

Annual Report



**MAURITIUS OCEANOGRAPHY
INSTITUTE**

2005-2006

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Chairman's Letter

May 2007

Dr. The Hon. Navinchandra Ramgoolam
Prime Minister
Minister of Defence and Home Affairs
Minister of Civil Service and Administrative Reforms
Minister of Rodrigues & Outer Islands
Republic of Mauritius

In accordance with the provision of the Mauritius Oceanography Institute Act of 1999, I am hereby submitting the Annual Report of activities and accounts of the Mauritius Oceanography Institute for the Financial Year which ended on 30 June 2006.

Yours sincerely,



Prof. I. Fagoonee
Chairman

Vision and Mission Statement

The Mauritius Oceanography Institute (MOI) was established under the Mauritius Oceanography Institute Act (Act No. 24 of 1999).

The objects of the Mauritius Oceanography Institute, as spelt out in the Act, are:

- To foster interest in research and development in relation to oceanography,
- To advise Government on the formulation and implementation of policies and programmes in respect to oceanography and related aspects,
- To coordinate, collaborate and co-operate with other institutions, agencies and persons on national, regional and global issues within its field of interest, and to assist any organisation, body or person in creating sustainable research and development programmes in areas of interest and activity related to oceanography,
- To demonstrate and communicate to the scientific community and the public at large the results and the importance of oceanography in the conservation, maintenance, management, utilisation and development of resources based on marine and coastal ecosystems,
- To manage and optimise the use of funds and other resources for the purpose of this Act.

Our Vision

To contribute towards the advancement of oceanography at the national, regional and international level for the welfare of the people of the Republic of Mauritius.

Our Mission

To develop and strengthen oceanographic research, using an integrated scientific approach, to enhance understanding of ocean and coastal processes, for rational development of marine resources, within the maritime zone of the Republic of Mauritius.

The Board

The Mauritius Oceanography Institute (MOI) is managed by a Board, consisting of a Chairperson appointed by the Prime Minister and senior representatives of different ministries and institutions. Sections 8 to 10 of the MOI Act of 1999 lay down the overall responsibility of the Board. The composition of the Board for the year 2005-2006 was as follows:

Chairman of the MOI Board:

Mr. H. Ganoo, G.O.S.K – (up to July 2005)

Professor I. Fagoonee - (from August 2005)

The Secretary for Home Affairs, Prime Minister's Office, or his representative:

Mr. S. C. Seeballuck

A representative of the Ministry to which the responsibility for the subject of foreign affairs is assigned:

Mr. N. Soomauroo (up to April 2005)

Mr. K. Jingree, First Secretary (as from April 2005)

A representative of the Ministry to which the responsibility for the subject of economic development is assigned:

Mr. R. S. Veeramundar, Senior Economist

The Financial Secretary, or his representative:

Vacant

A representative of the Ministry to which the responsibility for the subject of environment is assigned:

Mr. S. Seebaluck, Permanent Secretary

A representative of the Ministry to which the responsibility for the subject of fisheries is assigned:

Mr. M. Munbodh, Chief Fisheries Officer

A representative of the Ministry to which the responsibility for the subject of lands is assigned:

Mr. M. Roojee, Acting Chief Surveyor

A representative of the Ministry to which the responsibility for the subject of Rodrigues is assigned:

Mr. R. C. Gopee, Permanent Secretary - (from June 2005 up to September 2005)

Mr. P. Bonomaully, Permanent Secretary – (from October 2005 up to June 2006)

The Executive Director of the Mauritius Research Council or his representative:

Dr.A. Suddhoo, Executive Director

The Vice Chancellor of the University of Mauritius or his representative:

Professor I. Fagoonee (up to 15 August 2005)

Dr. R. T. Ramessur, Associate Professor (as from September 2005)

The Director of the Mauritius Meteorological Services or his representative:

Mr. S. N. Sok Appadu, Director

The Director-General of the Mauritius Ports Authority or his representative:

Captain P. Ponambalum, Port Master

The General Manager of the Outer Islands Development Corporation or his representative:

Mr. P. Jhugroo (up to August 2005)

Mr. P. Davay, Acting General Manager (as from September 2005)

Members having wide experience in oceanography or international law to be appointed by the Minister:

Mrs.A. Narain, Assistant Parliamentary Counsel

Dr.A. Chan Chim Yuk, University of Mauritius

Mr. S. Ho Man Cheong, Adviser, Prime Minister's Office

Mr. S. Ragoonaden, Ex-Deputy Director, Mauritius Meteorological Services

Staff of the Institute

Dr. M. Bhikajee, B.Sc. [Zoology], M.Sc. [Fisheries Management], Ph.D. [Marine Biology] Director

Scientific Staff

Mr. M. R. Badal, Grad. Stat., M.Sc. [Applied Maths and Modelling], M.Sc. [Oceanography] Project Officer

Dr. D. E. P. Marie, B.Sc. (Hons.), Ph.D. