundation). This was developed with IOI-Canada, through the Founder and Honorary Chair.

An MOU has been received from the UNEP-GPA Coordination Office, and has been accepted with some changes on behalf of IOI. A proposal for specific cooperation between the CBD Secretariat and IOI was transmitted in early 1999. The subject is under further consideration at their end, and a draft MOU is expected soon.

Cooperation with IOC of UNESCO is being maintained in the Black Sea and Mediterranean regions, and in the context of the IOC-China workshop on coastal mega cities, September 1999, in accordance with the decision of the Board, November 1998. The Executive Director has been invited to the Workshop in China.

Discussions and subsequent communications with the UNIDO Secretariat in Vienna, Austria, have indicated possibilities of cooperation with respect to coastal zone activities, risk assessment, and regional cooperative developments. Earlier proposals of IOI in this context may be re-vitalised. Further information may be available at the time of the June meeting.

In accordance with the existing MOU on cooperation between the IOI and the UNU, proposals for areas of cooperation has been made to UNU. This has been endorsed from their side and a focal point has been identified at their end. This process is now on-going. It is expected that IOI-Japan will also play a role in this effort.

Through IOI-Canada contacts are continuously maintained with WB and GEF and the Honorary Chair attended the CSD 7 Session in New York. She and the Director of IOI-Canada may wish to report more on this.

Cooperation with non-governmental bodies is also being maintained. This includes contacts with IUCN, HELMEPA, ACOPS,

and Mediterranean NGO's as MEDCOAST, ICCOPS and the Center of Euro-Mediterranean Regions for the Environment (C.E.R.E.), based in Athens. The Executive Director visited this Secretariat and the HELMEPA Secretariat when in Athens for the international conference in February 1999. The IOI has also submitted its membership declaration with the MED Forum, the Mediterranean Environment Forum, based in Barcelona, Spain. The V Mediterranean Environmental Forum was held in Barcelona, November 1998.

Interactions with foundations and donors are on-going more or less continuously. This is indicated through the list of project proposals (Annex 1 of Doc. Ex.com. 5/12/1) and the information given above and in section 3.

#### 5. Follow-up to meetings of Governing Board and Planning Council, Halifax, November 1998

The Executive Director provided identification and notations on follow-up actions to these meetings, on basis of the respective minutes, by letter of 11 February 1999. This is reproduced in the Annotated Provisional Agenda under Agenda Item 6 (pages 3-7).

Here follows a brief summary of the situation as of end April 1999 as seen from Headquarters with reference to the points made:

##### Board Agenda Item 5:

- (i) An up-dated alumni list, including what we have so far received, will be presented at the meeting;
- (ii) First parts of seed moneys have been transferred;
- (iii) This is provided in meeting Document Ex.com. 5/4/1;
- (iv), (v) and (vi): are implemented; JFGE proposal has been funded for first year; an MOU for GPA News Forum cooperation with IOI has been drafted.

##### Board Agenda Items 7 and 9:

- (i) and (ii): These processes are going on; Confirmation of submission of proposals, but so far no conformation of funding, except for JFGE; UNEP-GPA; possibly CIDA; and Swiss Re.

##### Board Agenda Item 10:

- (i) Newsletter No. 1 for 1999 has been prepared;
- (ii) Covered in Document Ex.com. 5/11/1, to be discussed at the meeting.

##### Board Agenda Item 12:

- (i) Covered by Agenda Item 11, and related documentation,

of the meeting.

Board agenda Item 13:

- (i) PIM XXVII programme, with speakers, chairs, rapporteurs, panelists has been sent out by IOI-South Pacific very efficiently; fundraising is being pursued on several fronts.

Board Agenda Item 14(1):

- (i) Correspondence with IOI-India; Reporting expected at the meeting;
- (ii) Information received from IOI-South Pacific in response to correspondence from Executive Director on this matter dated 6 April; Further information expected at the meeting, from the other Centres;
- (iii) This proposal was re-considered by the proposer, so will not be followed up, unless others consider it.
- (iv) This proposal should be further discussed at the meeting; so far no suggestions have been made;
- (v) This could be related to item(ii); we should discuss an approach at the June meeting;
- (vi) The previous Executive Director has been invited to contribute the IOI story of the 1990's.
- (vii) An update on developments is expected from IOI-South Pacific.

Board Agenda Item 14(2):

Is covered by Agenda Item 9 of the meeting and related document Ex.com. 5/9/1.

Planning Council Agenda Item 2:

- (i) This should be covered by Agenda Items 2 and 3 of the meeting;
- (ii) This should be addressed by the meeting; covered by its Agenda Item 12, and related document Ex.com. 5/12/1; initial programme specifications so far received from IOI-South Pacific; and Headquarters;
- (iii) This needs to be discussed by the meeting;
- (iv) This is to be discussed by Agenda Items 10, 11 and 12 of the meeting.

Planning Council Agenda Item 3:

- (i) is covered, and first parts of seed funding have been transmitted.

Planning Council Agenda Item 4:

- (i) see above Board Item 10(i);  
(ii) and (iii): see above under Board.

Planning Council Agenda Item 5:

Is being pursued through Headquarters.

Planning Council Agenda Item 6:

Is covered.

Planning Council Agenda Item 7:

See above, Board Item (14(i)).

Planning Council Agenda Item 8:

- (i) This must be further pursued and pushed.

Planning Council Agenda Items 9, 10, 11(1):

Covered by above under Board; The Honorary Chair may wish to report an outcome of the CSD 7 session.

Planning Council Agenda Item 11(2):

- (i) The executive Director has decided against drafting guidelines since he considers a pragmatic approach is best, where the IOI interests and mission are taken fully into account as the only mandatory guide. The meeting may wish to make other suggestions.

Preparations for the next sessions of the Planning Council and the Governing Board to be held in the IOI-South Pacific first week of November 1999 are under way, mainly through this meeting. Early warnings about the dates with preliminary invitations have been sent out.

The Executive Committee may wish to review the composition of the Governing Board bearing in mind the rotational renewal principle stated in Article 5(3) of the Articles of Association of the IOI, as follows:

"On staggered terms one-fifth of the members of the Board have to be renewed every year. Members of the Board may be re-elected for one successive term of five years".

The elections in spring of 1998 re-elected 3 members. With the

present membership of the Board, 3 members should be rotated/re-elected by the end of this year. They can be re-elected. One new member representing the Government of Malta was appointed at the end of 1998. In view of this the Executive Committee may consider that the requirements of 1/5 renewal are fulfilled with election or re-election of two members by the end of this year, for becoming Board members from January 2000.

Alternatively the Executive Committee may wish to propose that one of the two members whose membership terminates at the end of the year 2000 be considered for election or re-election at the end of this year. In the middle of the year 2001, there is one member whose membership terminates (cannot be re-elected) and three members who can be re-elected (if they so wish). With the 3 ex-officio members of the Board there are in all 18 members presently. The Executive Committee may wish to propose the election of two additional members. Such a move would utilise the total membership allowed by the Statutes.

Presently for the year 2002 there are 3 memberships who terminate and 1 who can be re-elected, and for 2003 there are 3 who terminates. Thus the rule of staggering renewal by 1/5 can be quite well maintained with a membership in the range of 15-20, inclusive.

It is suggested that the Executive Committee reviews the situation and authorises the Executive Director to take the necessary actions in the second half of this year.

With respect to other preparations for the meetings in November 1999, the meeting may wish to propose agenda items or other specifics.

#### **6. Reports from the Operational Centres**

It is expected that the Directors will provide such brief reports, at the meeting if not before. So far one has been received which is attached hereto as attachment 1.

Annexes

- Annex 1: Action plan for first phase of risk assessment and management project.
- Annex 2: Final Report to CIDA on programme support to IOI 1996-1999. (International Ocean Institute P7990-0893-S 51179).
- Annex 3: Financial overview for IOI Headquarters per April/May 1999. [to come by mid-May]

Attachments

- Attachment 1: Activity Report for 1999 of IOI-Black Sea Operational Centre, Constanta, Romania.

IOI Headquarters  
17 March 1999  
and 19 April 1999

**Project Action Plan**  
**Sponsorship by Swiss Re of first phase of project**  
**to enhance role of risk assessment and management**  
**in integrated coastal area management**

**1. Background**

Following the meeting between Swiss Re and International Ocean Institute (IOI)/Ocean Science and Research Foundation (OSRF) on 1 October 1998, submission from IOI/OSRF to Swiss Re of draft project proposal of 8 October 1998 and of adjusted project proposal of 31 January 1999, and meeting between Swiss Re and IOI/OSRF on 11 March 1999, this plan for the implementation of the first phase of the project is submitted. This is based on the meeting of 11 March 1999 and the adjusted project proposal, which is attached hereto for reference (Annex 1).

**2. Plan for first phase**

**2.1. Seminar (1-2 days) on risk management within Integrated Coastal Area Management to be organised together with BBS**

A 1-2 day seminar will be organised for a specific target group of practitioners of insurance, and IOI Operational Centre Directors. The aim is: (i) to bring together representatives of the insurance industry and of selected sectors operating in coastal areas, e.g. tourism, oil industry, living marine resources, ports and harbours, to discuss risk management issues of common interest, identify solutions and increase awareness for coastal risks (ii) to prepare material for training modules directed at specific target groups, and public awareness raising material, which can be used in the regions following incorporation of specifics from the region in question; and, (iii) to expose the IOI Operational Centre Directors to insurance practitioners and to the Risk Prediction Initiative of the Bermuda Biological Station for Research Inc, establish contacts, and provide information about region specific problems and priorities from the IOI Operational Centre Directors.

Working documents covering the following areas will be prepared:

- (i) an overview of elements of risk assessment and management with specific reference to integrated coastal area management, giving a reasonably comprehensive theoretical framework for further incorporation with sector specific issues;
- (ii) overviews of risk assessment and management for a few selected sectors with reference to coastal area management, e.g. tourism; ports and harbours (shipping); living marine resources (fisheries, and mari- or aqua-culture);



- (iii) analysis of a few selected case-studies of natural or society-induced catastrophes, focusing on what went wrong and identification of reasonable criteria for insurability.

The results and experiences of the seminar will be used to revise the material for training and awareness creating purposes in developing and emerging economies (countries). The focus of the seminar is the insurance industry.

For the seminar a steering committee consisting of the Director of BBS (or his representative), the Executive Director of IOI (e.g. Dr. Gunnar Kullenberg) and a representative of Swiss Re (e.g. Dr. I. Knoepfel) would be constituted. The coordination and organisation of the seminar is the task of the IOI. The seminar would be held in the first quarter of the year 2000, preferably in Bermuda. The overall cost of the seminar would be about USD 120,000, with about 30% for preparations, about 50% for the operation, 10% for reporting and 10% contingency. It is expected that the BBS will provide facilities as an in-kind contribution to the project.

## 2.2. Five-day training module for mid-career civil servants

In parallel to the seminar (action 2.1) a five-day training module on risk assessment and management, as part of integrated coastal area management, will be prepared and launched in the IOI Training Programme on "The United Nations Convention on the Law of the Sea: Its Implementation and Agenda 21," to be presented at IOI-Canada, Halifax, June-August 1999. The module will build on material and experiences from the module on Disaster Mitigation and Preparedness presented as part of the same training programme in 1998.

The course-module material and the experiences from its presentation will also provide an input to the seminar. The seminar in turn will provide feedback to the course module so that it can be adjusted to be presented as a self contained module in different regions, through the other IOI Operational Centres.

The development and presentation of the course module will be the responsibility of the IOI-Canada office in Halifax. The estimated resource requirement for this is about 20,000 USD.

## 2.3. Public awareness creation and information

As part of the programme for the year 2000 the IOI Operational Centres which are working with coastal zone development and management projects will prepare overview presentations and posters on the situation, associated risks and vulnerability of `their' coastal zone segments. It is planned that the material will be presented in poster format at the forthcoming IOI Conferences, including possibly at the Pacem in Maribus Conference 2000 (PIM XXVIII).

The material can be used in the further development of public awareness creation activities as part of the present project, and can also be provided to Swiss Re in suitable form for their use with respect to in-house awareness creation and information.

The preparations of the material are to be done by the respective IOI Operational Centres. Contributions are envisaged from the Operational Centres in Costa Rica, Senegal, South Africa, India, South Pacific (Fiji), Kenya and China. Estimated costs are about USD 30,000.

### **3. Schedule and milestone**

The seminar (2.1.) is to be prepared during the remaining part of 1999 and implemented in first quarter of 2000.

The course module in Halifax (2.2.) is presented in July 1999; and the associated material and report on experiences is completed during the fall of 1999, for presentation at the seminar.

The public awareness raising material (2.3.) is prepared during 1999-2000 and may be provided during the second half of the year 2000.

The seminar (2.1.) is expected to provide the milestone which will make it feasible to review the project implementation so far and decide on the continuation into the second phase with associated specification of actions of that phase.

Coordination, communication, preparation of documents, reporting to be organised through the IOI Headquarters. Estimated cost USD 10,000.

### **4. Overall budget**

The overall budget estimate for this phase is USD 180,000, to be shared equally between Swiss Re and IOI. The whole project is expected to last 3 years, with a budget of USD 300,000, to be shared equally between Swiss Re and IOI. However, the cost of the second phase of the project which is focusing on dissemination, is flexible, starting with a minimum of USD 120,000.

International Ocean Institute

Report on program support from CIDA for 1996-1999

This report has been submitted to CIDA as the final report to the programme support grant for 1996-99 for the IOI, received from CIDA. The total amount of the grant is 525,000 Canadian dollars, over the period June 1996 to April 1999.

The financial report is not attached here, and neither the Annexes or Attachments. The list, however, is given in order to illustrate parts of the IOI production. There has, of course, been much more published material, e.g. courses, course reports, other reports, books and articles.

Section I.1. Programme implementation

1. Research

The research component has resulted in completion of major monographs:

- The Oceanic Circle, by E. Mann Borgese, UNU Press, 1998;
- Sustainable Development - the Eastern View, by K. Saigal, in press;
- Common Heritage of the 21st Century; Pacem in Maribus XXV, editor R. Rajagopalan, 1998;
- Ocean Yearbook, Volume 13, editors E. Mann Borgese, A. Chircop, M. McConnell, J.R. Morgan, University of Chicago Press, 1998.

These publications serve as reference literature, covering most major issues of marine affairs. This includes living and non-living resources; transportation, communication, shipping; environmental matters, e.g. the Global Programme of Action for the Protection of the Marine Environment against Land-Based Activities; Integrated Coastal Management; Regional Developments, including policies with respect to implementation of UNCLOS and UNCED agreements; peaceful uses of the ocean, security and military activities; common heritage in relation to various issues, including local communities, co-management and eradication of poverty. A thorough analysis of the role of the ocean for the global economical situation is presented in the Oceanic Circle, and a discussion of sustainable development in other cultures than the Western one.

Research in the individual IOI Centres have considered development of aquaculture and fisheries, provision of new and traditional technologies to coastal communities, development of coastal zone management, potential of the EEZ concept for sustainable development and equity, marine pollution problems and international instruments to address these; cooperation in ocean

research and systematic observations. Several individual publications have resulted.

This part of the programme contributes to dissemination of existing and new scientific information and results to decision makers; to the overall renewal and dynamics of the programme and the training; and to inter-regional communication and exchange of information to enhance mutual learning about shared problems.

## 2. Training and public awareness

Activities have been conducted in:

- IOI Halifax, on The United Nations Convention on the Law of the Sea: Its implementation and Agenda 21, with 23 participants; it included 8 modules, covering general oceanography, UNCLOS and UNCED 92, living and non-living resources, integrated management of ocean and coastal resources, shipping, ports, harbours, tourism and international cooperation. This course also exposes the students to a wide range of international experts in marine affairs;

IOI Halifax also provided for and presented a course module at the World Maritime University, of IMO, in Malmo, Sweden, with about 200 students.

- IOI Senegal, on management and development of artisanal fisheries in west and central Africa, with 26 participants; and a workshop on development of traditional fish processing, with 15 participants;
- IOI South Africa, on seaweed mariculture, with 16 participants; and workshop on community seaweed initiatives, involving 20-30 community members;
- IOI South Pacific, on Women and Coastal Resource Management with 20 participants; and several Marine Awareness Workshops in different parts of the South Pacific, with about 70 participants in each;
- IOI India, workshops, seminars and individual training in 15-20 coastal communities, in collaboration with local NGO's, and involving mostly women participants, about 2000 in all;
- IOI Costa Rica, on mechanisms and conditions for NGO's and coastal communities of Costa Rica, in support of integrated coastal management actions, with about 30 participants;
- IOI China, on the Law of the Sea with specific reference to deep sea-bed mining, with 14 participants.

This part of the programme constitutes the main effort in

training of mid-career civil servants and others, with exposure to ocean and coastal issues, linkages, interdisciplinary needs, ecosystems, policies, plans and programmes for sustainable development; and to increasing the number of trainers in IOI.

### 3. Conferences and seminars

The major Conference was the Pacem in Maribus XXVI, Halifax on 29 November - 3 December 1998, with the theme 'Crisis of Knowledge', attracting about 250 participants. This covered presentations concerning all major marine issues with thorough panel discussions. There was a strong participation and involvement of all attending.

The resulting declaration of Halifax included calls to governments and organizations and individuals for strengthened dialogues and a high-level ocean forum in the form of a Committee of the Whole of the United Nations General Assembly. This was subsequently taken up and endorsed by the Second London Oceans Workshop, 10-12 December 1998.

A leadership seminar on the Law of the Sea was held in Jamaica at the International Seabed Authority (August 1998). The IOI was also associated with several other conferences, seminars and lectures in celebration of the 1998 International Year of the Ocean, and members of the IOI Centres presented lectures and keynote speeches.

This part of the programme contributes to training, education, dissemination of scientific information to decision makers, public awareness creation, inter-regional communications to increasing the training capacity of IOI.

### 4. Publications

In addition to those referred to under Research above, several reports have been completed including:

- Final Project Performance Evaluation Report on the UNDP/GEF/UNOPS Project "Support for Regional Oceans Training" (1998);
- Global Network for Environmental Education/Enlightenment", final report 1998;
- National Marine Awareness Workshops" USP-Alafua, Samoa, report, 1998;
- Women in Coastal Resource Management, Project Report, Women and Fisheries Network, 1998/1999.

Regional newsletters have been published by the Centres, e.g. South Pacific, India; and regional reviews have been prepared for several regions in cooperation with UNEP. A number of individual research papers have been prepared for various publications.

This part of the programme is essential for spreading information about IOI; for increasing its training capacity; for communication of information on scientific results to users, decision makers.

#### 5. Policy development and evaluation

The IOI has contributed to the Report of the Independent World Commission on the Oceans, "The Ocean our Future", presented in September 1998; the contribution of IOI includes 3 regional hearings and individual contributions, primarily from Professor E. Mann Borgese.

As part of the IOI contribution to the 1998 International Year of the Ocean, Professor E. Mann Borgese and other IOI associates have pursued the proposal of establishment of a high-level forum for regular consideration of all ocean affairs, open to participation of the global community of countries and organizations, possibly in form of a Committee of the Whole of the General Assembly of the United Nations. This proposal has been presented to the United Nations General Assembly through concerned Member States, and is currently being pursued in the context of the CSD. It is a major ocean policy breakthrough and gives evidence of the role an organization like IOI can play through a persistent and consolidated work over a wide front of subjects and communities.

The evaluation and further development of the IOI programme and structure has been pursued by the Planning Council and the Governing Board. The annual meetings were held in Halifax, Canada 25-28 November and 27-28 November 1998, respectively.

The Planning Council (PC) meeting agreed on one up-dated "shared vision" text presenting the IOI (see Annex 1). In reviewing the programme the PC noted that there are several actions now going on beyond provision of training courses which involve almost all the Operational Centres, e.g.: coastal zone actions, local community work and ICAM-related capacity building; work with mariculture and fisheries and related communities; follow-up to UNCED agreements, in particular Agenda 21, but also the Conventions.

It was noted that the IOI is associated with the Train-Sea Coast (of UN-DOALOS); Train Fish (of FAO) and Climate Change Train (of UN); through several of the Operational Centres.

Much experience has been gained through these actions, and is being regularly exchanged between the Centres, (see also the part 2: Overall analysis, of this report).

Based on experiences from the 1998 International Year of the Ocean and the need to continue related efforts the Planning Council also identified several actions for the next two years which will draw on the IOI system-wide capacities, experience and competence. These actions included:

- (i) preparation of an Alumni book, with solicited contributions from IOI alumni;
- (ii) preparation of an overview of coastal zone conditions and quality of life in the coastal areas where IOI is actively working;
- (iii) preparation of an up-dated history of IOI for presentation at PIM XXVIII (in the year 2000);
- (iv) preparation of an ocean-base (data), modelled on reef-base and fish-base, possibly as a referral system;
- (v) preparation of an up-dated IOI publication list with adequate referencing;
- (vi) preparation of an Ocean Agenda, and launching of an IOI lecture series with leading people addressing the issues identified in the Ocean Agenda;
- (vii) work with children in coastal areas and retrieving information on how they see the coast and the ocean and what their conditions are, together with related scientific analysis of their expressions, and conditions they face and the "quality of life" they may expect.

These proposals were subsequently endorsed by the Governing Board (GB).

The Planning Council and the Governing Board also agreed that Annual or Bi-annual reports of IOI as a whole should be prepared, and that the agreed text (Annex 1) presenting IOI should be used as widely as possible to help ensure a consolidated and cohesive corporate image of the IOI. It was also agreed that a more upstream planning process should be used so as to provide for a 2 or 3 year evolving work plan (programme) and budget. This would give more lee-time for obtaining financial support.

The Governing Board concurred with the suggestions of the Planning Council. It also emphasized the need for some central funding for the Operational Centres; and for cooperation with other bodies but with ensured and maintained identity and consolidation of the IOI; and for continued efforts in seeking a diversified funding base. The reports (minutes) of the Planning Council and the Governing Board meetings are attached to this report, as they constitute the major internal evaluation and strategy documentation.

This part of the programme constitutes the governance, internal evaluation, policy formulation and programme development process of the IOI. It contributes to all the "Outputs/Expected Results", and ensures that the IOI can work and deliver as an organization, individually and in cooperation with other bodies, able to function as a reliable partner which can deliver.



## 6. Management, restructuring and networking

The Planning Council includes the directors of all the Operational Centres. The proposed programme of the Centres are presented to the Council, and a composite programme and budget is prepared. Part of the financial resources are obtained through IOI proposals submitted to different funding agencies; another part is raised directly through the Centres themselves, a third part represents the in-kind contribution of, e.g. staff, facilities, laboratories, ship-time, computer-time, from each Centre. Thus a transparent budget is prepared. The funds provided through IOI are centrally audited. This requires a timely sub-mission of accounts from the Centres. The implementation of the programme agreed by the Governing Board, with the related budget, is reviewed mid-term by the Executive Committee, which consists of the President, Vice-President, Honorary Chair, Chair of the Planning Council, Treasurer, Member of the Governing Board nominated by the Government of Malta, and the Executive Director. This mechanism will also now include participation, in part, of the directors of the Operational Centres. This will provide for the possibility of programme adjustments, increased exchange between the Centres, and planning of the programme at least one year in advance. This process was agreed in 1998.

The communication between Centres individually and with Headquarters is increasing, but needs further strengthening. The preparation of quarterly up-dates on programme and budget, agreed by the Planning Council and the Governing Board, in 1998, and a semiannual system-wide newsletter in electronic and printed version should help. Furthermore several proposed IOI system-wide activities prepared during 1998 will work in the same direction.

The Governing Board agreed that no new Operational Centres should be established until the existing ones were further consolidated.

However, affiliates could be established with the understanding that there would be no financial obligations on part of IOI. During the period (1998) two affiliates have been emerging with the following affiliations:

- (i) Moscow State University, State Oceanographic Institute and Moscow Office of the Natural Marine Park "Moneron Island";
- (ii) Sevastopol Institute of Biology of Southern Seas, Sevastopol, Ukraine.

The reasons for this are strong expressed interests on part of the institutions and the need for solidarity with these institutions working in economics under transition.

The financial basis for IOI has been further consolidated during the period. The Ocean Science and Research Foundation was established in early 1998 in Zurich, Switzerland. This provides

for the possibility of obtaining support, through the interest on the fund, for a minimum of infrastructure for the IOI system and in particular to cover such needs for IOI-Canada in Halifax and IOI Headquarters in Malta. The diversification of the funding has continued, with several contacts to private industries (e.g. Swiss Re), UN Funds in cooperation with UN Agencies, private foundations (e.g. MacArthur) and additional possible national donor agencies. Cooperation for this purpose is also sought with other interested NGO's, including regional ones.

The retrieval and dissemination of information on training actions, meetings and other marine affairs through the IOI system of Centres is being strengthened through association with other NGO's and with UN programmes, in particular UNEP and its offices for the GPA-LBA and the CBD, and IOC of UNESCO.

This part of the programme provides the basis for the financial management and communication system among the Operational Centres and with the IOI Headquarters. It also is a necessary component for the IOI to function as an organization.

#### 7. Experiences and lessons learnt

During the period 1998-99 it is in particular the understanding of the need for greater cohesiveness and a stronger corporate profile which has been confirmed. This is related to the conclusion of the UNDP-GEF project in 1997.

The situation was discussed at the Planning Council and the Governing Board meetings in November 1998. Some decisions and actions were then taken to remedy the situation, and further actions to be carried out intercessional were agreed.

Another lesson during this period is the realization of the need for more upstream planning of the programme so that there is more time to secure the required funding.

#### 8. Assessment of 1998-99

During 1998/99 there has been several expressions of interest to establish IOI Operational Centres or affiliates, besides from Ukraine and Russia. These include Germany, Nigeria, Kenya, Sweden and CPPS (Commission Permanente del Pacifico Sud Este, based in Ecuador). However, direct negotiations have not yet started. On the other hand, Trinidad and Tobago have informed that, for the time being, they are not in a position to host an IOI Operational Centre.

On-going research within the IOI family has resulted in several significant reviews and publications, referred to above.

The interest for the IOI courses is increasing as is the interest for the community-based work in cooperation with local NGO's. This is noticed from expressions of interest to initiate more such projects. The broadening of the IOI programme to the

coastal zone, towards addressing needs of poor communities and towards more public awareness and use of research results is having a positive effect. At the same time the regional and global perspectives and actions are maintained as seen in the cooperation with UNEP, IOC and regional NGO's; and in the initiative with the General Assembly of the United Nations. The inter-regional communication is increasing as evidenced through joint projects involving several Centres.

Problems facing the IOI include the short lead-time in programme adoption; the programme and budget for 1999 was adopted in November 1998 - this is not good practice, and the schedule is now being changed.

The partnerships and linkages between the IOI Operational Centres and their host institutions are normally strong. However, in some cases the host institutions do not see the advantage of the IOI association when substantial central funds are not available. During 1998 very important steps have been completed to address this problem.

Through IOI India and IIT Madras, a Foundation for Sustainable Development has been established with a Trust Fund. The Foundation has two divisions:

- IOI India linked to the IOI Network, and the Centre for Sustainable Development, linked to IIT Madras. A synergism is sought between the two in the programme development.
- Through IOI Canada, an incorporated Canadian Association for the International Ocean Institute has been established which links the IOI Canada to several sectors of society in Canada, and opens up possibilities for a broad funding base.

It is expected that these models will be followed in other cases.

The need for some guaranteed central funding from IOI for each of the Operational Centres has been stressed. This problem is being addressed through more system-wide projects, through securing of donations earmarked for this purpose and through increased cooperation with other global organizations and more use of synergism and strategic longer term planning. The IOI is presently in this process.

The problems of funding are particularly noticeable for some of the Centres, e.g. Black Sea in Romania, China and Senegal. A more clearly connected network and stronger association with IOI Headquarters could also help address this problem.

The Executive Director presented some suggestions with respect to the future development of IOI to the Governing Board meeting in November 1998, which were basically endorsed as a basis for further step-wise action. The Governing Board took into account the experiences from the past six years which were elucidated by

the previous Executive Director, Dr. Krishan Saigal.

## Section II

### Overall analysis of results of the three year programme including lessons learnt

This section presents first the overall analysis with reference to the expected outputs/results, followed by a discussion of experiences and lessons learnt during the period.

#### Section II.1

International Ocean Institute  
Programme Support 1996-1999 (from CIDA)

##### Expected

An increase in the number of operational centres to cover a broader range of geographic/maritime areas including Eastern Europe/the Black Sea.

##### Achieved

Eight Centres existed at the start of the period, which is now extended to ten operational centres, with a new one in Romania for the Black Sea region and a new one in South Africa, Cape Town, for the Southern Atlantic and part of Southern Ocean regions; in addition, two new affiliates are being established in Ukraine and Russia (Moscow).

##### Expected

IOI training capacity improved; increase in number of courses and trainees.

##### Achieved

The training capacity has increased and improved as regards coverage of subjects, disciplines, regions, number and diversity of teachers; social and cultural aspects are covered; the number of courses which can be given annually has increased from about 10 to about 20; the number of courses actually given, varies between years, but has generally increased from 8-12 in previous period to 14-18 in the present period; with the number of participants being from 300-350 in all, to 500-550; the training modes have been diversified, so as to include leadership seminars, workshops, public awareness raising and training, and short on-the-job training courses.

##### Expected

Increase in the number of trainers available to run IOI courses at the national/regional level.

### Achieved

The number of trainers able to give or lecture in IOI courses has increased absolutely but perhaps not relative to the number and diversification of the training activities; through provision of training to NGO communities the increase in teaching capacity is gradually accomplished, in particular at national/local level.

### Expected

Exposure of mid-career civil servants to broad perspectives of issues related to ocean management, including linkages between disciplines, departments, ocean spaces and uses, biological diversity and development, productivity of fragile ecosystems and climate change, appropriate policies, plans and programmes and sustainable development.

### Achieved

The range of issues and subject areas IOI is covering in its training activities has about doubled, with a wider range of regions and activities also included; the trainees are also exposed to ground-level work, e.g. through participation in coastal community projects; the range of civil servants has also increased in that those associated with national, local and community authorities and NGO's are included. The module presented at the World Maritime University exposes the participating students, who mostly are mid-career civil servants, to the linkages between user-sectors, ocean uses and environmental problems and conflicts of interests.

Generally the holistic approach is stressed, social and cultural aspects are included in the training actions, dialogues are fostered. Through the inclusion of local NGO's, authorities and communities, and the public awareness creating actions, a much closer linkage to grassroots problems, practical needs and applications has been established. The perspectives and legal framework provided by UNCLOS and UNCED when taken together are also more emphasized now than before.

Sustainable development, needs of poor peoples have been included; corporation has been extended with the Conventions of UNCED in biological diversity and on climate change. The vulnerability of some coastal areas and oceanic islands and the ocean shelf to potential climate changes is being illustrated and evaluated. Sensitive habitats as coral reefs, mangroves are considered specifically. Coordination is sought with UN, UNEP, IOC and others in their capacity-building activities and planning.

### Expected

Dissemination of existing scientific information and new research results to decision makers.

### Achieved

The Pacem in Maribus Conferences in 1996, 1997 and 1998 have all emphasized the interpretation of scientific results and ocean observations and their dissemination to authorities, governments, decision makers, and various users of the marine environment, including the private sector. One aim is to generate an increased awareness about ocean issues and the need for adequate ocean governance. The 1998 International Year of the Ocean has been used, as well as the transition to a new Millennium, to generate an increased momentum. Several regional hearings have been organized by IOI, covering the Indian Ocean, the East and South East Asian Seas and the Pacific Ocean. These hearings have brought out needs of peoples, problems, conflicting uses; impacts of present trends, including privatization and globalization processes; the interactions across several sectors and their inter-dependence; the need for legal instruments and guidelines for their implementation; and the need for public awareness and participation in dealing with ocean and coastal issues.

The hearings have been published in separate reports (a copy of the one from India is provided), and have also provided inputs to the work of the Independent World Commission on the Ocean, which report was presented in September 1998.

Regional assessments have been up-dated for several regions of UNEP Regional Seas, in cooperation with UNEP.

The role of the United Nations system has been analyzed, resulting in proposals for restructuring and establishment of a dedicated global mechanism as part of the UN General Assembly to address the ocean issues at regular intervals. This has been communicated to governments and organizations. The Ocean Yearbook provides for an up-dated annual source of information on ocean governance, with a wide circulation.

### Expected

Inter-regional communication and information to enhance mutual training about shared problems.

### Achieved

The inter-regional communication and exchange of information is catered for through preparation of joint proposals, joint projects and reporting; preparation of newsletters, exchange of courses; annual or biannual meetings of all Centre directors, and exchange of students; and the annual Pacem in Maribus Conference. A "shared vision" and a mission statement for IOI have been agreed (Annex 1). A stronger linkage between the Centres is gradually put in place, so as to properly utilize synergism, the virtual centre concept, the networking and partnership.

### Expected

Innovative managerial concepts and approaches applied and brought

to the attention of decision makers.

### Achieved

The need for management and decision making in conditions of uncertainty is emphasized in the training and policy communications. The precautionary principle is applied. Risk assessment methods and environmental impact assessment methods are included and are also researched. Training modules are being developed further in these subjects. Integrated coastal management, community level work, with decentralized decision making and monitoring at the level of action is discussed, together with local ownership and accountability, and application of the co-management approach.

Demonstration sites are used to illustrate these concepts and related implications.

### Expected

Fully integrated financial management and communications systems among the operational Centres and the IOI Headquarters.

### Achieved

Communications through internet is fully operational, and websites are established, including an IOInst.org one. An integrated programme and budget is prepared annually, with an integrated financial reporting system and central external auditing of all IOI funds.

The fund-raising is continuously diversified, including approaches to the private sector. An endowment fund in the form of an Ocean Science and Research Foundation has been established in Zurich, Switzerland. Basic seed funding for the existing Operational Centres is being secured for several years.

## Section II.2

### Experiences and lessons learnt

These are grouped as far as feasible according to the programme components, namely: research and policy development; training, capacity building, public awareness; operational centre developments; management and funding; linkages, policy, inter-regional exchanges, community oriented work. There are of course some overlaps.

#### 1. Research and policy development

Extensive policy-oriented research has been carried out addressing socio-economical and cultural aspects of sustainable development in relation to ocean governance. This has identified gaps in the techno-economic basis for sustainable development, a lack of socially, culturally and politically acceptable solutions to many problems, and has proposed some remedies. One



is the need to take into account cultural aspects and diversity in needs, in pursuing sustainable development, and ensuring public participation. This has been demonstrated also in practice through the community level work in Africa, India and the Pacific.

The studies have also elaborated the cultural and economical importance of the ocean for the changing social conditions on Earth and for the global community. The potential for using the EEZ and the Common Heritage concepts of the UNCLOS to strive for and to achieve greater equity and more solidarity has been exemplified.

The results of these studies are published in monographs and in journals.

The Pacem in Maribus Conferences generate concise statements and declarations, based on an analysis, which bring out the considered policy and governance needs and issues, bringing them to the attention of governments, policy and decision makers, organizations and the private sector.

The principles identified in the Law of the Sea and UNCED Agenda 21 are taken together, providing a basis for the actions:

- the Common Heritage and the EEZ with the Chapter 17 of Agenda 21; equity within and among nations and between generations; cooperation as a basis for social, economical and sustainable development and a comprehensive security concept, exemplified by the necessity of cooperation in addressing the ocean issues; peaceful settlement of disputes, exemplified by agreements for implementation and use of existing international agreements and related organizations.

The major lesson is that without political will actions will not be taken.

The composite results have provided the arguments for the creation of a universal highlevel acknowledged forum where ocean affairs, marine policy, implementation of existing agreements can be discussed and reviewed at regular intervals. The IOI founder and honorary chair has proposed to the General Assembly of the United Nations the creation of a Committee of the Whole for this purpose, using the 1998 International Year of the Ocean to launch the appeal. This is now being pursued.

The collection, evaluation and dissemination of information in a proactive way as regards ocean and coastal area matters is very important to achieve the goal, inter alia of increasing public awareness, of generating community level participation, and a global network as the IOI can play an important role in this respect.

The transmission of scientific information and research results to users is an important action. This has to be done in a

proactive way, providing interpretation and demonstration on how to use the results, and why they are important. The IOI is doing this through the community work, demonstration sites, and through practical training activities. These also lead to generation of local enterprises, e.g. seaweed mariculture, spirulina cultures, improved fish processing practices.

Several IOI Operational Centres are actively providing advisory services to communities, e.g. South Africa, Senegal, Costa Rica, Fiji, and India. All these actions contribute to increasing the abilities of societies to use and benefit from recent marine research results. At the same time the actions help remedy poverty, environmental degradation and create community level self-reliance and -sufficiency. The human resource development in these actions is mainly directed at women.

The IOI has thus responded both theoretically and practically to the UNCLOS call for a persistent training and mutual assistance programme, and has recently related these actions to the call from UNCED 92 to help efforts of nations to achieve sustainable development through a more precautionary use of the marine environment and its resources.

## 2. Training, capacity building, public awareness creation

The IOI training courses include basic information about the marine environment, management, integration, role of authorities, legal instruments and related guidelines. The overall framework is UNCLOS and UNCED 92 results. Normally at least 50% of participants are women. The training appears to have more impact in less developed than in developed countries.

Short awareness creating courses as well as special ones are needed, as are job-training and up-dating courses. Some of the courses are too long for the audience they aim at, and may be too diverse or over-ambitious.

The public awareness creation at community level through workshops with participation of one individual or sometimes several villages has proven to be very attractive and generating interest and impact. A wide variety of needs must be covered. It has been found that decentralized management responsibility for coastal resources at village (local) level can be useful. Collaboration between government authorities, NGO's and media on marine awareness issues and curriculum development is most constructive and is to be pursued. A broad-based approach is required, not only focusing on ecology and scientific aspects but including as many aspects of life-supporting needs and basics as possible, and adjusted to the local conditions. There appears to be agreements at local levels of the need for proper care of the environment, but in order to achieve such care a balanced approach of governance is required ensuring equity and solidarity between users, and a local involvement.

Very often it is the remote management and decision making with disregard of existing communities and their needs, and lack of

evaluation of impacts of coastal developments, that create very considerable and long-term problems. Governments need to become more involved and more sensitive to the local concerns and needs. Impact assessments and evaluations of socio-economic consequences and cultural attitudes need to be done before developments are authorized. In these processes there is also a need to have advice and involvement of an outside and neutral expertise. Here the IOI network can play an important role.

With respect to the training courses, it is necessary to maintain a high standard, regular evaluations, updating and revisions, with an engaged, motivated and approachable teaching staff (lecturers). Award credits from the host institutions (universities) would be very useful. Much competence exists in developing countries which must be used in the training activities.

### 3. Operational Centre developments

Before establishing an IOI Operational Centre there must be in-depth consultations with the potential host (partner) institution to determine its capacity for the work and support, and to determine the required capacity of the Centre to fulfill its mission. The congruence between the mission of IOI and the host institution must be ascertained and the mutual benefits identified. An assessment of the requirements for capacity building and training in the region to be concerned with the potential IOI Centre is also desirable. There is a need to have close association between the Centre and the host institution with regular consultations, while maintaining the identity of the Centre as an IOI part.

The Centre autonomy is essential in terms of operations while it also must maintain (develop) strong linkages with the other IOI Centres, and cohesiveness with the IOI. It must be made clear to host institutions that the IOI is not a funding agency.

The IOI is now using the concept of affiliate status to expand the network and partnership, while avoiding to create further financial expectations or obligations. Through the affiliate status the partnership can be expanded and used so that the institution can benefit from the IOI material, advice, representation, moral and policy support.

The Centres and affiliates should develop and maintain regular contacts, and cooperation as appropriate, with local and regional NGOs and international organizations, in particular of the United Nations.

The IOI Headquarters should do likewise and should be actively involved with the Centres in their efforts. Synergism and joint projects must be further stimulated.

### 4. Management and funding

The management structure of the IOI is light and without

bureaucracy. The Planning Council and the Governing Board constitute, together with the IOI Headquarters, a unifying and synergism generating force. While striving for a strong network it is essential to have a decentralized management system with a light Headquarters. Synergism is obtained through use of common methods, a common mission and regular exchanges. The IOI has developed a shared vision and strategy for its long-term strengthening and its relationship to the partner institutions. The IOI needs to ensure at least some central seed funding for each of the Operational Centres as a means of maintaining cohesiveness and motivation.

Cooperation regionally and globally has been expanded and is proving to be very useful and rewarding, including with other regional and local NGO's.

The complexity and inter-sectoriality of marine affairs and problems requires a sustained programme with regular follow-up of activities and training in order to achieve long-term, lasting results. Participants must be involved in the planning from the start and social and economical and cultural conditions and attitudes must be taken into account in the programme and actions. A local driving is required in local work.

Regular review meetings involving all Centre Directors are required to ensure dynamic and proactive adjustments to changing conditions and new needs.

The IOI activities cover a wide range and have different degrees of funding problems, a Conference being most difficult, while a fellowship or a humanity-community based project may be relatively much easier to fund. There are also regional differences in that funding agencies and donors have politically related preferences. This emphasizes the need for solidarity in the network and cohesiveness. The IOI has established a reasonable upstream funding strategy and diversified funding base. Both needs further strengthening and implementation.

The IOI needs to 'sell' itself more vigorously, and prepare regular integrated, comprehensive and attractive reports on its programme and achievements.

The IOI has sought cooperation with the private sector in ocean affairs, including as regards the industry associated with communications, insurance, tourism, fisheries, offshore oil and gas, mariculture, food production and processing. The long-term effects of this are not yet clear, but the signs are positive.

The cooperation with large intergovernmental institutions as UNDP, World Bank and GEF is being pursued, but is very time consuming and demanding, without necessarily yielding desired results.

5. Linkages, policy, inter-regional exchanges, community oriented work

The IOI is the only global international NGO dealing comprehensively with the ocean. The IOI alumni network spans almost every developing and many developed countries. The IOI system has on tap considerable intellectual resources and competence, covering the fields of ocean and maritime technology, fisheries, mariculture, food processing, ocean law, training and distance learning systems, resources economics, community level work and training, etc. These, if synergised, could lead to an increasing impact of IOI. The IOI is now a networking system and a virtual Centre, based on partnerships, as well as an international organization, with its main strength being the Operational Centres.

The IOI needs to continue to diversify and expand not only its funding base, but also its activities beyond the training of mid-level civil servants, training and provision of advice to other environmental NGOs, in particular local ones. There is also a need to maintain coherent and comprehensive data and information bases on its activities, and about sources of funding, technology and advice. The IOI covers in its training, linkages between relevant sectors and users so as to present a holistic approach in addressing marine environmental problems, including social and cultural aspects. The training also aims at meeting the need for partnership and cooperation with other existing bodies, local and national authorities at various levels. The aim is to create a balanced indigenous capacity to address marine matters over a wide range.

The Law of the Sea and its implementation is the main frame for the IOI mission, now taken together with the UNCED 92 results. The linkages between the processes of UNCLOS and UNCED 92 are recognized and emphasized in strategy and actions.

The IOI has obtained a new dimension through the inclusion of coastal zone activities, which adds removal of poverty, job creation, support towards achieving community self reliance and sustainable development, coastal resources development and management to the earlier role of IOI.

Through IOI a global network for environmental education and information dissemination has been created, together with the use of modern communication and websites to serve the network. Through this network public awareness about the role of the marine environment, its resources and the need for adequate knowledge about these, their protection and management, has been created and increased in the Pacific and Indian Oceans, in the Caribbean and Central Atlantic. Needs of environmental information for local NGOs and for disadvantaged communities have been identified and assessed in several localities. A dominant portion of participants in community level work are women. They are often fully aware of the deterioration of their environment and the need for action to reverse the situation and for coordinated policies; however, they lack influence and the

resources needed to take the necessary initiatives and actions.

There is a need for IOI to use more languages and facilitate translation into local/regional languages of relevant material.

The governing bodies of the IOI are reviewing the experiences and lessons, so as to ensure timely revisions and adjustments.

### Section II.3: Annexes and attachments

Annex 1: International Ocean Institute 'Mission Statement and Shared Vision presentation;

Annex 2: List of participants in courses of IOI Canada, Senegal and South Africa in 1998;

#### Attachments

Attachment 1: Minutes of thirty-seventh Meeting of the Governing Board of the IOI, Halifax, Canada, November 1998;

Attachment 2: Minutes of the Ninth Meeting of the Planning Council of the IOI, Halifax, Canada, November 1998;

Attachment 3: Final Project Performance Evaluation Report, UNDP/GEF/UNOPS Project on Support for Regional Oceans Training Programme, UNDP and IOI, March 1998;

Attachment 4: Global Network for Environmental Education - Enlightenment, a project supported by the Japan Fund for Global Environment, Final report, May 1998;

Attachment 5: Voices for the Oceans: a report to the Independent World Commission on the Oceans, The International Ocean Institute, India; Operational Centre in Madras, India 1996;

Attachment 6: The United Nations New Horizons, Perspectives on Restructuring the United Nations, International Ocean Institute, Malta Operational Centre, Foundation for International Studies, University of Malta, July 1997;

Attachment 7: Common Heritage and the 21st Century, Pacem in Maribus XXV, International Ocean Institute, Foundation for International Studies and the Government of Malta, November 1998;

Attachment 8: GTZ-IOI India Ecovillages Project Status Report, IOI India, September 1998;

Attachment 9: Women in Coastal Resource Management: Project report, Women in Fisheries Network, Suva, Fiji January 1998.

N.B. These are not provided with what is sent to Sida (Dr. Granlund); if of interest the reports can be sent on request.

Financial overview for IOI Headquarters  
as of April/May 1999

Income

	USD
Transfer from 1998	69,000
CIDA CAD 70,000	47,000 (rate 1.48)
Germany GTZ DEM 55,000	30,400 (rate 1.810)
Donor	200,000
The Netherlands NLG 70,800	35,000 (rate 2.02)
	-----
	<b>381,400</b>

Expenditures

Transfer to Centres	122,360
IOI Headquarters for running costs, salaries, and partly the meeting	60,560
	-----
	<b>182,920</b>





**INSTITUTUL ROMAN DE CERCETARI MARINE**  
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April 7, 1999

**ACTIVITY REPORT FOR 1999**  
**of the IOI-Black Sea Operational Centre,**  
**Constantza/Romania**

The IOI-Black Sea Operational Centre (BSOC) is hosted by the Romanian Marine Research Institute as the leading marine research and fishery institution in Romania, as well as national co-ordinator and focal point with respect to international research tasks and responsibilities in the field of marine sciences.

BSOC has been included in the Black Sea University Network (BSUN) of the Black Sea University Foundation (BSUF).

According to the IOI-BSOC Workplan for 1999 the leadership seminar "Using Today's Scientific Knowledge for the Black Sea Area's Development Tomorrow", to be held in Constantza/Romania between September 21-23, 1999, is under preparation together with IOI Executive Director Dr. G. Kullenberg. Seed money to enable this meeting are expected in Constantza during the first half of this year. Logistical needs are explored in the limits of available funds. Invited speakers from the region and from abroad should provide written contributions addressing the issue how we can help generate a sustainable Black Sea development. A practical result of the seminar should be an IOI-Black Sea publication. The seminar should also offer the opportunity to welcome affiliations to IOI-BSOC (Ukraine, Turkey?), to encourage further co-operations with other regional organizations (e.g. IOC-Black Sea Regional Centre), and to strengthen contacts with Black Sea related environmental NGOs. Participants will be also briefed on the Black Sea University Foundation and the Black Sea University Network (cf. Letters from the BSUN No.3/October 1998 and No.4/January 1999).

As to the preparations for the International Conference "Pacem in maribus" XXVII, organized by IOI-South Pacific, in Suva/Fiji between November 8-12, 1999, Dr. Alexandru S. Bologa will contribute to Panel 2:

Marine Biodiversity and Bioprospecting, with a lecture on trends in the Black Sea biodiversity, under the motto "The beasts of this world deserved a more accomplished human species" (N. Daramus, 1998).

For a better understanding of the complex environmental problems faced by the Black Sea at present and of the various ongoing programmes, projects and other co-operative efforts in this region two contributions on "Present changes in the Black Sea ecosystem" and "Regional research and management developments in the Black Sea", respectively, have been submitted for publication by the undersigned to "Ocean Yearbook" No. 15.

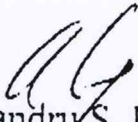
The requested informations/news from IOI-BSOC have been sent to the editor of "Across the Oceans".

Two applications for the IOI Training Programme "The United Nations Convention on the Law of the Sea, its Implementation and Agenda 21" have been forwarded to IOI-Canada Operational Centre from the Romanian Marine Research Institute Constantza.

A close contact was maintained with the International Commission for the Scientific Exploration of the Mediterranean Sea (CIESM), web site <http://www.ciesm.org>, during the meeting of its Advisory Committee in Monaco on March 15, 1999, by advertising IOI-BSOC brochure and related activities to the members of the committee.

The IOI-BSOC was also presented during the General Assembly of the Romanian Naval League and at the meeting for the reorganisation of its "Romanian Commission for Maritime and Fluvial History" in Constantza on March 23, 1999 (to be communicated to IUHPS/DIIS Newsletter "History of Oceanography").

The creation of the International Educational Scientific Centre in Moscow/Russian Federation, addressing physical problems of Black Sea ecology, is in progress (to be confirmed during the leadership seminar in Constantza '99).



Dr. Alexandru S. Bologa  
Director IOI-BSOC

**International  
Ocean Institute**



**Headquarters**

# **Report of the International Ocean Institute (IOI), for 1999-2000**

**Prepared by the Executive Director**

**Headquarters, September 2000**

List of Contents

<b>Foreword:</b> International Ocean Institute	2
1. Some Highlights of the reporting period	3-7
2. Education and Training	7-18
3. Development	18-26
4. Ocean Governance	26-30
5. Research and Science Application	30-36
6. Advisory Services	36-38
7. Cooperation	38-42
8. The Organisation	42-46

List of Annexes

- Annex 1A:** Mission Statement
- Annex 1B:** IOI Profile
- Annex 2:** Fiji Declaration
- Annex 3:** IOI Statement at UNICPOLOS I
- Annex 4:** List of Members of the Governing Board, Planning Council and Executive Committee
- Annex 5:** List of Directors of IOI Operational Centres
- Annex 6:** Audit Report and financial statement for 1999
- Annex 7:** Overview budget (expenses) for 1999 and 2000 (estimates)

Annual  
Report of IOI for 1999-2000  
prepared by Executive Director

This report essentially covers the activities of the International Ocean Institute from the period June 1999 to June 2000. It is thus not strictly an annual report. For practical reasons the time period is adjusted due to schedules of IOI meetings and related reporting, funding and auditing procedures and planning purposes. This report is the second of its kind for IOI and has been prepared by the Executive Director in response to the decision of the Governing Board in November 1998. The presentation is based on material made available from the Operational Centres at the IOI meetings in November 1999 and subsequently as well as the activities of Headquarters.

The structure of the report is based on the IOI Mission statement (Annex 1A).

**Foreword: International Ocean Institute**

The International Ocean Institute (IOI) was officially established at the University of Malta in 1972. The founder was Professor Elisabeth Mann Borgese, a globally well known person in the areas of environment and the oceans. The origin of IOI goes back to a collaborative effort between the Center for the Study of Democratic Institutions (Santa Barbara, California, USA) and the Government of Malta, following Malta's initiative of 1967, when Ambassador Arvid Pardo introduced in the General Assembly of the United Nations the concept that parts of the ocean are the Common Heritage of Mankind. This collaborative effort culminated in the first Pacem in Maribus Conference in 1970 in Malta to explore the philosophical and ideological parameters of the concept of the Common Heritage of Mankind as well as its legal and economic content and institutional implications. It was felt, at that time, that, more than a Conference, the issues needed sustained research and progressive development, which could best be achieved by an international ocean institute. The IOI was accordingly established, with the assistance of the United Nations Development Programme.

The task of the IOI, as defined in its Statutes, is, under the guidance of the Principle of the Common Heritage, to:

promote education, training and research, so as to enhance the peaceful uses of ocean space and its resources, their management and regulation as well as the protection and conservation of the marine environment.

The IOI is an independent, nongovernmental, international, nonprofit organisation, incorporated in the Netherlands, with headquarters in Malta. It has operational centres in Malta (University of Malta), Canada (Dalhousie University), China (State Oceanic Administration), Costa Rica (University Nacional), Fiji (University of the South Pacific), India (Indian Institute of Technology, Madras), Japan (Yokohama City University), Romania

(National Institute for Marine Research and Development "Grigore Antipa"), Senegal (Centre de Recherches Oceanographiques), South Africa (University of the Western Cape) and Kenya (Kenya Marine and Fisheries Research Institute). There are also two Affiliate Centres, at Ukraine (Institute of Biology of the Southern Seas - IBSS) and Russia (Russian Federal Research Institute of Fisheries and Oceanography). The Headquarters in Malta is separate from any of the Operational Centres, and established through a Headquarters agreement with the Government of Malta.

Through these centres, the International Ocean Institute is extending the results of its research programmes and Pacem in Maribus Conferences to the general public, policy makers, civil servants, other nongovernmental organisations and representatives of the private sector. This activity is largely, but not exclusively, aimed at organisations and institutions and persons in developing countries. The main objective of the symposia, conferences, and training programmes conducted by the centres is to focus attention on the oceanic environment with special reference to land-sea-air interactions, the problems of small islands and the need for sustainability of the ocean, especially of enclosed and semi-enclosed seas like the Mediterranean Sea, the Baltic, the Black Sea, the Sea of Japan, the Caribbean, the Red Sea, the Persian Gulf, and the Arctic Basin.

The approach of IOI is to bring together the various specialists involved in the oceans -- in science, technology, economics, law, management -- to help them transcend their specialisations.

#### 1. Some Highlights of the reporting period

The Meeting of the Executive Committee and Operational Centre Directors, held at the University of Malta 1-6 June 1999, reviewed the programme implementation since the IOI governing body meetings and the XXVI Pacem in Maribus Conference held at IOI Canada 26-28 November 1998 and 29 November-3 December 1998, respectively. This meeting marked a new development for IOI in that it brought together all Operational Centre Directors and the representatives of the Board at mid-term between Governing Body meetings, and in that it was made possible through the programmatic support received from the Ocean Science and Research Foundation, based in Zurich.

The meeting spent one day brain-storming on the further strengthening and development of the IOI, in accordance with the related decision of the Board (November 1998). Out of this came several suggestions, including the IOI Virtual University, Youth Programme, Women and the Sea Programme. These were all endorsed by the Planning Council and the Board in November 1999. The one day workshop also identified several specific actions to increase the visibility of IOI. Through this meeting we also had the opportunity to reflect and assess the development of IOI. This was seen to have occurred in a step-wise fashion.

The formal creation of IOI in 1972 followed the first Pacem in Maribus Conference held in 1970. In the 1970's and early 1980's

the IOI primary task continued as a think tank for various ideas regarding the development of the Law of the Sea. The participants were individuals who were willing to cooperate and contribute by individual motivation in a partnership which essentially worked like a family. One early aim was also the raising of awareness about the participation in the Law of the Sea development process, besides the production and testing of ideas. From the start there was always ensured the linkage between the non-governmental and inter-governmental mechanisms. The base was in Malta and there was a close linkage to the Government of Malta.

The next stage came with the development and establishment of the Training programme for the Law of the Sea, and the associated connection with Canada and the Dalhousie University. This action of training was also a fund-raiser, and Canada contributed much through CIDA.

The next transition occurred through the preparatory work for UNCED 92 and the related first UNEP-GEF project in support of a wider training programme including the development of a network of training centres. This was the UNDP/GEF/UNOPS Project Support for Regional Oceans Training Programme, approved in 1993 for a 4-5 year period. The final evaluation report was published in March 1998. This project led to the establishment of 4 regional Operational Centres namely IOI Costa Rica, IOI India, IOI Senegal and IOI South Pacific. However, the process triggered the development also of the Operational Centres in China, Japan, Romania (Black Sea), and Southern Africa up to the end of 1997. In addition there already were Centres in Canada and Malta. Thus all the major ocean regions were covered by the end of 1997.

This project made it possible to create a network and an expansion of the Organisation, and expand the activities to include local, national - regional and global levels. This development also meant a transition to a professional society with professionals participating driven by professionalism and also tied through their posts to the Host institutions of the Operational Centres. This linkage ensures a close relation to national institutions.

Now the back-bone of the IOI is the Operational Centres. The relation between them and the IOI Headquarters is flexible and pragmatic and should so remain. However, the recent developments have also shown the need for a strong and functional Headquarters, being the international face of the IOI. However, the basic approach is the same as in the early days: what matters is the common, shared interests, the cooperation and the willingness to be a partner in a network. We are not moving away from the earlier parts, and the IOI should still fulfil its role as a think-tank; this is needed also for the training and the community-based work. Instead of having only individuals we now have both individuals and institutions in the partnership network. The partnership is of course meant to be a stimulation, through exchanges of ideas, experiences, acknowledgements and solidarity, including help. We should not be fearful of creating

new Operational Centres. This should not be a competition but a stimulation.

Through this development the IOI can now also provide a training programme which is dedicated to various issues and needs, without necessarily having one formal common element. Our common framework is now strong enough to withstand a disintegration, or at least it should be sufficiently strong.

The Pacem in Maribus Conference in Halifax 1998 marked the transition to the next phase of the IOI development, in addressing the crisis of knowledge and the opportunities associated with the new information system. One challenge we need to address in this period is how to transform a network of institutions into a comprehensive and active mechanism, while maintaining flexibility and autonomy.

The consolidation of the IOI system of Operational Centres is exemplified through the trend of having more system-wide projects. The UNEP GPA News Forum is one example. Another is the project on risk-management as part of integrated coastal area management. This involves all IOI Centres, under leadership of IOI-Canada. It is a partnership project with the Swiss Reinsurance Company, cost-sharing on an equal basis with IOI, and now also involving the Bermuda Biological Station for Research. The response to this project is most encouraging from research institutions, private industry and the IOI Operational Centres.

The IOI Virtual University initiative is also system-wide, involving closely the Host-institutions. The UNU, WMU, UN Peace University and UNESCO through the IOC have agreed to co-sponsor the Virtual University. The Nippon Foundation has expressed interest in being a partner. The response of Host institutions so far is very encouraging.

Through a private donation of 1 million Swiss Francs to the Ocean Science and Research Foundation, earmarked for the purpose, an IOI "Women and the Sea" programme has also been established. This will in this phase run for 3 years from 2000, and involve about 7 of the Operational Centres. The programme is dedicated to enhance the capacity and participation of women in poor developing countries in ocean and coastal affairs.

Besides renewal of MOU's with Host institutions for existing Operational Centres, one new Operational Centre has been created hosted by the Kenya Marine and Fisheries Research Institute in Mombasa with the signing of an MOU in Spring 1999. Two Affiliate Centres have also been established, in Ukraine (Sevastopol) and in Russia (Moscow).

An MOU on co-operation with the Secretariat for the Convention on Biological Diversity, of UNEP, has been signed.

Several local NGO's are associated with IOI projects, e.g. in the Eco-Villages project in India; the community project in IOI-South Pacific involving the Women in Fisheries Network, and the



mariculture/sustainable livelihoods project in South Africa and Namibia.

At the local and national level the introduction of the community-based co-management process in coastal areas which includes social, economical, environmental and natural science aspects for improving livelihoods and survival, appears to be an innovative approach. This leads to institutional development in the coastal communities and is enhancing the tactics and effects of coastal management. The decentralised capacity and confidence building furthermore leads to a decentralised decision making process, which is an innovative approach in most developing countries.

The Pacem in Maribus Conference serves as a focus for presenting and discussing issues related to ocean governance at global and regional level. This is well exemplified by the Conference in Fiji 1999, where the regional co-operation and revitalisation of the UNEP Regional Seas Programme was discussed, as were the development of the International Seabed Authority, the biological diversity and the fisheries problems. The Conference served as an integrator, increasing public awareness and participation, and an institution building effort.

The advisory role of IOI is growing gradually, shown, as examples, by the advice sought from IOI by the Nippon Foundation as to its further actions regarding ocean governance; the consultation with the Fiji Government in December 1999; the work in South Africa, Namibia and Angola with respect to mariculture development; the national actions in China through the linkage between IOI China and the State Oceanic Administration of China. It is not possible as yet to say anything about employment and income, only to reflect that the coastal community work certainly drives in the direction of increasing employment and income.

The impact of the IOI much depends upon the strength of the IOI to work as a coherent and comprehensive network. The coherency still leaves much to be desired. The Operational Centres are autonomous and are very dependent upon the goodwill, support and policy of the Host institutions. There is clear evidence of a positive trend as regards the interest and support of the Host institutions. There are also positive signs as regards the coherency and the willingness to function as a strong network and a system, that is as an organisation, evident e.g. through the system-wide projects. However, this aspect must be further pursued. This is being addressed by the Governing Board and the Planning Council.

The financial support has been much strengthened through the Ocean Science and Research Foundation (OSRF), and the private donation giving support to the Operational Centres in the form of seed money. This helps generate coherency. The OSRF will be further strengthened in 2000.

The corporate profile is also being further developed through the increasing coherency and the system-wide projects going beyond

training, the IOI presently being in its third development phase.

The efforts in the direction of integrating sustainable development and regional security also represent an innovation, initially rather controversial. However, it will be pursued through policy-oriented studies and seminars. An overall conceptual framework is being developed through a project on "The Economics of Peace" through Professor E. Mann Borgese.

The adjustment of the IOI Programme to respond to changing conditions is seen in more focus on coastal work, community level work, distance learning, networking, and IOI system-wide projects. The actions address global, regional and national-local concerns. Co-operation at the global level is focussed on the United Nations system, and at the national-local level through the Operational Centres with their Host institutions and other local NGO mechanisms. The funding is being diversified and attempts are made to delineate the pure contributions of IOI, of the combination of Host institution and IOI Operational Centre, and in kind.

The performance evaluation is mainly through internal processes. The evaluation of individual Operational Centres is essentially done through their Host institution. The Headquarters and the financial management is audited annually.

At the end of 1999 the IOI had the sad duty to remember and honour the initiator of modern Ocean Governance and one of the leading personalities stimulating the creation and development of the IOI, Dr. Arvid Pardo who passed away in the Fall of 1999. The first IOI Arvid Pardo memorial lecture was given at the PIM XXVII Conference very appropriately by the President of Malta, H.E. Guido de Marco, the Arvid Pardo Award was announced, and the Board also decided that IOI would prepare a book honouring the memory of Arvid Pardo.

## 2. Education and Training

Training and education are basic activities of the IOI. These actions have developed over the decades to include not only regular courses with required participation, spanning over days to months, but also distance learning courses, post-graduate education, internships, upgrading of skills, community-based training and awareness creation with active participation, information dissemination, on-the-job training. In parallel, the subject range covered by the training has expanded, so that it presently includes ocean governance at global level with education about UNCLOS, UNCED and the related processes; regional perspectives and national-local concerns. The subjects are also specific for instance as regards mariculture or artisanal fisheries developments, marine pollution and coastal zone conditions. The community-based training done through the Eco-villages or Sustainable Livelihoods approaches is always including all relevant sectors so as to be of use in creating self sustainability and co-management actions.

During 1999 formal training courses with attendance in class were held at IOI-Canada, China, Costa Rica, Senegal, Southern Africa and South Pacific.

#### IOI Black Sea, Romania

Cooperation is sought with other regional bodies in various parts to implement mutually useful training programmes. Jointly between the MEDCOAST and the IOI Black Sea Operational Centre the "Fifth International Training Programme in Beach Management in the Mediterranean and the Black Sea" was implemented, June-July 2000, in Mamaia, Romania. The training course was attended by 20 participants from 7 countries in the Black Sea - Mediterranean Sea regions. This action was sponsored also by WHO and Pew Fellows Programme in Marine Conservation. The previous actions of this programme were carried out in Erice, Italy; in Gozo, Malta; Varna, Bulgaria; Valletta, Malta; and now Romania. MEDCOAST is based in Middle East Technical University, Ankara, Turkey. The training activity covered: beach dynamics, coastal engineering aspects, artificial beaches and beach nourishment, environmental aspects, water quality questions, litter management, coastal tourism, beach management guidelines.

#### IOI Canada

The largest training programme for IOI Canada this year was the ten week summer training course "Law of the Sea, Agenda 21 and Its Implementation" run 31 May - 6 August 1999. Dr. S. Jagota had been the director for the last 14 years. This year the director was Dr. Noel Brown, formerly of UNEP's North American offices in New York. Dr. Brown proved to be an outstanding course director, and has committed to the task for next year and has become involved in selecting participants and refining the curriculum for the course in 2000.

As in previous years, the course focused on: The United Nations Convention on the Law of the Sea, Its Implementation and Agenda 21. The relevant themes were organised in eight modular sections, together with a special module on Risk Assessment and Disaster Mitigation, and were elaborated over a ten-week period. The eighteen participants came from seventeen countries and included mid-level professionals, as well as graduate students. At one level or another all were engaged in some aspects of ocean management in their careers or studies. Some were seeking specific answers to challenges and problems which they were currently facing, while others were attempting to deepen their understanding of the intricacies of the Convention and the ways in which they might better position themselves to facilitate its implementation at the national level. They also seemed eager to better equip themselves to participate in international negotiations in which their countries were engaged and where they were often called upon either to participate in the development of national position papers, or to assist in the preparation of national delegations.

The 1999 course included a revised Living Resources module that based all the lectures on a systems perspective of living resource management. There was also a new module on Risk Management in Coastal Area Management called "Risk Assessment and Disaster Mitigation" that was developed as part of risk management project with Swiss Re.

The course was structured in modules:

- Module 1: Introduction to Campus Facilities. Introduction to Oceanography.
- Module 2: Introduction to the Law of the Sea and its Interaction with the UNCED Process. UN Conventions and Mechanisms. Development Economics. Integrated Maritime Enforcement.
- Module 3: Management of Living Resources.
- Module 4: Management of Non-Living, Nonfuel Mineral Resources.
- Module 5: Integrated Ocean and Coastal Resource Management.
- Module 6: Shipping. Ports and Harbours. Tourism.
- Module 7: Environmental Impact Assessment. Negotiation Exercise.
- Module 8: GEF Workshop. Round Table of Representatives of the Competent International Organisations. Project Cycle Management.
- Module 9: Risk Assessment and Disaster Mitigation.

The objective of this course is to provide a comprehensive understanding of Ocean Governance problems and how to address them in the framework of the Law of the Sea and UNCED 1992, Agenda 21, and the related processes. In achieving this the course highlights the major issues through the modules.

A course report is published by IOI Canada, Dalhousie University, and can be obtained from there. In his conclusions the Course Director notes that "overall the course seems clearly to have reflected the right themes and emphasis in keeping the mission of education and skill development in the areas of ocean protection and management. Given the new levels of global cooperation, new technologies for effective exploitation and environmental protection and new regimes and legal obligations for effective management and protection, the training programme was able to lay a solid scientific foundation on the state of our knowledge about seas and oceans, the perils and risks to which they are currently exposed as well as new opportunities for effective management. The Convention is clearly an evolving document, giving rise to a number of new principles, protocols

and regional arrangements, all designed to enhance the protection of the marine environment and the sustainable use of its resources.

The UNCED process and Agenda 21 have given a new vitality to the Convention, engaging new constituencies of scientists, policy makers and civil society. The growing complexity of the oceans, however, and growing pressures on its various systems calls for new levels of skills and competence and new approaches to its management. For its part the IOI represents one response to these new challenges, and its training programmes open new possibilities for the prospects of sustainability".

IOI Canada is also running annually a Law of the Sea training module at the World Maritime University, the year 1999 in August. The programme was conducted by Dr. S. Jagota and Mr. H. Williamson.

The sustained contacts with Alumni of the training courses are very important. This is achieved through provision of Newsletters, other correspondence and alumni refresher courses.

At the meetings of the Planning Council and Governing Board in November 1998, it was proposed that an Alumni book be prepared. This was endorsed and has been followed up mainly through IOI Canada. Sixteen Alumni of IOI training programmes have been invited to prepare contributions. More than a dozen have accepted the invitation. The book is expected to be published towards the end of 2000.

### IOI China

IN view of the very urgent task of providing harmonised training in integrated coastal zone management for national authorities, IOI China organised an intense training course on Integrated Coastal Zone Management presented in Chinese, 17-26 September 1999. With 23 participants from various ocean management units of the coastal provinces and municipalities and from the State Oceanic Administration of China, the course was run at the National Marine Data Center where IOI China is based. Most of the 23 participants were civil servants engaged in marine management, engineers and technical staff, and scientists working for marine research and development institutions. Lawyers and teachers also attended the course. It was given by 6 invited lecturers.

The course was directed by Professor Yang Jinsen, Deputy Director of the Institute of Marine Development Strategy of SOA, and Dr. Chua Thia-Eng was one of the international lecturers. The course covered: International Marine Law: How to strengthen Integrated Coastal Zone Management; Development and Protection of Coastal and Ocean Resources; Preliminary Analysis of China Marine Policies; Basic Concepts of Integrated Coastal Zone Management; Economic Analysis of Integrated Coastal Zone Management; Management of Marine/Ocean Economics; Legislative Basis and Progress of Marine Area Utilization; a simulation exercise and

a field trip to the coast. The participants presented their selected studies.

The course generated a constructive dialogue between participants, lecturers and the institutions involved, representing several sectors of marine affairs. This will hopefully continue. This dialogue identified the need to strengthen efforts to raise public awareness about and participation in integrated coastal zone management, and emphasised that the integrated coastal zone management efforts also should serve the local economic development, and be adjusted to the local needs and characteristics. The participants also, on the basis of their practical experiences, strongly recommended that an agreed and unified coordination mechanism be established, so as to ensure that efforts are coordinated and harmonised, and not in conflict with each other.

IOI China also participated in providing for a Training Course on Sea Use in China organised by the Marine Management Department of the State Oceanic Administration, 15-20 October 1999 in Beihai, China, with 15 participants from coastal provinces.

The success of this effort led IOI China to organise a second course for Chinese speaking participants from provincial and local government authorities and implementing institutions, in July 2000, entitled: Training course on Marine Environmental protection and Management; It was held in Tianjin at the Institute. Substance covered included: Analysis of China Marine Policies; Background and Procedure for the Amendment of China Marine Environmental Protection Laws; Synopsis and characteristics of the newly revised China Marine Environmental Protection Laws; Present situation and Development of Marine Environmental Protection; marine Ecological Protection, Initiation and Administration of Marine Environmental Park/preserve; Administration of Ocean Dumping and Marine Engineering Protection.

The course attracted 46 participants from all China coastal provinces, and was claimed as a great success. Professor E. Mann Borgese attended the initial session and gave some lectures, and the Executive Director attended the concluding session.

#### IOI Costa Rica

In cooperation with IUCN an intense course entitled "Economic evaluation of Wetlands" was given at Heredia, Costa Rica, 8-12 November 1999, for Central American decision makers. The course was organised and developed in cooperation by IUCN and IOI Costa Rica.

A training workshop on oceanography in the context of Integrated Coastal Zone Management in Costa Rica was also organised by IOI Costa Rica and delivered at the City of Research, University of Costa Rica, November 1999.

## IOI Senegal

The training course on biological diversity and productivity of marine and coastal ecosystems was organised at the "Centre de Recherches Oceanographique" at Dakar-Thiaroye, 2-13 August 1999, 18 students participated from 6 Francophone West African countries. Financial support was provided by The Netherlands and IOI. In all 14 lecturers provided instructions at the course, led by the Director of IOI Senegal, Dr. D. Toure, who is also the Director of the Center de Recherches Oceanographiques.

The objectives of the course were: (i) to draw the attention of the participants to the importance of the biological diversity and productivity for the functioning of the whole coastal ecosystem; (ii) elucidate how to implement an effective management of natural resources in the coastal zone, taking into account biodiversity and productivity concepts; and (iii) to create awareness about the current threats to the biological diversity in coastal and shelf sea areas.

The course was structured into 5 modules:

- (i) concept and theory of biological diversity;
- (ii) productivity of the marine and coastal environments;
- (iii) exploitation of biological diversity;
- (iv) aspects of social and cultural relationships with reference to biological diversity;
- (v) conservation and protection of biological diversity.

The course was officially inaugurated by a high level representative of the Minister of Fisheries and Maritime Transport. This and the course attracted considerable media attention including coverage of the opening by the National Television.

## IOI Southern Africa

A course on Seaweed Mariculture for Community Development was given at IOI-Southern Africa, 24 November - 10 December 1999, for 19 participants from 5 African countries under the leadership of Dr. Bernadette Brown.

The objective of the course was to enable rural development officers and members of coastal communities: (i) to critically evaluate seaweed farming as an option for their area and (ii), to implement a seaweed farming project if the potential exists in their country or area. The course was presented in four modules:

1. Technical and legal aspects of seaweed cultivation;
2. Project design;
3. Participatory Approaches;
4. Business Plan.

The course has been given since 1996, with support from The

Netherlands. This year the IOI Headquarters also provided some support. The course was endorsed from the start by the University of the Western Cape. From 1999 the Seaweed Mariculture Course was advertised in the Prospectives of the University as a part-time course under its Lifelong Learning Programme.

### IOI Pacific Islands

Starting from January 2000 the IOI South Pacific was re-named IOI Pacific Islands. The Training Programme falls under the general aegis of the Marine Studies Programme's MSP/TRAIN, coordinated by Seremaia Tuqiri. A course on ocean resource economics given at the University of South Pacific by the IOI-Pacific Islands has been incorporated into the Marine Studies Programme of the USP, and is thus regularly given there. The following training activities specific to IOI-Pacific Islands have been focusing on the areas of Marine Awareness creation and village-level coral reef monitoring.

1. The Marine Awareness Workshop, and MPA Warden's Training planned for Somosomo, on the Island of Taveuni, have been deferred following the May 1999 national elections in Fiji. Since the election the whole question of land and water tenure in Fiji has been under discussion by the Government, and by the Great Council of Chiefs. The outgoing government had decided that the rights of indigenous Fijians over their coastal waters would be returned to them. This action, however, has not yet taken place. One result is confusion over the issue of Marine Protected Areas in Fiji. Funding for the first part of this activity has been received from the Government of New Zealand, and more is promised.
2. IOI-PI is coordinating a village-level coral reef baseline survey and monitoring training project for the village of Waisomo, on the island of Ono, Kadavu, where the chiefs have agreed to establish a Marine Protected Area. The survey was carried out in cooperation with the Fiji Fisheries Division and the World Wide Fund for Nature, and is being funded by the Oak Foundation.
3. IOI-PI has established a Strategic Alliance with the Turtle Island Resort in the Yasawa Islands, Fiji. This exclusive resort is ranked among the top five eco-resorts in the world, and is developing, with the assistance of the IOI, a programme that will involve the local villages and the resort staff in a reef educational programme for the local communities and the hotel guests. The Turtle Island Resort is providing funds for a full-time biologist on their staff, and for the development of a long-term coral reef monitoring site.
4. A Village Level Pilot Coral Reef Monitoring Project carried out from July 1998 until September 1999, in collaboration



with the Fisheries Division and the Department of Environment and Conservation in Samoa, and funded by the South Pacific Regional Environment Programme (SPREP) is nearing completion. A total of 75 villagers in six villages have been given training in basic reef monitoring, and it is hoped that the monitoring will continue in a sustainable manner.

5. Negotiations have re-opened with the UN Division on Law of the Sea TRAIN-SEA-COAST Coordination Unit for the revitalisation of the IOI-Pacific Islands TRAIN-SEA-COAST Curriculum Development Unit. A lack of funding and an inability to secure the necessary commitment from the University for the development of the CDU has hampered its initiation. With the newly-approved GEF-funded International Waters Project, to be coordinated by SPREP, IOI-Pacific Islands has been requested to consider being party to the parallel TRAIN-SEA-COAST Project also being funded by GEF. The two projects would work in parallel and develop training materials in areas identified by the International Waters Project. A final decision on the IOI involvement is still awaited.
6. An article describing global training programmes, in which the IOI training programmes are presented, has been prepared for inclusion in the new book **Seas at the Millennium**, to be published by Elsevier (South, G.R. Multi-national training programmes in marine environmental science).

#### IOI Malta

In Malta a training course on beach dynamics for participants from the Mediterranean and the Black Sea was conducted by the International Centre for Coastal Ocean Dynamics at the Foundation for International Studies of Malta, in co-operation with the Operational Centre IOI-Malta. This is a new way of implementing IOI related training activities through co-sponsorship and pooling of resources, which seems rather cost-beneficial.

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The IOI courses are addressing practitioners, civil servants and coastal community leaders. In this way a new set of civil servants knowing about problems of coastal zones and related management is being gradually developed.

The courses are popular as is seen by the number of applicants being about double the available places. The quality of applicants is very variable. The numbers of alumni given promotion after completion of the courses, or representing their countries, or both, are not known. However, there are many, as is evident from the wide knowledge of IOI seen in several of the intergovernmental meetings on ocean affairs.

A fundamental principle of the IOI training activities continues to be the interdisciplinary and inter-sectoral aspects. These include the social ones, which certainly is rather unique for the IOI. An additional example of this line is provided by the IOI module presented annually at the World Maritime University of IMO.

A fairly innovative approach in advanced training is now being initiated through the IOI Virtual University on ocean affairs. Related distance learning modules are being developed, notably by IOI Southern Africa, in co-operation with others.

#### The IOI Virtual University

At the June 1999 joint meeting of the Executive Committee and the Directors of the Operational Centres, the Executive Director proposed that IOI establishes a Virtual University addressing marine affairs, ocean governance and related specifics over a wide range. The idea is to use existing IOI courses together with other courses on ocean-related subjects given at the Host-institutions of the IOI Centres. From the available courses several core courses will be selected so as to form the basis or backbone of a master degree awarding course e.g., in coastal management. Additional courses will be taken on an individual basis so as to cater for local, national, or regional needs, thus completing the education/training.

The proposal was endorsed by the Planning Council and Governing Board in November 1999. On the basis of the concept paper by Prof. Mann Borgese, the Board established an inter-sessional Working Group charged with specifying the concept, content, management and draft a provisional Charter.

The IOI Virtual University for the Ocean, or for Ocean and Coastal Zone Governance, will essentially be a network of education, training and research centres with expertise in ocean, coastal and marine related affairs and governance, joined together in a partnership so as to provide for an interdisciplinary and comprehensive coverage of the subject areas. The overall objective would be to enhance the abilities of developing countries to develop and govern their own marine and coastal resources and environments sustainably, for the benefit of their peoples, in harmony with related international conventions and agreements.

Undertaking the task of establishing such a "Virtual University" or, for the IOI to act as a "virtual university" is extremely ambitious, challenging and innovative. The "Virtual University" should accept students globally and award an interdisciplinary, internationally recognised master's degree. The institutional arrangement is without precedent. The closest, perhaps, is the M.Sc. Degree awarded by the World Maritime University; with whom the IOI has a long-standing working relationship which should include also cooperation on the "Virtual University" project. The World Maritime University, however, is not a "virtual university". It is a University built of bricks and mortar,

where students reside for periods of 1-2 years. The degree awarded, furthermore, is not broadly interdisciplinary but designed for experts in the shipping industry and the management of ports and harbours. Other precedents are given by the UK's Open University or the Commonwealth of Learning in Vancouver, BC. And there is of course a growing network of distant-learning arrangements. None of them, however, is structured to award a globally recognised, interdisciplinary Master's degree in ocean affairs for students anywhere in the world.

The new institutional academic arrangement proposed by the IOI should respond to a number of challenges and new opportunities:

1. The interdisciplinary character of contemporary knowledge, which transcends the departmental divisions of traditional universities. Traditional universities, in many parts of the world, are struggling to overcome the structural impediments to interdisciplinary learning. The IOI Virtual University could be a pilot experiment toward new approaches to this problem.
2. "Globalisation" and the communications revolution, facilitating global communication among universities and between universities and students, but still largely inaccessible to students in poor countries.
3. Financial constraints on students, especially in developing countries, which in most cases prevent them from extended sojourns in foreign countries to obtain a well recognised degree; and where they succeed, the brain drain, detracting from rather than adding to the transfer of knowledge to developing countries.
4. Financial restraints on Academia, globally, entailing more and more "downsizing" and "privatisation" of universities, which may endanger academic freedom as well as public higher education as a pillar of genuine democracy.
5. It shall be a continuous objective of the University to advance innovative approaches towards solving some of the major problems besetting higher education at the end of this century and on the eve of the next millenium.

The need for restructuring of higher education is felt globally. As in international law and organisation, or in economic thinking, it is likely that the peculiar nature of the ocean environment and its resources may be most suitable for a pilot project for an innovative approach to the sharing of knowledge as a Common Heritage of Mankind. It would also appear that the evolving structure of the IOI, itself an innovative system reflecting in its activities an evolving world order reaching from the local community to the nation, the region, and the United Nations, with its accumulated experience and track record in training in ocean affairs, is uniquely suited for this pilot project in education.

The purpose of the IOI Virtual University is:

- to contribute to the sharing of knowledge as a Common Heritage of Mankind, with special consideration for the needs of developing countries;
- to contribute to the enhancement of interdisciplinary learning;
- to contribute to the merging of the information revolution and the coming century of the ocean;
- to develop innovative approaches towards solving some of the major problems besetting higher education at the end of this century;
- to facilitate and provide a mechanism for students and professionals in developing countries to obtain post-graduate level education as well as advanced training, upgrading and supplementing of previous education and work-experience.

The intersessional Working Group established by the Board delivered an interim report to the June 2000 meeting and its concluding report will be presented to the session of the Governing Board in December 2000.

Through the intervention of the Honorary Chair, Professor Mann Borgese, expressions of interest to co-sponsor the IOI Virtual University have been obtained from the United Nations University, the World Maritime University, the United Nations Peace University, UNESCO through IOC, and the Nippon Foundation.

The Working Group has drafted a Charter, compiled a list of existing IOI courses and relevant courses of the Host institutions, proposed a number of core as well as optional courses, suggested a system for awarding credits and suggested the level of credit requirements for a masters degree, has initiated preparation of core courses for on-line presentation, and has suggested an initial governing and administrative structure for the Virtual University. It has also proposed that the name simply by the IOI-VU.

Supplementary to the Virtual University initiative the IOI Governing Board also in November 1999 endorsed the proposal to launch a dedicated Youth Programme of IOI. This was to some extent stimulated by the experiences of the Eco-Villages project being carried out by IOI India in working with youth and children in the villages. The co-operation with HELMEPA and its suggestion that we co-operate in increasing awareness of youth about the marine and coastal environments on the basis of their experiences in HELMEPA Junior also stimulated us. The idea is that the Operational Centres will endeavour to associate youth with some selected activities, or generate a specific youth-oriented action as part of their annual programme. In order to establish some common basis the Governing Board in 1999 endorsed a Youth Programme Menu from which the Operational Centres could preferably choose their activities. At the mid-term meeting in June 2000 the Operational Centre Directors reported on youth-oriented activities. It turned out that all the Centres are

pursuing such activities. Thus it appears that a system-wide programme is being put in place that will also help rejuvenate the IOI itself through feedback and increasing youth-participation.

### 3. Development

Apart from development of human resources, the IOI system is involved with other development issues in most of the Centres, addressing:

poverty eradication; generation of self-reliant development in local coastal communities; resources management, development of eco-friendly technologies and use of traditional environmental knowledge; co-development and co-management with some focus on integrated coastal area management; sustainable livelihoods; mitigation of and adaptation to natural hazards, e.g. cyclones, storm-surges; empowerment of developing country communities to manage their coastal and EEZ resources.

Problems of coastal communities are addressed in an integrated way, with social, economical, environmental and survival aspects all taken into account in community driven projects, guided by IOI Centres in cooperation with local NGO's, and in consultation with local and national authorities as required. The basic approach involves co-management and sustainable Livelihood considerations. The innovative part lies in addressing the links between social, survival, economical and environmental needs, in a balanced fashion. This goes beyond integrated coastal area management. An IOI model is emerging. This is exemplified through interests shown by governments and other NGOs in our work and the interest of one Donor (JFGE) to gradually develop a global project or programme on basis of this approach and experiences. The impact on local communities is seen through the improved living conditions, the increased self-reliance and confidence, the establishment of local community-driven enterprises, e.g. mariculture, food processing, treeplanting and gardening, the increased interest in education.

The Eco-Villages project has continued to be strongly developed through efforts of IOI India, based at IIT Madras, in Chennai. In parallel several related coastal zone development projects are being implemented, with a slightly differing focus, but using the same basic approaches and ideas. This is an example of additionality and reproducibility.

#### IOI India

##### **IOI India Coastal Eco-Villages Project**

Supported from German GTZ funding, the Project during 1999 has been extended to 40 coastal villages of Tuticorin District in South Tamil Nadu. The villages are inhabited by dalits, (or

communities marginalised for years by the social, political technological and economic systems), who are primarily landless labourers. The project focuses on women, since they are under greater pressure compared to the other groups. While IOI India provides all the supervision, monitoring, information and technological support and expert help, a local NGO carries out the work in the villages. The Project was to end on 30th September 1999, but was extended until 31st December 1999 to complete a few ongoing activities.

Over the period 1997-1999, about DM 140000 has been spent on the Project activities from GTZ funds. With this input combined with the in-kind contribution of IOI India, the achievements have been:

- Women's self-help groups have been formed in all 40 villages and there are now over 1100 members in these groups.
- 200 training programmes were conducted amounting to a total of 12000 participant-days. The programmes included training in skills, development issues, vocations, and ecology.
- Nearly 4000 tree saplings were given to the villages with the women's groups taking responsibility for planting and taking care of them. Nurseries have been started in two villages as an income generating activity. Vegetable gardening has also been started in two other villages.
- Over 200 fuel-efficient stoves were distributed.
- Four rainwater harvesting tanks have been built in public places like schools.
- A preliminary survey of all the water sources was made.
- Five spirulina production units were established using community-based technology. About 1.5 kg of spirulina produced every month is being given to children in the villages as an effective nutritional supplement.
- Vermiculture has been started in two villages.
- Over 390 women have been given loans of Rs. 2000/- each. The recipients have used loans from income generation activities like Thatch Making, Goat Rearing, Poultry, Lime Production, Petty Shop, Grinding, Palm leaf product making, Cloth Merchant, Tailoring, Milk Animal, Vegetable Vending, Plastic-wire Weaving, Utensils Merchant, Banana leaf business, Firewood business, Salt business, etc. The repayment has been excellent so far (about 90% making payments on time). The money returned is being used as rolling fund given out as loans to new recipients.
- Other activities carried out under the Project include:
  - the establishment of 15 evening schools catering to the needs of 667 students in two villages (with additional financial support from a child relief organisation);
  - 60 women were trained to ride a bicycle

- mitigating their local transport problem;
- 140 women were trained in typewriting and tailoring;
- 200 children were provided computer training;
- Sports and cultural programmes were conducted for women and children;
- A 25-minute video film on the Project has been made.

### Conservation of Coastal Environments

Through support from the Japan Foundation for Global Environment, IOI India initiated the project on "Conservation of Coastal Environment Through Environmental Education and Capacity Building in Poor Coastal Communities" starting in April 1999. The Project had been proposed for three years for a total budget of US\$ 135,000. JFGE has sanctioned Yen 4.9 million (US\$ 48000) for the first year. This Project continues most of the ecology-related activities started under the GTZ supported project.

The achievements during April-September 1999 were:

- 39 centralised training programmes were conducted for the villagers accounting for a total of over 560 participant-days. The topics included coastal ecology, environment, ecotechnologies, and development issues.
- Village-level Mass Awareness programmes were conducted in 19 villages through street plays and songs on theme of preserving the environment.
- Cleaning campaigns are being conducted every Saturday. The whole village community including women, youth and children participate in a day-long campaign. So far, six villages have been covered.
- World Environment Day was celebrated with competitions on essay writing, songs, and dramas on the theme of "Environment". 42 women and 47 children participated in the competitions.
- Over 3700 tree saplings have been distributed to the women's groups, who have taken the responsibility for planting and taking care of them.
- Community gardens/social forestry has been created in unused government lands in two villages.
- A cultural troupe consisting of women from the villages and the temporary staff of the project has been formed. The troupe has been trained to create awareness through songs and street plays on environment, water conservation, education, etc. The troupe is now being used in the target villages to create awareness on environment.
- A detailed geological survey of all the traditional wells, ponds and other sources of water in about 20 villages has been carried out.
- Six wells have been desilted and cleaned and measures are being taken to provide percolation pits near each well in order to recharge them during the impending monsoon. Most of these wells are saline and it is hoped that recharging with rainwater will change the quality of the water.

- An impact assessment of the rainwater harvesting tanks constructed in the GTZ Project has been made. This review will help in planning further activities in rainwater harvesting.
- The production of spirulina is being continued and the production given to children in the villages.
- Vermiculture practice is also being continued in two villages.
- A computer system with adequate storage capacity has been acquired and trials are on for developing a database of eco-technologies.

### **Dedicated Youth Programme**

In June 1999, Director, IOI India, made a presentation before the Boston MIT Chapter of Asha on a project to help the children of coastal villages. Asha is an organisation of Indians in USA, which raises funds for development projects in India with a focus on children.

The proposal, with a budget of US\$ 6100 for two years, is to bring a fundamental change in the lives of 70 children in one of the most deserving villages of the GTZ Project. Many aspects of the child's life will be touched: education, health, vocational preparation, talent promotion, computer awareness, etc. The children will also directly participate in environment-oriented activities to make the village a better place to live in.

Asha volunteers have made a site visit and the Project started getting off the ground in January, 2000.

### IOI Pacific Islands

Several activities addressing development of marine awareness, coastal zone protection, management and monitoring were carried out, often in cooperation with other organisations. Examples are:

- IOI-Pacific Islands is a partner with the Fiji Dive Operator's Association and the Government of Fiji in the development of the **Cakaudrove Marine Park** in Fiji. New Zealand ODA provided funding for two Marine Awareness workshops, to be held in the establishment of the Park, the programme has been postponed until early 2000. NZ ODA will fund further awareness-raising activities once the first workshops have been concluded in Savusavu (Vanua Levu) and Somosomo (Taveuni).
- IOI-Pacific Islands worked jointly with the World Wide Fund for Nature, the Fisheries Division of the Fiji Government and the village of Waisomo, Kadavu, Fiji in the completion of a **Biological Survey of the Waisomo Marine Reserve** established on the Great Astrolabe Reef. Funding was provided by the Conservation Action Fund of the New England Aquarium, Boston, USA.



- IOI-Pacific Islands has been designated as a node under the **Global Coral Reef Monitoring Network (GCRMN)**, for Fiji, Tonga, Samoa, Tuvalu, Nauru and Kiribati. Work commenced before the end of 1999 on the identification of National Coordinators for each country. Funding for the production of State of the Coral Reefs reports was approved by the Conservation Action Fund. A funding proposal was developed for the first three years of the node's activities for the joint IOC/SIDA programme. A proposal will also be developed for funding from the Canada-South Pacific Ocean Development Program, Phase II. A report on the state of coral reefs in the region was published in June 2000 through IOI-PI and MSP of USP, Fiji.
- IOI-Pacific Islands, in collaboration with the **Women in Fisheries Network (Fiji)** has developed several proposals for funding under the general IOI Women and the Sea programme Umbrella.

### IOI Southern Africa

The general area of development includes Sustainable Livelihoods in coastal communities and Integrated Coastal Area management.

#### **Sustainable Livelihoods in St. Helena Bay**

A small amount of funds were made available by UNDP for a project based on **Sustainable Livelihoods** in St. Helena Bay. The project grew out of the proposal for a feasibility investigation of the Biovillages concept that was submitted to UNDP in 1998. Dr. Naresh Singh visited IOI-SA during the first week of November 1998 to offer valuable advice and assistance. This project is being undertaken by Ms. Marisa Kashorte (M.Sc. student) & Dr. P. Saravanakumar (postdoctoral fellow). A considerable amount of literature on SL and supporting methodologies has been acquired, and studied by the project participants. An interview-based questionnaire has been designed, and piloted in Laingville in April and May 1999 by Ms. Kashorte and Dr. P. Saravanakumar. A good rapport has been built with the community, and using the facilities of the community trust we have also obtained office space in Laingville (for which we will have to make a small contribution to the community trust). Phase one of the questionnaire has been completed, and the cross-sectoral policy analysis is underway. Dr. Kumar had to return to India in September because his visa expired, and we did not know if his fellowship would be renewed. This has, however, been successfully achieved, and he returned to South Africa on October 31. He will return to St. Helena Bay immediately to complete the questionnaire.

A short article "Sustainable Livelihoods at the coast: creating people-centred management of coasts and coastal resources" has been published in "Quarterly Public Enterprise" journal of ICPE.

## **Distance learning developments**

IOI-SA has embarked upon a training project that represents a first for the IOI system, through a grant from the South African Innovation Fund. IOI-SA is preparing a course for delivery entirely online via the Internet. The project is called MIDESS.learn.

MIDESS.learn is a web-based Integrated Coastal Management training package to be developed by the IOI-SA located at the University of Western Cape. MIDESS.learn is a component of the Marine Integrated Development Support System (MIDESS) that is coordinated by the Council for Scientific and Industrial Research (CSIR). MIDESS is in turn a component of the South African Integrated Spatial Information System (SA-ISIS), a program that is funded by the South African Innovation Fund. MIDESS is one of three components of SA-ISIS, the others being an Agricultural Management and Support System (AGIS), and a Biodiversity Monitoring and Assessment System (BioMap).

MIDESS is developing web-based decision support tools for coastal and marine management. The MIDESS.learn component aims to provide web-based learning materials and courseware in support of the aims of MIDESS. Courses are developed within the framework of the recent legislation on higher education, and will be registered within the National Qualification Framework as equivalent to one undergraduate module.

The first module of MIDESS.learn was being developed during 1999, and was "An Introduction to Integrated Coastal Management." The target audience includes mid-career decision makers who may wish to acquire or refresh a basic understanding of ICM principles, as well as undergraduate or postgraduate students of environmental management, coastal engineering, or environmental law. While the focus is South Africa, the course will be available globally via the medium of the internet. Additional modules are in the planning stages and will be developed during future years.

Participants will be able to register for and study all MIDESS.learn modules online via the SA-ISIS portal site. There will be no classroom version of the courses, and all assignments will be submitted via email, FTP, or snail mail as participants choose. Modules will be the equivalent of one undergraduate module (100 notional hours), and will be available for degree credit or as a certificate module. The first module was due to be available in November of 1999, for delivery to students early in the year 2000.

## **Cooperation with Train-Sea-Coast**

The Train-Sea-Coast method of course development is offered by the United Nations Division for Ocean Affairs and the Law of the Sea. This method includes a preliminary analysis, population analysis, curriculum design, module design, production and developmental testing, and validation and revision. The use of

subject matter experts for module design allows for the development of a course by someone who is not a subject matter expert. IOI-SA, together with the Centre for Marine Studies at the University of Cape Town, makes up the Course Development Unit for the Benguela Current Large Marine Ecosystem project. Dr. Bernadette Brown (IOI-SA) and Dr. Howard Waldron (Centre for Marine Studies) are the course developers for the Course Development Unit, and are developing the first of two courses to be completed as part of the agreement with the UN Division of Ocean Affairs and the Law of the Sea. The course on Marine Pollution Control, was scheduled to be ready for validation in the first part of 2000.

### **Mariculture for community development**

Following the participation of community members in the first and second Seaweed Mariculture courses in 1997, two commercial ventures were formulated. Two women formed a company named Femkelp and applied for a seaweed concession area between Saldanha Bay and Velddrift. They planned to collect or harvest kelp to supply local abalone farmers. The company is still waiting for the national Department of Marine and Coastal Management to make a decision about their concession application. Another organisation called the St. Helena Bay Community Seaweed Initiative was formed, with about 30 members. With financial support from the Department of Trade and Industry, IOI-SA has helped the organisation to apply for water space for a pilot seaweed (*Gracilaria*) farm in 1998, to write a professional business plan and to form a public company. The Department of Marine and Coastal management has not supplied an answer on the water space application yet. If permission for a pilot seaweed farm is granted, IOI-SA will be involved in the establishment and running of the farm.

In May 1998, Bernadette Brown submitted a funding proposal to the German Bundesministerium fur Umwelt, Naturschutz und Reaktorsicherheit in Bonn, with Dr. W. Ekau, from Zentrum fuer Marine Tropenokologie in Bremen, as partner. Items for which funding was applied, include staff costs, equipment, consumption goods, and contracts with third parties and travel expenses. A total of US\$ 54,800 was applied for. The proposal received a positive rating and was funded from November 1999. The amount approved in 1999 was DM 61,300, paid to IOI-SA on November 1. This money is used to ensure IOI-SA active participation in the pilot seaweed farming project in St. Helena Bay as the lead institution.

In 1998, IOI-SA received R7000 from the Department of Trade and Industry (West Coast Investment Initiative Programme) to help the community of St. Helena Bay register a company, apply for sea water space to run a mariculture pilot, and produce a professional business plan. This amount was increased by R7000 in 1999, so that the total received from the DTI is R14000. This phase has been completed and IOI-SA will continue this project to commercial pilot using the German funds mentioned earlier.

## IOI Costa Rica

Considerable efforts have been made in relation to coastal community developments coupled to re-establishment after hazardous events like hurricanes. Proposals have been prepared for cooperative projects to increase response capabilities, social management and help reconstruction. In parallel efforts are made to enhance capabilities and awareness about coastal zone management. This includes a consultation process with communities to identify useful models for community participation in Integrated Coastal Zone Management actions, with focus on the Gulf of Nicoya as a case study. The problems of maintaining diversity and obtain sustainable livelihoods have been addressed. Efforts are being made to generate inventories of coastal and marine biological diversity, in cooperation with other national institutions in Costa Rica.

## IOI Japan

An artisanal fisheries technology development project has been initiated based on newly developed Japanese technology. The aim is to revitalise artisanal fisheries and employment in the fisheries sector. The project is a bilateral cooperative effort between IOI Japan and IOI Costa Rica.

## IOI China

The national efforts to manage the coastal zones and generate related legal and institutional mechanisms and surveillance are considerable. They are falling under the responsibility of the State Oceanic Administration, Host institution to IOI China. In supporting these efforts the Operational Centre organised the training course on integrated coastal management, and also generated an overview of important events in the national work. This presents a concise overview and shows the approach, coverage and sequences adopted in these efforts.

In a related context the Operational Centre prepared an overview and survey of red tides or harmful algal blooms in China since the 1930's. Particular attention was given the Huang Hai and Bohai Sea Areas. The review shows the increasing occurrence of red tides. A peak is seen in the early 1990's, followed by a decrease, but with an increase again in 1997-1998.

The impacts of the red tides are serious in causing hazards to fisheries and mariculture through destruction of fish, shrimps, shellfish and algae. In addition human health has been frequently influenced through indirect poisoning from seafood. The red tide phenomena have become a serious marine disaster problem in China from the 1980's.

IOI China has also prepared an overview of efforts in China to implement the Global programme of Action for the Protection of the Marine Environment from Land Based Activities (GPA-LBA).

This shows considerable efforts at national and provincial levels. Public awareness about the problem of land-based pollution is also being enhanced through these communication efforts.

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Through a private donation of 1 million Swiss Francs to the Endowment Fund, also known as the Ocean Science and Research Foundation, earmarked for the purpose, an IOI "Women and the Sea" programme has been established. This will in the phase run for 3 years from 2000, and involve about 7 of the Operational Centres. The programme is dedicated to enhance the capacity and participation of women in poor developing countries in ocean and coastal affairs. The activities in the programme include: training of women decision-makers, at IOI-Canada; improving quality of life for women in poverty stricken coastal communities (IOI Costa Rica; IOI India; IOI Southern Africa; IOI Senegal); development of sea weed farming mariculture and local fish processing (IOI Eastern Africa, IOI Southern Africa, IOI Senegal); education for sustainable management, conservation and development of marine resources, in co-operation with the Women and Fisheries Network (IOI Pacific Islands).

#### 4. Ocean Governance

The achievement of proper ocean governance is a major objective of the IOI. The work of IOI in this field is based on the comprehensive international environmental law which is in place through the United Nations Convention on the Law of the Sea which entered into force in November 1994, in combination with the results and agreements coming out of UNCED 1992 and the related follow-up processes. A central theme of IOI is the application of the Common Heritage of Mankind principle. At the global and regional level the Pacem in Maribus Conferences provide for a mechanism to present, discuss, and explore various aspects of ocean governance.

#### PIM XXVII

Pacem in Maribus XXVII was organised and hosted by IOI Pacific Islands (then called IOI South Pacific) in Suva, Fiji, 8-12 November 1999. The theme was Oceans in the New Millennium - Challenges and Opportunities for the Islands. The Conference was structured with two plenary sessions, 6 panels, 2 Working Groups and one public lecture.

The plenaries focused on: UNCED+5: A Vision of the Future for the Islands; and UNCED+7 and Barbados: Where we are now; with invited lectures by Mr. T. Tutangata, Director of SPREP, and Ambassador T.N. Slade, AOSIS and Samoa's Permanent Representative to the United Nations, respectively. Both generated considerable discussions, some highlights of which are:

the need for cooperation between organisations, national

authorities, regional bodies, and between all sectors of society;

public awareness and participation enhancement, with associated local community work;

need for strong regional cooperation and unity of Small Island Developing States;

need for technology transfer through partnership developments;

need for more integration of ocean issues and a broader treatment of them by the United Nations General Assembly.

The panels covered the following themes:

1. Boundary issues in the South Pacific.
2. Revitalisation of the Regional Seas Programme.
3. Traditional Marine Tenure and Empowerment of Resource owners.
4. International Seabed Authority and Deep-Sea mining in the South Pacific.
5. The Oceanic Environment.
6. Marine Biodiversity and Bioprospecting.

Each panel was addressed by a distinguished keynote lecturer focussing on the major issues of the theme. This was followed by highlights from panelists, and discussions.

On the basis of the presentations and discussions the Fiji Declaration on Islands in the New Millennium was drafted, and adopted at a final plenary session. It is included here as Annex 2.

All presentations, summaries of discussions and the Declaration will be published in the proceedings through IOI Pacific Islands.

The two workshops were organised in order to address some specific local and regional issues: (i), promotion of south-south partnerships for technology transfer and curriculum sharing for people-centred integrated coastal management; and (ii), the role of women in fisheries management in the Pacific. The results of the workshops were presented to the plenary.

Several recommendations were approved and directed to IOI for follow-up:

**Statement on Capacity-Building for People-Centred Integrated Coastal Management (PCICM)**

The participants to this Statement,  
Being participants to the Workshop,  
Having identified needs that can be addressed through  
South-South partnerships for capacity building,  
Having noted some centers of expertise and experience in

people-centered integrated coastal management in the "South",  
**Having identified** obstacles to South-South collaborations on people-centred integrated coastal management,  
**Having suggested** solutions to overcome these obstacles,  
**Recognising** IOI as a global institution with experience and expertise in networking and people centered integrated coastal management, and with a shared vision that focuses itself at community level,  
**Therefore propose** that IOI take a lead role in developing South-South partnerships in capacity building, curriculum sharing and technology transfer for people centered integrated coastal management.

Several suggestions were made for possible IOI actions in this respect:

IOI partnerships with other NGOs can support the initiation and development of projects and improve organisation skills at the community level through workshops. It is crucial that collaborating NGOs share the same vision. Restructuring of government departments and creatively using existing government structures could also help implement awareness at the community level. IOI can also act as a 'catalyst' to various organisations.

The development of an NGO registry or databases can avoid project duplications and collisions resulting in confusion. More information could also be made available through the development of an **Ocean Management Search Engine**, sharing of curriculum materials and decision support tools such as Geographical Information System (GIS), Environmental Impact Assessment (EIA), and State of the Environment (SoE) indicators. IOI needs to share more of the information available within the organisation and with outsiders or partners. This could be achieved by setting up a **knowledge network** to provide information on funding mechanisms.

To help link weaker nodes, IOI can take the initiative in providing leadership role models and developing leadership at nodes. Strong institutions such as USP can also play leadership roles. Apathy can be overcome by arousing interest in the community through education and giving incentives using challenging and innovative ideas in ICM at community levels. Language problems could be tackled by building the local capacity amongst people who already know more than one language. Training is required for effective use of decision support tools (EIAs, GIS, & SoE indicators) and more importantly making them relevant at the community level. A possible technology database can be used to link research and development to action at community level and IOI can operate as a global network. Lastly, dialogue with political decision-makers, effective representation and marketing and persistence is essential to overcome political unwillingness.

This year the public lecture given at the Pacem in Maribus Conference was the First Arvid Pardo Memorial Lecture of IOI, in honour of the late Dr. Arvid Pardo. It was given by the President of Malta, H.E. Professor Guido de Marco, on 9 November 1999. The title was: "A renewed Trusteeship Council - Guardian of Future Generations: Malta's Initiative at the United Nations". It generated very much discussion, and drew enhanced public interest to the PIM Conference. The lecture will be published in the Proceedings of the Conference.

The Conference was considered a great success, also as regards the institutional building elements it achieved for USP, including the increasing cooperation with regional bodies which it seems to have generated. The Conference attracted about 200 participants from 30 countries and from many intergovernmental and non-governmental organisations.

The entire proceedings were video taped and a high level panel focussing on the IOI and PIM issues was recorded. A unique feature of PIM XXVII was the strong involvement of USP's Post Graduate Students.

#### Other activities

Leadership seminars are appearing as regular activities of IOI, following the example developed by IOI-Canada. The Leadership seminar of institutional development nature at the International Seabed Authority has been given by IOI-Canada in 1998, 1999 and in 2000. The novelty concerns the broadening of the seabed authority to include new very important resources of the seabed e.g. for bioprospecting, hydrates and trans-ocean cables. This requires awareness creation, increase of participation and concern among the national representations at the Seabed Authority. The impact of the seminars is seen by the strong interest, by the increasing discussions on these matters and the interest expressed by the Secretariat of the Convention on Biological Diversity.

IOI Black Sea Operational Centre first activity was the organisation of the leadership seminar "Using Today's Scientific Knowledge for the Black Sea Area's Development Tomorrow," Mamaia, Romania, September 21-23, 1999. Contributions were presented by experts from several Black Sea riparian countries and other experts. The proceedings of the seminar are in process of publication and will be available for distribution at PIM XXVIII, December 2000 in Hamburg, Germany. The Seminar led to adoption of a programme on awareness creation and regional co-operation. A continuation is planned for 2000 as a follow-up.

IOI-China organised leadership seminars on UNCLOS and UNCED implications at national level. Here the IOI acts as a facilitating mechanism generating cross-sectoral communications between national authorities and provinces at national level. IOI-Japan organised local leadership seminars in co-operation with Yokohama University in order to establish a programme for



increasing public awareness and participation.

Preparations have been initiated for a Leadership Seminar on Mediterranean Basin-wide Co-development and Security, to be hosted in Malta. This represents a novel approach, which is appropriate for a non-governmental organisation to explore. Cooperation is, however, also in this case sought with several intergovernmental partners.

## 5. Research and Science Application

The Operational Centres are associated with universities or other research- and technology-oriented institutions as their Host institutions. The IOI activities in this area include policy-oriented research, studies in governance mechanisms, and of legal economical and social orders, as well as natural and social science research. There are also carried out studies as regards international cooperation, management frameworks and agreements. Interpretation of scientific results and the transfer to users are often parts of the whole process.

The book "The Oceanic Circle" by Professor Mann Borgese (1998) represents one example of sustained research over several years. The standing annual publication of the Ocean Yearbook driven by IOI-Canada in cooperation with the University of Chicago and the Dalhousie University also brings together current research results regarding the ocean, its resources, its multitude of uses and its governance. This annual publication provides for a comprehensive regular up-dating of advances in the study of marine affairs.

Volume 14 of the Ocean Yearbook was published in 1999, with the editorial office in the Marine and Environmental Law Programme, Dalhousie Law School at Dalhousie University.

A fundamental theme of the policy-oriented research concerns the interactions and linkages between the Law of the Sea Convention and Conventions, Agreements, and programmes resulting from UNCED 1992 and the related follow-up processes. These matters were analysed in-depth in the book by Professor Mann Borgese. The results have provided a fundamental basis for the proposals from IOI to the United Nations, through the CSD and other mechanisms, to establish a global ocean governance mechanism at the level of the United Nations General Assembly. This helped generate the decision of CSD VII in 1999 to suggest the establishment of an open-ended Working Group to study and prepare a proposal to the general Assembly on this matter. The IOI was represented at the first session of the established mechanism (UNICPOLOS) by Professor Mann Borgese, in May-June 2000. The IOI statement at the occasion is provided in Annex 3.

The implementation of the GPA-LBA has been supported through the generation by IOI of the GPA News Forum, following an agreement on this with the UNEP GPA Coordination office in The Hague, in May 1999. This has been done in consultation with other NGO's,

e.g. WWF-International, Greenpeace and IUCN, and in close consultation/cooperation with UNEP. The News Forum was presented as a Website and a hardcopy at the UNGA Special Session on SIDS, September 1999. Most of the IOI Centres participated in this process.

The revitalisation of the Regional Seas Programme of UNEP, in cooperation with UNEP, has been addressed at regional seminars for the Caribbean, in Jamaica August 1999, and for the Black Sea in Romania, September 1999, and at the PIM XXVII Conference, Fiji, November 1999. Four regional overviews have also been published in cooperation with UNEP, for the Caribbean, Mediterranean, Indian Ocean, the South Pacific, as a set of brochures for UNEP. This action has taken into account proposals from UNEP and other organisations.

The interactions between the UNCLOS and UNCED mechanisms have also been analysed in the study on biodiversity and bioprospecting under preparation by IOI-Canada for the Secretariat of the CBD. This is in co-operation with UNEP. The possibly expanding role and evaluation of the ISBA (International Seabed Authority) has been studied in a report prepared for the ISBA. This was presented in abbreviated form to PIM XXVII, November 1999. This study also considers the need for interaction between ISBA and the CBD mechanisms.

Risk management, vulnerability and risk reduction problems are also being studied through various actions. The project on risk management in integrated coastal zone management, under leadership of IOI Canada, is one example of a system-wide effort. This is carried out in partnership with the Swiss Reinsurance Company as concerns the first phase 1999-2000. The Bermuda Biological Station for Research is also a partner in the Workshop entitled Risk Assessment and Disaster Mitigation: Enhanced use of Risk Management in Integrated Coastal Management, Bermuda 14-16 February 2000. As part of this project IOI Canada developed a five day training module on the enhanced use of risk management in integrated coastal area management. The module was tested as part of the summer training programme and as a result of that test, a number of revisions have been made.

Preparations for the seminar in Bermuda have been made by IOI Canada. A number of experts in both the insurance and marine communities have been identified and invited to make presentations as part of the workshop programme to augment contributions developed through the other IOI Operational Centres. In all, 29 experts from scientific, insurance, economy, social sector attended the seminar.

The aims of the seminar were:

- (i) to bring together representatives of the insurance industry and of selected sectors operating in the coastal areas to discuss risk management issues of common interest, identify solutions and increase awareness of coastal links;

- (ii) to prepare material for training modules directed at specific target groups, and public awareness-raising material which could be used in the regions following the incorporation of region-specific material;
- (iii) to expose the IOI Operational Centre Directors to insurance practitioners and to the Risk Prediction Initiative (RPI) of the Bermuda Biological Station for Research Inc., and to establish new contacts; and
- (iv) to provide information about region specific problems and priorities.

The Seminar participants were provided with documentation in advance. At the Seminar, stage-setting presentations generated discussions and dialogue.

The dialogue in Bermuda concluded that the greatest potential benefit to be gained from better risk management lay in enhancing its use at the coastal community level within the context (strategic, organisational and management) of Integrated Coastal Management. Discussion also revealed that there are new and more sophisticated risk management tools being developed all the time. Examples such as the Risk Prediction Initiative, the Environmental Vulnerability Index, geo-spatial mapping systems, risk management databases, early-warning systems, disaster mitigation plans, emergency preparedness and response measures were all presented and discussed. It became clear that for effective risk management in coastal areas these tools have to be adapted for use by people in coastal communities, and within the context of Integrated Coastal Management (ICM)

The international insurance industry's products, perspectives, and concerns relating to dealing with risk in the coastal zone were presented and discussed. Here again it was concluded that for effective risk management and risk transfer, the insurance industry would have to become an active stakeholder in ICM and that its expertise and its insurance products would also have to be adapted accordingly.

The Seminar made several recommendations, including:

- creation of increased linkages between insurance industry, scientific groups, marine sector practitioners;
- enhance risk management activities in coastal zone management, in particular hazards and vulnerabilities;
- conduct risk management awareness and training activities in developed and developing countries, including leadership seminars, practical training courses and train-the-trainer courses; this is all along the lines IOI have initiated;
- quantify the potential benefits of implementing risk

management at coastal zone community level;

- conduct research to adopt current risk management measures and tools to the scale and context of ICAM, as well as regards financial structures and insurance products needed to meet the requirements for risk management in the coastal zone.

The Seminar was in a way a seminal event. It opened a dialogue between the insurance industry and the ocean and coastal management community, a dialogue that revealed a notable convergence of interest in an emerging and crucially important component of the global system: the coastal zone. The converging interest is risk reduction. If properly articulated and implemented, the alliance between the ocean and coastal management community and the insurance industry could be of considerable mutual benefit and contribute to improving the livelihoods of billions of people. Coastal zone problems and developments are being addressed in research programmes in several IOI Centres.

The IOI Southern Africa is focusing much attention on seaweed mariculture research. The results feed directly into community-based mariculture projects. Presently, the cultivation of the red seaweed *Gracilaria*, and the kelps *Macrocystis angustifolia* and *Ecklonia maxima*, are being studied.

Mr. J. Wakibia working on *Gracilaria* has completed his M.Sc. degree in 1999 on Growth and agar characteristics of gracilarioid algae grown in suspended cultivation in St. Helena Bay. This work paves the way for the commercial cultivation of *Gracilaria* in St. Helena Bay, and there are plans to follow on with further work on a commercial scale. A paper from this thesis was submitted to *Journal of Applied Phycology* in October.

Ms. Mellisa Harper and Ms. Dale Norman are presently involved in the experimental cultivation of the kelps *Macrocystis angustifolia* and *Ecklonia maxima* under joint supervision with Dr. Robert Anderson of the Directorate of Marine & Coastal Management. The research is aimed at providing high-quality, sustained input of food to the abalone mariculture industry, and determining the feasibility of producing high-quality medical alginate from farmed kelps. A mist/spray cultivation apparatus has been constructed at the Marine & Coastal Management research aquarium, and plants have been grown through to the young sporophyte stage. They will be planted out on a raft in the sea.

Seaweeds represent an important resource, both because of their economic applications, and because of the ecological goods and services that they supply to the ecosystems in which they occur. The research here focuses on two aspects of seaweed biodiversity: discovery of new economic uses of seaweeds and their sustainable exploitation; and attempting to understand the systematics, evolution and ecology of the numerically abundant but poorly-understood crustose coralline algae.

Ms. Denise Cameron is investigating the biomedical activities of the secondary metabolites of some of the red alga found along the coast of South Africa. This involves testing the seaweed extracts for antimicrobial, antioxidant, cytotoxic, anti-coagulation and immunosuppressive activity and isolating the active compounds. This research has the potential to add value to our seaweed resources. During 1999 techniques have been learned, and extracts from several seaweeds screened for cytotoxic and antibiotic activity.

Crustose coralline algae (Rhodophyta, Corallinales) are calcified red algae which are widespread in intertidal and subtidal marine systems. The team is studying crustose coralline algal biodiversity and systematics from the South African coast, as well as throughout the tropical Indo-Pacific. This is undertaken in collaboration with Dr. Yvonne Chamberlain of the University of Portsmouth. In 1999 two papers have been submitted for publication, and two more are nearly ready for submission.

Many genera of masterphoroid corallines are in desperate need of revision, with up to 70% of described species not having been reported or studied in a modern context. Gavin Maneveldt is currently working on the genera *Hydrolithon* and *Neogoniolithon* on a global scale. The alpha taxonomic work on *Hydrolithon* is nearly complete, and good progress has been made on *Neogoniolithon*. Work is about to begin on molecular systematics of these genera.

Several studies have been conducted on crustose coralline algae in South Africa, but most have been directed at the West Coast. Although some genera have been documented for the East Coast, many still need to be examined, and a reliable inventory and guide to the crustose corallines of the East Coast is still lacking. Taxonomic descriptions of Crustose coralline algae from the East Coast are being compiled, and compared with studies done in other locations of the world. This forms the M.Sc. project of Mark Rothman.

There is no reliable inventory and guide to the crustose corallines of the South Coast of South Africa, a different biogeographic region from the West and East Coast. Although we know a little about some intertidal species, the subtidal coralline flora is almost completely unknown. Taxonomic descriptions of Crustose coralline algae from the South Coast are being compiled, and compared with studies done in other locations of the world. This forms the M.Sc. project of Carmen Ras.

Management of biological diversity and conservation is being studied in a cooperative project by IOI India. The Research Project "Plant Genetic Resources: Formal and Informal Knowledge Systems, Institutional Interests and Sustainability" began in January 1999 and will continue until July 2000. This project is funded under the Canadian International Development Agency (CIDA) - Shastri Indo-Canadian Institute (SICI) Partnership Programme. It is a collaboration between IOI India and the Program of Studies in National and International Development (SNID) at the

Queen's University, Kingston, Canada. The total budget of the project is US\$ 33,000.

The objective of the project is to examine the present status of people's knowledge, knowledge systems, practices and community's support systems with reference to biodiversity management and conservation. Specific reference is given to particular ecosystem types and to the study of interaction between community knowledge and research institutions. This considers particularly publicly funded research in order to understand as well as strengthen such dynamics with regard to developing national and international policy for the conservation and management of Plant Genetic Resources (PGR).

The project activities include fieldwork for collection of primary data/information backed up by secondary research from published material. The work is being carried out by three interns and a research associate guided by the Project Research Team. A field area in the Eastern Ghats of Tamil Nadu, South India has been chosen for primary data collection. This is to be compared and contrasted with secondary information from a similar region in the neighbouring state of Karnataka.

Two issues of the project newsletter "People, Plants and Resources", dated April 1999, and July 1999 have been brought out and copies have been sent out to various individuals and organisations. The third issue came out in October 1999.

The Operational Centres are also addressing several other national and regional needs in their research. This is clearly part also of the research carried out in the Host institutions.

IOI China has implemented a research programme on harmonisation of National Legislation related to the Law and Regulations Governing Marine Affairs with UNCLOS. Social and economic issues associated with urbanisation in coastal areas are also being researched. As part of this project IOI China participated in the IOC and SOA workshop on coastal megacities, Hangzhou, China, 27-30 September 1999.

The problems of migratory fish stocks in the Pacific Ocean were highlighted at the PIM XXVII Conference by Dr. Sandra Tarte of USP, who has represented MSP and IOI-Pacific Islands at all of the multi-lateral high level negotiations on highly migratory fish stocks. A major report on the negotiations and their outcomes is in preparation, and will be published as an IOI-Pacific Islands report. Funding for Dr. Tarte's participation has come from the Canada-South Pacific Ocean Development Program, Phase II, while costs for publication of the report will be provided by IOI-Pacific Islands. Prof. Robin South and Joeli Veitayaki (currently at the Australian National University in Canberra, Australia) have published a major overview of regional arrangements and their impacts on the Pacific Island nations.

The IOI Headquarters has also contributed to research activities through representing IOI at some research oriented conferences,

e.g. in Greece, Italy, China, Singapore, with contribution of papers, as well as through publication of several papers and serving as guest editor for a special issue on the health of the ocean and marine science of the Ocean and Coastal Management Journal to appear in the fall of 2000.

## 6. Advisory Services

All activities of the IOI include some elements of provision of advice to users, including authorities and other organisations. The PIM Conferences represent a considerable advisory service, operating also as a think tank where new ideas can be ventilated and formulated into recommendations. PIM XXVII certainly resulted in many recommendations of an advisory nature to governments and organisations, as evidenced through the Fiji Declaration (Annex 2). The policy-oriented research results in advice on, inter-alia, ocean governance and coastal area management. An eminent example of this during 1999 was the attendance by the Honorary Chair and Founder of IOI, Professor Mann Borgese, at the Seventh Session of the Commission for Sustainable Development, and the related preparatory work which she did with several Governments. In particular the Government of Malta was very responsive and supportive of these efforts. This helped generate the result of the CSD session, recommending to the General Assembly through ECOSOC of a process of enhancing and vitalising the global ocean governance through the United Nations General Assembly. Professor Mann Borgese attended the first session of the related Open-ended Working Group in May-June 2000. It is to be noted that this breakthrough is, at least partly, the result of long-term awareness raising efforts. This was demonstrated through PIM XXVI, Halifax, November 1998, the resulting Halifax Declaration and the reference to this at the Second Oceans Workshop in London, December 1998 (see IOI Annual Report 1998-1999).

The IOI leadership seminar mechanism also provides advice and generates awareness. An example is the seminars in Jamaica at the International Seabed Authority for Government representatives. In 2000 the Authority is organising itself a seminar very similar to the one organised by IOI in August 1999. This shows that the awareness has penetrated and that the intergovernmental mechanism is picking up the issues for debate in its own machinery. This is similar to what happened at the CSD session in 1999.

The IOI is also through its interaction with other NGO's providing advisory services. In June 1999 a delegation from the Nippon Foundation and the Ship and Ocean Foundation, visited IOI Headquarters to obtain information about IOI, its work, priorities, staffing and vision. This consultation was part of the process through which the Nippon Foundation through the Ship and Ocean Foundation intends to establish a think tank to develop ocean-related issues, at national and international level. The visit at IOI Headquarters was followed by a visit at IOI Canada later in June 1999. The inputs and suggestions of IOI and the

model of IOI have certainly been helpful for the development.

Also other NGO's are working in partnership with IOI through the Operational Centres, and are benefitting from advice and suggestions.

The Women and Fisheries Network, headquartered in Fiji, has recently re-vitalised their activities and has identified important new areas of activities. IOI-Pacific Islands is currently in discussion with the network in order to identify specific aspects of their programme in which we can develop cooperative activities. Some of these fit well with the IOI focal area on women's issues.

The IOI-Pacific Islands is also cooperating with the World Wide Fund for Nature, in the area of marine conservation and coastal reef monitoring, both bodies benefitting from exchange of insights.

Advisory services are also provided to national institutions, directly or through the Host-institutions. Such interactions are also of a cooperative nature, and may generate projects and partnerships.

Through the efforts of DR. V. R. Muraleedharan, Department of Humanities and Social Sciences, IIT Madras, IOI India has secured a grant of US\$ 12,600 from the World Bank to conduct "A Critical Review and Documentation of Available Studies on Private Sector in Health in India". The study is for a period of six months starting from mid-August 1999 to mid-February 2000. The objective of the project is to document, collate and critically review the available studies on the private health sector in India to provide a database on available information on the private health services and financing and to identify the crucial areas for policy intervention.

The Project is seen as a beginning for IOI India to take up studies on the environmental health aspects of coastal communities. Proposals of funding agencies in this regard are on the anvil.

IOI India is also providing training in ISO standards so as to provide for abilities required for obtaining ISO certification.

IOI Japan has been conducting "Joint Research of IOI Japan and National Institute of Defence Studies on the Peaceful Use of Navies for Ocean Governance in the Asian-Pacific Region", for the past two years. Due to extensive curtailment of budgets, there has still not been a decision on continuation.

IOI Japan and IOI Costa Rica produced a Concept paper concerning "Learning and Recognising Traditions: Japanese and Costa Rican Young Fishermen Experience Exchange" at the PIM XXVI Conference and based on this agreement, Professor Fuse negotiated with Himi City officials. They agreed that on the condition that the final budget proposal would be approved by the City officials, the



model project on the Establishment of "The International Center of Traditional Fisheries in Himi City" and the Vitalisation of Local Fishing Communities, would be implemented. The proposal submitted has been funded for initiation of the project in mid-2000.

## 7. Cooperation

The IOI system cooperates extensively with other organisations and institutions. The very nature of the IOI with the creation of Operational Centres autonomous but part of a Host institution, in itself lays the foundation for such a cooperative approach. At the same time the identity of the IOI as an organisation is maintained, and many products are pure IOI ones. However, they are not normally borne in isolation - they are related or inter-related.

First and foremost is the cooperation and indeed linkages with the Agencies and programmes of the United Nations system. The IOI has observer status with UNESCO and its IOC, with IMO, UNCTAD, and with ECOSOC. WE have agreements on cooperation with UNEP, UNU and IOC. Besides this we cooperate with regional intergovernmental bodies of the UNEP Regional Seas Programme, with the UN Commissions on Economic Cooperation, and with bodies as ICES, PICES, IOMAC, and with many NGO's of a national and international nature, e.g. ACOPS, HELMEPA, Women in Fisheries Network, WIOMSA.

The Executive Director represented the IOI at the IOC Assembly, Paris, 29 June - 7 July 1999, and the IOC Executive Council session, Paris, 20-30 June 2000. The IOI is cooperating with the IOC in its TEMA programme, in the regional development of GOOS in the Caribbean and the Mediterranean, and in coastal zone activities.

In particular, the IOI was co-sponsoring the IOC-SOA International Workshop on Cities and Coasts: Challenges of Growing Urbanisation of the World's Coastal Seas, Hangzhou, China 27-30 September 1999. The IOI was represented by the Executive Director and the Director of IOI-India, who both presented papers at the Workshop. The Executive Director visited several institutions in China and explored various possibilities of an increased cooperation. These were considered at a final meeting at the SOA Headquarters. The Memorandum of Understanding between SOA and IOI was renewed and signed.

In this connection the Executive Director also visited IOI-Japan and institutions in Bangkok, Thailand: the UNEP Regional Coordinating Unit for the East Asian Seas programme and the Chulalongkorn University, and held discussions on cooperation. On the same mission he also participated, following invitation, in the International Conference on Navigational Safety and the Control of Pollution in the Straits of Malacca and Singapore: Funding and Managing International Partnerships, in Singapore 14-15 October 1999. This was organised by the Institute of Policy

Studies, Singapore and the International Maritime Organisation.

The IOI has been invited to be represented in an observer status at IMO meetings and at the 21st Consultative meeting of Contracting Parties to the London Convention 1972. The latter took place at IMO Headquarters, London, 4-8 October 1999, and the IOI was represented by Dr. Tanya A.S. Bowyer-Bower, Department of Geography, School of Oriental and African Studies, London, who is a member of the Planning Council. She presented a statement to the Conference which had been provided by the Executive Director. It is expected that IOI can continue to interact in this way with the Convention and support its implementation.

The Executive Director represented IOI at the IMO Assembly, November 1999; and at the 44th Session of the IMO Marine Environment Protection Committee, at IMO, London, March 2000.

The Executive Director has also provided information to UNESCO for the 30th General Conference of UNESCO, Paris, 26 October - 17 November 1999. The IOI has also signed the partnership agreement with UNESCO for the International Year for the Culture of Peace (2000), helped distribute information about this effort, and identified some of the activities as contributions.

Consultations have also been held by correspondence with HELMEPA with respect to the development of an IOI youth programme, following the agreement in principle to this by the June meeting. In accordance with the decision of that meeting, a menu of activities which could be undertaken in such a programme, from which the Operational Centres can choose the appropriate ones was provided to the Planning Council and Board meetings in November 1999.

The IOI was represented by the Director of IOI-Black Sea at the meeting of the IOC Regional Committee for the Black Sea, Istanbul, 4-7 May 1999. This generated a linkage between the IOI efforts in the Black Sea to generate cooperation as shown through the regional leadership seminar coordinated in September 1999, and the IOC regional cooperative efforts. This cooperation is further manifested through the provision from IOC of an automatic sea level recorder for Constanza harbour, as part of the MEDGLOSS network. This cooperation also involves the Mediterranean CIESM. Through IOI Malta we are also cooperating and supporting the development of Med-GOOS. The IOI provides for partial support to the MedGOOS Secretariat, and co-sponsored with IOC and others the MedGOOS meeting in Morocco, November 1999. IOI-Costa Rica cooperates with the IOC Sub-Commission for the Caribbean, IOCARIBE, and participation in the meeting of the Sub-Commission, in San Jose, Costa Rica, Spring 1999.

The IOI-Senegal Centre is involved in many national or regional programmes. It represented IOI at the 5th session of the IOC Regional Committee for Central and East Africa held at Dakar from the 5th to the 12th of May 2000.

The representative of IOI-Senegal informed the meeting of all the

achievements made by the Operational Centre, especially in the field of training on specific themes designed for researchers, administrators, decision-makers or academics.

The meeting noted the non-existence of a University graduating course in the WACAF zone. Only one Oceanographic Course was noted at Cocody University in Cote d'Ivoire. In this respect, the meeting noted with interest training seminars organised by the IOI-Senegal Operational in the WACAF Zone. Many countries from West and Central Africa have applied for participation in the only scheduled course for the year 2000, which is about major environmental problems.

The Operational Centre in Senegal is involved in all the modules of the Fisheries Information and Analysis System called FIAS/SIAP project (Statbase, Trawlbase, Fishbase, Ecopath, Ecosim, EcoSpace, SIG). The objective of the FIAS/SIAP Project is to help the six countries of the Sub-regional Commission for Fisheries (CSRP) to develop a pluridisciplinary information system on fishing, sea resources and ecosystems exploited in the sub-region covering the CSRP zone. These systems are to help these countries individually and collectively to better manage their fishing sector by securing them permanently economic efficiency, social privileges as well as biodiversity conservation. The project is financed by the European Union. The Operational Centre in Senegal is also cooperating with IUCN.

The cooperation with UNEP has continued, focusing on the GPA-LBA. Following consultations over 1998-1999, a Memorandum of Understanding was concluded in end of May 1999 with the United Nations Environment Programme GPA Coordination Office, in The Hague, on the establishment as a pilot project of a UNEP/GPA News Forum. This was achieved at the occasion of the Second NGO consultation on GPA Implementation, held at the Coordination office, 26-28 May, with IOI represented by the Executive Director. At the June 1999 meeting it was decided that IOI-Canada would take the lead in the implementation of the agreement. This has been carried out with the involvement of most of the Operational Centres. This has also generated some interactions with the relevant UNEP Regional Coordinating Units. Representatives of IOI-Canada attended the launch of the News Forum in New York at United Nations General Assembly Special Session on Small Island Developing States, September 1999, and had discussions with the UNEP Coordination Office on the future direction of the News Forum. IOI-Canada developed a proposal for a follow on version of the News Forum for 2000 as requested by UNEP. The follow on version has a much more focussed audience, objective, and range of content. It is also to be primarily an interactive Internet based management and communication tool for those in governmental and intergovernmental organisations who are directly involved in implementation of the GPA. The second MOU with UNEP continuing this effort toward the end of 2000 was signed in April 2000.

Cooperation with the private sector has materialised with the Swiss Reinsurance Company in Zurich, following the consultations

initiated in the Fall of 1998. The Executive Director concluded an agreement with Swiss RE on the first phase of the project to enhance the role of risk assessment and management in integrated coastal area management at a further meeting in March 1999. This specified 3 actions: a seminar, which was held at the Bermuda Biological Station for Research, in cooperation with the Station, 14-16 February 2000; the proceedings will be published; the development and testing of a five-day training module for mid-career civil servants; this has been implemented at the course on UNCLOS and UNCED, by IOI-Canada, Halifax, Summer 1999; material for public awareness creation and information; this is in the process of being done, to be reviewed in fall of 2000. At the June 1999 meeting it was decided that IOI-Canada would take the lead in the implementation of the project, which has been carried out to full satisfaction of all concerned.

Interactions and consultations are maintained through the Operational Centres and the Headquarters with UNDP, UN-DOALOS in the Train-Sea-Coast project, the World bank, and GEF Secretariat, which was represented in the PIM XXVII Conference. Cooperation is also close with the International Seabed Authority in Jamaica, represented at PIM XXVII by its Secretary-General.

Interactions with Alumni are being pursued through refresher courses, in Canada; China, where an IOI-China Alumni book was prepared; through the preparation of an IOI Alumni Book; and provision of Newsletter. A central data list of known Alumni is at Headquarters. IOI-Canada has developed an Alumni interactive web site to serve Alumni of the IOI-Canada training programmes. The site is being steadily expanded and management and use of the site will gradually be turned over to individual class year managers/representatives. The site allows for file sharing, list development and maintenance, discussion groups, a note board, a calendar, the conducting of polls, posting of pictures, and the development and editing of shared documents such as training syllabi. Participants from the training programmes from 1997, 1998 and 1999 have been contacted to join the site. Earlier classes will be contacted as more and more e-mail addresses are obtained.

Enhanced networking is also being pursued through participation with other NGO's and institutions, which can result in provision also of additional resources. The Director, IOI India participated in the Workshop on 'Sustainable Strategies for a Changing Earth' organised from 13 to 17 September 1999 by the Centre for Scientific Research, Auroville, India. The workshop provided information of applied sustainable practices that have evolved through a process of trial and error over many years with the international community of Auroville. The topics explored were afforestation and restoration; cost effective shelter; biogas, wind and solar technology; affordable ways to recycle waste water; sustainable practices within the community and individual homes; self-sufficiency and creativity; and networking with others.

The Auroville community is interested in offering such workshops

jointly with IOI India. One such workshop, on a self-sustaining basis, is planned for the year 2000 with a budget of about US\$ 7500.

Cooperation with the Commonwealth Science Council and the Commonwealth Secretariat has been initiated through the Executive Director.

The IOI web site <http://www.IOInst.org> is being maintained and managed by IOI-Southern Africa, with the financial support provided from Headquarters.

Individual web sites are being maintained by several Operational Centres.

The joint IOI-Pacific Islands and MSP Newsletter PASIFIKA was published twice in 1999, in June and December. The publication has benefitted considerably from the editorship of Mr. Fred Mills, a CUSO (Canada) Cooperant, and from seed funding provided by IOI-HQ.

Mr. Geoff Cleave (USP Library IT Services expert) and Dr. Antoine de Ramon N'Yeurt (MSP Research Fellow) were responsible for the IOI-Pacific Islands (including PIM XXVII) and the MSP Websites, respectively. These websites are widely accessed globally and have done a great deal to promote IOI-Pacific Islands and the MSP programmes and activities.

## 8. The Organisation

The IOI is a living organisation, which is evidenced through several organisational developments during the reporting period.

The Operational Centres, the Affiliates, and the Host institutions can be seen as two complementary systems, in that they are connected and supposed to be mutually reinforcing. Thus we can see an international and a national part. Through the Host institutions access can be obtained for IOI to other national institutions, national authorities, to national and local non-governmental bodies, and to the private sector. Examples of this are seen for most of the Operational Centres. Through the IOI Operational Centres the Host institutions can obtain access to the whole network of IOI, to the partners and other international organisations and non-national private sector partners. This line of enlarging contacts and partnerships is not seen so much as the other one. This is an opportunity which ought to be pursued more actively by the Operational Centres. Successful actions in this respect are seen in Canada, India, and the Pacific Islands and may well be the driving factor behind the wish to establish some of the new Affiliates.

For IOI India the new arrangement with the host institution (IIT Madras) set up in 1998 continues to work well. IOI India functions as a division of the Foundation for Sustainable Development (India) set up by IIT Madras. A Centre for

Sustainable Development (CSD) is the other division of the Foundation. While this CSD works with Indian industries on environment-related projects, IOI India concerns itself with the sustainable use and development of all natural resources (including the ocean and the coastal zone) and with community development.

The IOI Canada Advisory Council has had three meetings since PIM XXVI at which they endeavoured to lay out an agenda of action for the IOI Canada and the Atlantic Region. At the meeting in October 1999, they approved two new initiatives and began discussions on the details of a number of others. This includes a possible collaboration with the Canadian Association of the Club of Rome, The Royal Society of Canada and the Canadian International Law Association.

The two new initiatives are a series of awareness workshops for Canadian governmental representatives on current ocean issues beginning with a workshop on Seabed issues like those delivered in Jamaica to the ISBA. The other initiative is a programme to create awareness of ocean issues within the Canadian media. This programme is seen as a possible collaboration with the School of Journalism at King's College in Halifax.

The Oceans Institute of Canada is a Canadian NGO sharing the same building as IOI Canada at Dalhousie University. OIC has a very similar mandate to IOI Canada except that it fulfills its mandate on a strictly project management basis. OIC is a membership-based organisation with many of its members and Board of Directors also being members of the IOI Advisory Council.

The OIC has come to the end of a large five year CIDA Sustainable Ocean Governance project and has not succeeded in getting adequate follow on projects to sustain itself. IOI Canada offered to merge with OIC as a way to solve this situation and also eliminate the local confusion over the identity of IOI and OIC and the perceived competition in activities and fund raising.

IOI Canada's merger proposal was generally well received and negotiations on the details of a merger were started in September 1999. The IOI Canada Advisory Council has given the merger its approval in principle and has agreed to a basic format for a new merged organisation. The OIC Board of Directors approved the merger and put the offer before its membership in November 1999. Negotiations have since been pursued.

The restructuring and renaming of IOI South Pacific has proceeded as planned. From January 2000 the name is IOI Pacific Islands. Its Operational Plan was approved by the Advisory Board in September 1999. The Director, Professor Robin South will remain for the time being. The Operational Centre now has a clearly identified "team" approach to its operations, and clearly identified programme areas that are not in conflict with, but are complementary to, those of the Marine Studies Programme.

The restructuring is also part of a large Operational Plan 2000

approved by the Advisory Board of the Marine Studies Programme. The IOI Pacific Islands will maintain an identity with its own Advisory Board, separate from the MSP Advisory Board. The two Boards will meet jointly when appropriate and required.

The Director of IOI Senegal has initiated discussions with the Ministry of Foreign Affairs to seek recognition of IOI Senegal as an international non-governmental organisation, in order to then also obtain the related advantages.

The Memorandum of Understanding with the State Oceanic Administration of China as host institution for the IOI China Operational Centre has been renewed, and so has the Memorandum of Understanding as regards the IOI Black Sea Operational Centre, with related formal approval by the relevant authorities. Through the leadership seminar organised by IOI Black Sea there also resulted a 13 points protocol identifying actions required in order to improve the conditions of the Black Sea, including the establishment of a Black Sea International Scientific Committee. The Operational Centre is largely responsible for the follow-up and implementation, in cooperation with other bodies.

The very good experiences with the Ocean Science and Research Foundation in Zurich have continued. The related programme support which has been obtained after formal application and submission of proposals is under-writing actions of Headquarters and IOI Canada. The seed funds obtained through a private donation and provided to Headquarters have proved of very great value for the cohesiveness and corporate profile of IOI as a whole.

Another substantial private donation provided to the OSRF in Zurich, dedicated to enhancement of participation of women, is underwriting the establishment of the IOI Women and the Sea programme. One component of this is the Danielle de St. Jorre scholarship in honour of the memory of Mrs. Danielle de St. Jorre of the Seychelles, who was also associated with IOI as a member of the Governing Board. The first recipient of the scholarship has been nominated by the Seychelles. In future the AOSIS will make the nominations on the basis of applications, it being understood that the recipients preferably shall be nationals of Small Island Developing States. 8

The programme support from the Canadian International Development Agency is continuing with a new grant approved for the period June 1999 to March 2002. A final report on programme implementation through the previous 3 year grant was submitted from Headquarters early 1999. The provision of the support from CIDA is gratefully acknowledged, as is the excellent cooperation which we enjoy with our CIDA contacts.

The annual meetings of the Planning Council and the Governing Board were hosted by IOI Pacific Islands in Fiji, 4 to 6 November and 6 to 7 November 1999, respectively. The implementation and follow-up of the decisions and recommendations made in 1998 were reviewed on basis of the report of the June 1999 meeting of the

Executive Committee and Operational Centre Directors, and reports from the Executive Director and Operational Centre Directors. It was noted that follow-up and implementation was pursued and that many results had been achieved.

The plans and budget for 2000 were reviewed and endorsed as framework for actions. It was, however, noted that all funds required for implementation were not secured. Greater vigour in fund raising efforts were requested. Preliminary plans for 2001 were discussed.

Several of the proposed new initiatives resulting from the June 1999 meeting and workshops were approved, and their implementation initiated through related decisions. Several other institutional matters were also addressed, in particular the evolving role of the Board.

It was noted that efforts are being made to increase the awareness about IOI in wider circles. The Annual Report of IOI for 1998-1999 was welcomed, as were the renewed publication of the Newsletter 'Across the Oceans', and provision of brochures and newsletters from several Operational Centres.

The strengthening of IOI system-wide projects was very much welcomed and encouraged. The experiences are basically positive. These efforts bring out the coverage and deliverables of the IOI as a whole. The local-national efforts of Operational Centres with their partners, are given a wider communication and experiences are transferred to regional and global levels through IOI itself as well as the cooperation. Headquarters and Board Members are serving as facilitators and communicators.

The IOI system covers natural and social sciences, legal, cultural, educational, economical, social and institutional matters concerning ocean governance, and public awareness creation.

The IOI can prepare and deliver dedicated and directed training courses of various lengths, for practically all levels and sectors.

The IOI system can provide in-depth studies of interactions between various international programmes and processes. Examples are the relations between UNCLOS and UNCED and between these and other global programme developments, and efforts in the United Nations, in particular the Agenda for Peace and possibly the Culture of Peace programme of UNESCO.

The IOI system has experiences in co-management, in management studies and grassroot level actions regarding coastal and ocean resources management, at local, regional and global level. The IOI is doing community based work involving many sectors of society; is dealing with regional cooperation, and has a global inter-regional association through the network and through work with the United Nations system. The IOI works on developing coordination between local and national actions through the co-



management principle. The IOI provides for and has an institutional framework which is: comprehensive; consistency (compatibility between various levels of governance); trans-sectoral and/or multidisciplinary; participational, bottom-up rather than top-down. The IOI includes through its network, a wide range of expertise and experience. Add to this the connections to the Host institutions and the potential coverage becomes even wider, not only as regards the subjects but also with respect to the environmental interactions, e.g. ocean, land, atmosphere, society.

The IOI products apart from trained people include, inter alia, the publications, the research results, the training courses, the special studies; workshops, seminars, conferences and proceedings.

The IOI network can be used to solicit and disseminate information. As examples we may refer to the efforts in relation to the GPA-LBA News Forum, and the risk management project.

The Governing Bodies took note of the rather extensive cooperation which is going on between IOI and the United Nations system as well as with other organisations, at national, regional and global level. They stressed the importance of this, and the need to continue along this path while maintaining the integrity and identity of the IOI. The need for selectivity and focus was, however, also realised by the Board.

The lists of members of the IOI Governing Board, Executive Committee and Planning Council are provided in Annex 4, and the list of its Directors of Headquarters, Operational Centres and Affiliates in Annex 5.

The mid-term meeting of Operational Centres and the Executive Committee was held in Malta, 5-8 June 2000. The meeting reviewed the programme implementation, finding activities over the whole range of programmes. The IOI-VU specification by the Working Group was reviewed and several suggestions made.

The implementation of the first phase of the risk management in coastal areas project was recorded, and the indication that Swiss Re was interested in continuation. The successful initiation of the Women and the Sea programme and the Youth Programme was very encouraging. The meeting reviewed plans and budgets for the years 2001 and 2002, constituting the initiation of the work programme and budget to be presented to the Board in December 2000.

Financial information is provided in the form of an audit report and financial statement (Annex 6), and overview budgets (expenses) for 1999 and 2000.

International Ocean Institute

Mission Statement

1. The purpose of the International Ocean Institute is to be guided by principle of the Common Heritage of Mankind and promote education, training and research to enhance the peaceful uses of ocean space and its resources, their management and regulation as well as the protection and conservation of the marine environment.
2. Fundamental to the IOI System will be:
  - . emphasis on bringing direct benefits to people, especially the poor and other vulnerable sections;
  - . safeguarding the ocean environment and its ecosystems;
  - . creating trust, understanding and co-operation among the institutions participating in the IOI System.
3. To this end the IOI System will:
  - . build mechanisms for sharing information and experiences;
  - . develop effective and innovative solutions to the problems of megacities and coastal villages using appropriate high-technologies and establishing appropriate institutional mechanisms;
  - . train those directly involved in the oceans in integrated management systems and the funnelling of benefits to the poor;
  - . help raise resources for the purpose.
4. In implementing these tasks the IOI System will identify gaps and seek to find collaborative solutions to meeting the critical needs through existing and, where necessary, new programmes.

## INTERNATIONAL OCEAN INSTITUTE

The International Ocean Institute (IOI) was created to promote education, capacity-building, and research as a means to enhance the peaceful and sustainable use and management of ocean and coastal spaces and their resources. The IOI was founded in 1972 by Professor Elisabeth Mann Borgese as an independent, non-profit non-governmental organisation headquartered in Malta. The IOI Network currently consists of twelve Operational Centres and two Affiliate Centres spanning the globe. The Headquarters is based in Malta under an agreement between IOI and the Government of Malta.

For more than two decades the IOI has stood at the forefront of organisations in addressing these issues with the concern of future generations through an interdisciplinary and comprehensive approach. The IOI has also prepared working papers for the Third United Nations Conference on the Law of the Sea (UNCLOS III: 1973-1981), the Preparatory Commission for the International Seabed Authority, and for the International Tribunal for the Law of the Sea (1982-1994) as well as for various governments. It has provided consultants to UNEP, the World Bank, the United Nations Industrial Development Organisation (UNIDO) and the Asian-African Legal Consultative Committee (AALCC).

### MISSION

The mission of the International Ocean Institute is to promote education, training and research to enhance the peaceful uses of ocean space and its resources, their management and regulation as well as the protection and conservation of the marine environment, guided by the principle of the Common Heritage of Mankind.

### GOALS

The goals of the IOI are to:

1. Enhance the ability of developing countries to develop and manage their own resources sustainably for their own benefit, to establish self-reliant development, and help with education and eradication of poverty from community to national level;
2. Enhance abilities of self-reliant development at community level, taking into account the diversity in developing as well as developed countries, including control and protection of natural resources for future generations; the eradication of poverty in coastal areas; and mitigation of the adaptation to natural hazards;
3. Enhance participation of people, in particular women, in development projects which take into account environmental issues;

4. Establish sustainable mechanism able to tackle inter-related social, environmental and economical issues in an integrated fashion.

#### APPROACH

The approach by which the IOI gradually achieves its goals include:

1. Strengthening of institutions through capacity building, sharing and dissemination of information, and generating incentives and contact between local and national authorities;
2. Establishing partnerships and networks with the IOI Operational Centres, other NGOs, donors and between authorities and communities;
3. Increasing awareness and understanding of the sensitivity and the importance of the Coastal Zone and the Marine environment of sustainable development, through demonstrations, training, provision of educational material and information to local NGOs, schools and authorities;
4. Encouraging self-reliant development of sustainable livelihoods by means of aquaculture, farming, value added processing of resources, protection of water resources and application of traditional and new technology;
5. Emphasising decentralised decision making to local authorities and communities, and implementation of agreements, regulations, and development projects with the involvement of the private sector; and
6. Increasing the abilities at local and national level to transfer and apply scientific (social and natural sciences) knowledge and information, from generators to users, through hands-on training, case studies, and demonstration sites; and providing incentives through linkages to other sites, and to international agreements and commitments.

#### ACTIVITIES & SERVICES

The IOI's activities include training projects, information dissemination, conferences, research and publications.

- **Training** of hundreds of decision-makers and professionals, mainly from Developing Countries, through short and long duration interdisciplinary courses in ocean and coastal management;
- **Development work** among coastal communities with the objective of improving their livelihood while restoring and preserving coastal ecology;
- **Information dissemination** to NGOs and coastal communities through the global IOI networks and the IOI Websites;
- **Organisation** of the annual PACEM IN MARIBUS (Peace in the

- . Oceans) Conference and other Seminars and Workshops;
- . **Research** on a variety of ocean-related areas such as international and regional agreement and policies on oceans and the coastal zone; on regional and sub-regional co-operation and on scientific and technological approaches to sustainable management of living and nonliving marine resources;
- . **Education** evaluation, transfer, and evaluation of the effects thereof; and
- . **Publication** of the Ocean Yearbook in collaboration with the Dalhousie University, Canada; Across the Oceans, the IOI's Newsletter; as well as directories of experts, funding opportunities, and potential clients for IOI services. Regional operational centres also publish their own newsletters, research papers and reports;
- . **Services** include advice, consultancy, information regarding ocean and coastal environments.

### IOI OPERATIONAL CENTRES

The IOI's scope and presence is truly international with twelve Operational Centres and two Affiliate Centres around the globe and with several new Centres or Affiliates in the development stage. The current Centres and their host institutions are:

- . IOI-Headquarters, based in Malta;
- . IOI-Canada, at Dalhousie University, Halifax, Canada;
- . IOI-China, at the National Marine Data and Information Service, State Oceanic Administration, China;
- . IOI-Costa Rica, at the Universidad Nacional, Costa Rica;
- . IOI-Pacific Islands, at the University of the South Pacific, Fiji;
- . IOI-India, at the Indian Institute of Technology, Madras, India;
- . IOI-Japan, at Yokohama City University, Japan;
- . IOI-Malta, at the University of Malta, Malta;
- . IOI-Black Sea, at the National Institute for Marine Research and Development 'Grigore Antipa', Romania;
- . IOI-Senegal, at the Centre de Recherches Oceanographiques de Dakar - Thiaroye (CRODT), Senegal;
- . IOI-Southern Africa, at the University of Western Cape, South Africa;
- . IOI-Eastern Africa, at the Kenya Marine and Fisheries Research Institute (KMFRI), Mombasa, Kenya;
- . IOI-Ukraine, at the Institute of Biology of the Southern Seas (IBSS), Sevastopol, Ukraine;
- . IOI-Russia, at the P.P. Shirshov Institute of Oceanology, Moscow, Russia.

Each Centre is autonomous, uniquely identifying its own regional priorities for research, capacity-building and development, while benefiting from the support of the overall IOI network. This regional approach to research and capacity-building enables the Institute to draw upon the different strengths of the Operational Centres to cater to the needs identified within each region. Each Centre is run by a Director, generally supported by a small

staff with a large number of experts and volunteers on call. The directors are members of the IOI's Planning Council, which meets annually.

### LOOKING AHEAD

The IOI network provides a flexible mechanism with a global coverage through several centres. It has a governing and co-ordinating structure that generates synergism and strategic planning of the network of semi-autonomous nodes. This cohesive and comprehensive mechanism is capable of co-operating equally well with inter-governmental systems and the private sector.

Growing steadily and responding to global changes, the IOI network is now aiming at a multiplier effect to its spectrum of activities. It plans to move from direct training to training-the-trainers; from direct implementation to projects of offering advisory and consultative services; from a network of centres to a network of clusters and affiliates. IOI is also developing online and distance education systems. IOI is the future of the oceans.

Website: <http://www.ioinst.org/>  
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## PACEM IN MARIBUS XXVII INTERNATIONAL OCEAN INSTITUTE

November 8<sup>th</sup> – 12<sup>th</sup>, 1999. Suva, Republic of the Fiji Islands

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# THE FIJI DECLARATION ON ISLANDS IN THE NEW MILLENNIUM

The 187 participants from 30 countries gathered in Suva, Fiji on November 8 – 12<sup>th</sup>, 1999 to celebrate Pacem in Maribus XXVII, have agreed on the following conclusions and recommendations.

## CONCLUSIONS

Peoples of the Pacific islands are custodians of some thirty-three million square kilometers of the Pacific Ocean, approximately one twelfth of the Earth's ocean space. Yet the twenty-two countries and territories, with a total population of almost seven million occupy less than 5,000 square kilometers of this vast space. The Pacific Island peoples, whose intricate knowledge of navigation and of their ocean and coastal environments is woven into the very fabric of their culture and language, have settled the Pacific Islands over the last three-and-a-half thousand years. At no time in the past have they faced greater challenges and opportunities than those prevalent on the eve of the third millennium.

The theme for this Conference, *PACEM IN MARIBUS XXVII* was— *Oceans in the New Millennium: Challenges and Opportunities for the Islands*. The Conference examined challenges and opportunities for the world's island states since the United Nations Conference on Environment and Development (UNCED; 1992) and the Barbados Declaration (1994), both of which have enormous implications for the small island developing states (SIDS) world-wide, and specifically for the SIDS of the Pacific. At the dawn of the new millennium SIDS are faced with many challenges and opportunities; challenges, some of which are beyond their control, and opportunities which may give hope for their future. Burgeoning human population, pollution of inshore waters, overfishing, unregulated coastal development, climate change and potential sea-level rise threaten the peoples' livelihoods and, indeed, the very survival of their fragile island states.

### *Boundary Issues in the South Pacific*

For the island states, their EEZs represent their most significant sources of future wealth and security. As Parties to UNCLOS, they have an obligation to survey their EEZs. Those states with EEZ boundaries that still need to be delimited should enter into negotiations with their neighbouring states as soon as practicable with a view to reaching agreement on finalised boundaries. The EEZ regimes under UNCLOS also form the framework for negotiation of agreements on the management and conservation of South Pacific tuna stocks, which supply 50 per cent of the world's canned tuna market. Pacific Island states have the right to participate in the harvest of the resources and to expect other participants to ensure that the total harvest is sustainable, and that stocks are protected. Island states have expressed concern over the transboundary shipment of hazardous, toxic or high level radioactive waste.

### ***Revitalisation of the Regional Seas Programme***

There is a need to revitalise the Regional Seas Programme in line with major changes in the UN system and to ensure its responsiveness to regional priorities. Current efforts in this direction by UNEP under the leadership of its Executive Director Dr Toepfer, are most appreciated. The sectoral approach needs to be changed to a cross-sectoral approach that integrates land, water, and ecosystem management, and the overriding concept of sustainable development needs to be incorporated. The focus needs to be placed on individual states in adopting policy, institutional, and legal reforms necessary to implement the sectoral, integrated approach. For the island states, there is also a need to develop regional marine technology ventures where appropriate technology development and transfer can be facilitated. Human capacity development and institution building must underpin any such technology transfer. The Pacific Island states have demonstrated a high degree of success in regional cooperation in the higher education sector. The University of the South Pacific, which manifests this regional cooperation, provides a ready base as well as excellent prospects for a regional centre for marine scientific and technological research and development, as mandated under UNCLOS.

### ***Traditional Marine Tenure and the Empowerment of Resource Owners***

Coastal resources in most island states are under various forms of traditional stewardship. With the advent of the cash economy and the imposition of inappropriate 'modern' resource management systems, there is an urgent need to develop co-management mechanisms in which the traditional owners, especially women, in partnership with other major social development factors must play a key role in the sustainable management of their resources.

### ***International Seabed Authority and Deep Sea Mining in the South Pacific***

Deep sea mining has the potential to be a major issue for SIDS, and a number of the South Pacific states have valuable mineral deposits within their territorial waters and EEZs. Island states could play a major role in the development of mechanisms whereby their people will benefit from the long-term benefits of deep-sea mining within their EEZs. Most SIDS lack the capacity to engage in seabed mining individually. One of the major responsibilities of the International Seabed Authority is to see to it that developing countries, including SIDS, are enabled to participate in these activities and share the benefits. In particular it is very important that regional organisations play a coordinating role in offshore mineral development. Although Pacific Island states have mineral potential, they lack offshore mineral policy and legislation which should be implemented. The importance of marine scientific research in the knowledge gathered so far and the part that it will play in the future should be highlighted.

### ***The Oceanic Environment***

Ocean observation systems are important in the vast ocean areas surrounding SIDS. These ocean systems drive the world's climate, and in turn the SIDS are highly vulnerable to the long-term effects of climate change and sea level rise. The frequency of cyclones and El Niño-Southern Oscillation are changing, and Ocean Observation Systems as a means of improving our understanding of the world's climate are important. While SIDS have little capacity for participation in ocean observation systems it must be recognised that they have the right to participate. There is a need to find mechanisms whereby they can participate and benefit from them and the results must be deposited in the region.



### ***Regional Security***

SIDS have little capacity for surveillance and enforcement of their rules and regulations in their vast EEZs and continental shelves. This problem can only be solved through enhanced cooperative monitoring, surveillance, and control.

### ***Disaster Preparedness***

SIDS are particularly vulnerable to natural and human induced disasters. Risk management and disaster preparedness and mitigation are integral in integrated ocean and coastal management. They should be pursued both on a regional, national and community basis.

### ***Marine Biodiversity and Bioprospecting***

SIDS are custodians of some of the world's most important biodiversity in their marine ecosystems. Their obligations towards the protection of this biodiversity are a priority under the United Nations Convention on Biological Diversity. In exploiting their tuna resource, island states need to ensure conservation of marine biodiversity by issuing licenses for equipment that avoids death of by-catch species. Since most of the coral reefs are under the stewardship of the people there is an onus placed upon them to ensure their protection for future generations. Bioprospecting of tropical marine organisms is a fast growing trend, with developed states seeking discoveries of biologically active compounds from marine organisms of SIDS. The island peoples are seeking mechanisms whereby they can protect their intellectual property rights, so they can benefit from them in a sustainable manner.

## **RECOMMENDATIONS**

*PIM XXVII recognises the pivotal role played by the SIDS in their individual and collective roles in the sustainable development of their coastal and ocean resources. It is recommended that:*

1. SIDS should strengthen their collaboration in the development of regional and national strategies necessary for the implementation of the post-UNCED Agreements and Conventions to which they are Parties, and to the principles contained in the Barbados Programme of Action.
2. Human resources development in the marine sector continues to be a priority for the foreseeable future. Global, regional and national organisations should continue to develop appropriate training with the goal of rendering SIDS self-sufficient in human resources in the marine sector. The experience of IOI and in particular the results of the capacity building and training programmes carried out by IOI operational centres, may be appropriate in the implementation of these recommendations.
3. Marine scientific research should be pursued in a cooperative mode, and efforts in basic education on the marine environment should be strengthened.

*For the Pacific SIDS it is recommended that:*

4. They intensify coordinated regional and national marine awareness activities that involve all components of society.
5. The South Pacific Forum, through the Council of Regional Organisations of the Pacific (CROP) Marine Sector Working Group (MSWG) and the IOI-South Pacific Operational Centre develop an Oceans Policy for the Pacific Islands, which can be adapted to ocean policy development at the national level.

*Recognising that their EEZs represent a significant source of future wealth and security of SIDS, it is recommended that:*

6. SIDS which have the potential to claim extended continental shelf beyond the 200 miles should, bearing in mind the ten-year period established by UNCLOS, undertake the lodging of claims for these boundaries. Coastal states should move forward rapidly with the delineation of the baselines from which the various jurisdictional zones under UNCLOS are measured and deposit the appropriate charts and list of co-ordinates with the United Nations. Technical assistance should be sought from developed states to complete the necessary surveys within the given time frame.
7. Individual states be responsible for promoting the mapping of the boundaries of their EEZs.
8. A precautionary approach be taken to the management of deep-water fisheries, including conservation of marine biodiversity through routine utilisation of techniques that avoid by-catch losses and the incorporation of these techniques into license agreements with distant fishing nations.
9. Through the South Pacific Forum Fisheries Agency SIDS cooperate in enhancing mechanisms for joint surveillance and enforcement.

*For the Pacific SIDS it is recommended that:*

10. The Pacific SIDS establish procedures for the expeditious implementation of the consent regime for marine scientific research in accordance with the UNCLOS provisions, and adopt international or regional models (e.g. the UN model guidelines on marine scientific research, and the SOPAC guidelines in the Soons report). The regime should take into account the interests of the coastal state in having its nationals participate in the research and obtaining research data and samples in conducting marine scientific activities in the EEZ and on the continental shelf of that state.

*Recognising that there is a need to revitalise the Regional Seas Programme in line with major changes in the UN system, it is recommended that for the Pacific SIDS:*

11. The South Pacific Regional Environment Programme's role be strengthened to facilitate increased participation in the Regional Seas Programme to promote regional cross-sectoral approaches to ocean and coastal management, and regional implementation of the Global Programme of Action, based on local and national actions. The role should also include assistance to each island state in adopting policy, institutional and legal reforms to implement the new cross-sectoral approaches to land, water, and ecosystem management.
12. The Pacific SIDS establish a mechanism for the development of an appropriate marine technology centre, dedicated to relevant technology transfer from the developed to the developing world, addressing the needs for implementation of international agreements.

*PIM XXVII confirms that there is an urgent need to develop co-management mechanisms in which the traditional owners in partnership with other major social development factors can play a key role in the sustainable management of their resources. It recommends that:*

13. Cultural and traditional aspects be incorporated into the techniques used to manage and protect marine resources, and these techniques be built into baseline surveys.
14. Existing and historical information from local fishers, who live and work around shallow-water areas be documented and assembled for use by scientists and management and regional agencies assume responsibility for assembling and disseminating this information.
15. New management strategies be developed which draw upon the foundations of traditional use and practices and incorporate the understanding and procedures developed through relevant science and technology, to address stresses on coastal ecosystems. These strategies should consider, *inter alia*
  - ◆ Pollution from sewage, fertilisers, biocides, toxic wastes, oil spills, solid wastes, freshwater runoff and other land-based sources of pollution
  - ◆ Increased human population resulting in greater demands on marine resources
  - ◆ Siltation due to soil erosion from inappropriately conducted land use practices (agriculture, forestry, mining, road-building, site clearance)
  - ◆ Over-exploitation of coral reef resources (for example commercially valuable species such as bêche-de-mer, giant clams, trochus, certain fish and shellfish, live coral and ornamental fish harvesting for the aquarium and tourist trade, mining coral heads for construction, subsistence fishing pressure)
  - ◆ Destructive fishing and collecting methods (poisons, explosives)
  - ◆ Land reclamation (including mangrove and reef flat destruction), inappropriate coastal protection works, and unsound mariculture practices
  - ◆ Coastal and marine development projects progressing without environmental impact assessment (EIA) or with inadequate EIAs
  - ◆ Channel blasting and dredging activities
  - ◆ Mining of beach and reef materials
  - ◆ Coastal erosion and accretion
  - ◆ Tourism activities and related developments
  - ◆ Military testing, training and dumping (including nuclear testing and munitions disposal)
  - ◆ Catastrophic events such as tropical cyclones, volcanic eruptions, earthquakes, tsunamis, coral bleaching, crown-of-thorns starfish infestations, severe El Niño-Southern Oscillation (ENSO) events, and possible climate change and sea-level rise.
16. Co-management systems include insurance companies through their experts in risk management and disaster preparedness and mitigation.
17. All traditional resource owners and users, including women and young persons, should be involved in the planning, decision-making and implementation of appropriate co-management regimes in the coastal environment.

*PIM XXVII recognises that deep sea mining has the potential to be a major issue for the SIDS, and recognises the responsibility of the International Seabed Authority to enhance the participation of developing countries, including SIDS, in activities relating to seabed mining and to assure them of their equitable share of the benefits, and recommends that:*

18. Measures be taken to avoid impacts of offshore mining on the marine environment
19. Recognising the unique nature of the biota associated with active hydrothermal zones, activities of marine scientific research and industry should ensure that there

is an adequate understanding of the communities and the impacts of any associated mineral exploration and exploitation.

20. The collection of baseline environmental data be a condition of any exploration licence.
21. Coastal states adopt a proactive approach to all significant decision making activities related to environmental concerns respecting offshore mineral exploration and exploitation.
22. SIDS consider taking regional action to ensure that they obtain equitable benefits from foreign access to minerals in their EEZ.
23. Comprehensive offshore mineral policy and legislation should be developed by states.
24. The Seabed Authority should be encouraged to keep up with scientific discoveries and technological developments and adjust the scope of its activities to a changing reality.

*PIM XXVII recognises that ocean observation systems are important in the vast ocean areas surrounding SIDS. A Pacific Global Ocean Observing System (PacificGOOS) was approved by the UNESCO/IOC Assembly in 1997, and by the South Pacific Applied Geoscience Commission's Governing Council in 1997. Important beneficiaries of PacificGOOS are fisheries, coastal management, and weather and climate forecasts. SIDS have little capacity for participation in ocean observation systems, and need to find mechanisms whereby they can participate and benefit from them. It is recommended that:*

25. An inventory be made of GOOS related data being collected in the region by national and regional organisations, and by states and organisations outside the region, to facilitate development of a GOOS strategy.
26. Priority be given to increase observation activities aimed at improved weather and climate forecasting, sustainable and financially beneficial fisheries management, sustainable coastal management and at reducing risks from extreme climate events.
27. Awareness building and training programs be established to support PacificGOOS covering monitoring, development and use of end products, data management and modelling using existing arrangements where possible, such as existing regional organisations, the National Tidal Facility training activities and the proposed Asia Pacific Network workshop on developing climate indicators for extreme events.

*PIM XXVII recognises that SIDS are custodians of some of the world's most important marine biodiversity. The island peoples are seeking mechanisms whereby they can protect their intellectual property rights, and whereby they can benefit from them in a sustainable manner. It is recommended that:*

28. In accordance with the UN Convention on Biological Diversity, SIDS with the assistance of relevant regional organisations, should develop national regimes governing access to marine genetic resources, in order to prevent appropriation of their knowledge and genetic resources.
29. The biotic resources in the coastal zones of SIDS, including their EEZs, be documented.
30. Human resources development in marine biodiversity and marine bioprospecting be a priority for SIDS. It should focus on training in marine systematics so that people will better understand the nature of their genetic resources and be able to better develop measures for their conservation and sustainable use.

31. Priority be given to documenting rapidly disappearing traditional knowledge of marine biodiversity.
32. Pacific Island states need to implement their National Environment Management Strategies developed in preparation for UNCED.
33. There is a need for a regional policy on Marine Biodiversity Research and Bioprospecting.
34. The establishment of Marine Protected Areas must be a priority for all SIDS in order to conserve coastal biodiversity.

*PIM XXVII emphasises that;*

35. In all these action areas existing regional cooperation mechanisms be used in harmony with local and national authorities and NGOs. International NGOs such as the IOI may be used as facilitators or independent advisors when required and appropriate.

Statement by  
Elisabeth Mann Borgese,  
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at the first session of UNICPOLOS (May-June 2000)

We consider the establishment of UNICPOLOS as a breakthrough event. A forum such as UNICPOLOS is needed if the closely interrelated problems of ocean space are really to be considered as a whole. If its potential is fully utilized, UNICPOLOS may constitute one of the major building blocks of a system of ocean governance that reaches from the level of the local coastal community through those of the State and the Region to the level of the United Nations. Such a system, comprehensive, coherent, participatory, and bottom-up not top-down, was already envisaged in the Brundtland Report and spelled out in some more detail in Agenda 21. We see bits and pieces of the system emerging, empirically, at every level. At the level of the United Nations it is now universally recognized that it is only the General Assembly, with its universal membership and broad mandate that is capable of considering the problems of ocean space as a whole. This now involves not only the United Nations Convention on the Law of the Sea, subsuming a host of global and regional conventions as "existing international law," but the whole series of Conventions, Agreements and programmes emanating from the UNCED process.

It is also universally recognized that the General Assembly simply does not have the time to do justice to this very comprehensive task. Hence a process had to be devised to assist the General Assembly in this task.

We are aware that the fulfillment of this task is extremely difficult and requires innovation.. "integration," "integrated management," "integrative approach" - these have become buzz words repeated in thousands upon thousands of pages documents and literature. But the passage from paper to reality is extremely difficult as long as the structures within which we are working are all sectoral; the instruments we are using are all specialized. The danger is that, instead of integration, we come up with an addition of sectoral issues.

The mandate of UNICPOLOS, as defined by Resolution A/RES/54/33, para.2, is:

to facilitate the annual review by the General Assembly, in an effective and constructive manner, of developments in ocean affairs by considering the Secretary-General's report on oceans and the law of the sea by suggesting particular issues to be considered by it, with an emphasis on identifying areas where coordination and cooperation at the intergovernmental and inter-agency levels should be enhanced. (emphasis added).

One way of enhancing this process is to take the major conventions, agreements and programmes, study them side by side and thus detect common themes or overlaps. WE have done that, in a study we are distributing today. We have chosen the Law of the Sea Convention, Agenda 21, the Biodiversity Convention, the Climate Convention, the Straddling Stocks Agreement, Code of Conduct for Responsible Fishing, the Global Programme of Action, and the SIDS Plan of Action, and constructed matrixes - the 8 instruments horizontally, the overlaps or common themes vertically.. The overlaps may involve two or more or all of the 8 instruments.

An example for the overlap between two of the instruments is the issue of the protection of biodiversity on and under the deep sea-bed, for which both the Biodiversity Convention and the Seabed Authority are responsible. We have listed the respective articles side by side. Clearly, this is an issue that needs to be clarified and cooperation at the intergovernmental and inter-agency levels should be enhanced. Clearly, this is an issue that eventually should be on the agenda of UNICPOLOS.

An example that involves all the eight instruments examined is technology cooperation and transfer. It is universally recognized that developing countries need advanced technology if they are to comply with the terms of the instruments in question to reduce pollution, mitigate climate change, conserve biodiversity, and implement Agenda 21 so as to attain sustainable development. But the fact that each one of the instruments contains its own provisions for technology cooperation and transfer -- and our matrixes show them side by side -- undoubtedly implies wasteful duplication of efforts, especially since the technologies involved are mostly the same -- which also results from our matrixes. Our study proposes a single, regionally decentralized system, within the UNEP-initiated Regional Seas Programme, that could serve the needs of all the Conventions, Agreements and programmes involved and would be efficient and cost-effective.

Similar considerations could be made for the development of human resources: How can we enhance "integration" by providing training that is narrowly specialized in eight separate, though overlapping sectors? That training and education must be "interdisciplinary," is being asserted throughout, and yet each one of the eight instruments examined limits training only to its own sector. Again, we have listed the respective articles side by side. Clearly, this is an issue where cooperation at the intergovernmental and inter-agency levels should be enhanced. Thus it is an issue that should be on the agenda of UNICPOLOS.

Two other overlaps or common themes we have identified in this first round are

- Finding "innovative ways" to generate "new and additional funding" for the implementation of each of the Conventions, Agreements, and Programmes;
- Monitoring, surveillance and enforcement of compliance with

the terms of each instrument examined. Obviously it would be wasteful to establish 8 different systems of monitoring, surveillance and enforcement of regulations which are so closely related. The introduction of multi-functional regional systems of monitoring, surveillance and enforcement would be far more rational and could also open the way towards integrating sustainable development and regional security.

Perhaps it would be useful for UNICPOLOS to commission a body like UNITAR or the International Ocean Institute to continue and develop policy research on these issues during the coming years.



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Annex 5

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# International Ocean Institute

## Auditors' report

to the members of the Institute

We have audited the financial statements of International Ocean Institute on pages 2 to 6 for the year ended 31st December, 1999.

The financial statements are the responsibility of the Institute's directors. Our responsibility is to express an opinion on the financial statements based on our audit.

### Basis of opinion

Except that the scope of our work was limited as reported below, we conducted our audit in accordance with International Standards on Auditing. These Standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material mis-statement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by the directors, as well as evaluating the overall financial presentation. We believe that our audit provides a reasonable basis for our opinion.

We report as follows:

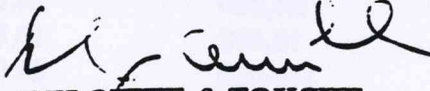
Where this was possible, we have obtained the information and explanations which, to the best of our knowledge and belief, were necessary for the purposes of our audit.

We have not, however, carried out any audit testing on:

- (a) the financial statements pertaining to the Senegal Centre, in respect of which we have relied upon an unqualified report drawn up by independent external auditors;
- (b) financial information relating to the India, Japan, China and Romania Centres submitted by the respective Centres' directors;
- (c) the financial information relating to the Canada, Pacific Islands, Costa Rica and South Africa Centres submitted by the Universities which house the Centres and maintain their financial records;
- (d) items of notional income and expenditure included in the financial statements for information purposes only at amounts estimated by Management to represent the value of services received in kind by the Institute.

### Opinion

Except for any adjustments that might have been found to be necessary had our audit testing not been limited as described above, in our opinion, the financial statements give a true and fair view of the financial position of the Institute as of 31st December, 1999 and of its income and expenditure for the year then ended and have been properly prepared in accordance with International Accounting Standards.

  
**DELOITTE & TOUCHE**  
Certified Public Accountants  
and Auditors

1, Col. Savona Street,  
Sliema, SLM07,  
Malta.

26th May, 2000



# International Ocean Institute

## Income and expenditure account

Year ended 31st December, 1999

	1999 USD	1998 USD
<b>Grants and other income</b>		
Seed Funds	200,000	-
CIDA	137,042	135,989
Other Bodies	683,484	432,611
Donations	37,500	82,760
Interest	5,098	3,000
	<u>1,063,124</u>	<u>654,360</u>
<b>Expenditure</b>		
1. Establishment - personnel	298,675	249,538
2. Establishment - material	69,888	38,351
3. Publications	26,671	5,076
4. Research	37,641	11,629
5. Training programmes	233,739	241,219
6. Conferences, seminars and meetings	281,392	171,933
7. External services	7,163	6,643
8. Depreciation	11,339	9,794
9. Exchange differences	(3,017)	(9,086)
	<u>963,491</u>	<u>725,097</u>
Surplus/(deficit) on ordinary activities	99,633	(70,737)
Exceptional item	(46,729)	(137,212)
Creditor balances no longer required	-	75,251
	<u>52,904</u>	<u>(132,698)</u>
<b>Notional income</b>		
Value received from Collaborating Institutions	<u>843,500</u>	<u>711,500</u>
<i>Representing the following notional expenditure:</i>		
Rent	24,000	24,000
Water and electricity	16,500	16,500
Establishment - material	180,000	64,000
Salaries	215,000	215,000
Training programmes	184,000	168,000
Research	224,000	224,000
	<u>843,500</u>	<u>711,500</u>

# International Ocean Institute

## Statement of affairs

31st December, 1999

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	1999 USD	1998 USD
<b>Fixed assets</b>		
Tangible assets	<u>63,732</u>	<u>56,952</u>
<b>Current assets</b>		
Debtors	27,152	1,112
Cash at bank and in hand	<u>135,414</u>	<u>221,284</u>
	162,566	222,396
Creditors due within one year	<u>(26,577)</u>	<u>(132,531)</u>
Net current assets	<u>135,989</u>	<u>89,865</u>
Net assets	<u><u>199,721</u></u>	<u><u>146,817</u></u>
<i>Represented by:</i>		
Accumulated fund		
At beginning of the year	146,817	279,515
Surplus/(deficit) for the year	<u>52,904</u>	<u>(132,698)</u>
At end of the year	<u><u>199,721</u></u>	<u><u>146,817</u></u>

Approved on 26th May, 2000

  
Dr. Gunnar Kullenberg  
Executive Director

Overview budget (expenses in cash) for 1999  
and 2000 (estimates) in USD

CATEGORY OF EXPENSES	1999	2000
Establishment, staff, travel, training	298,700	323,000
Establishment, material, communications, stationery, postage	70,000	110,500
Publications	26,600	129,000
Research	37,600	300,000
Training programmes	233,700	600,000
Conferences, seminars, meetings	281,400	310,000
External services	7,200	37,000
Depreciation	11,300	-

**Note:** The estimates for 2000 include national moneys in research and training.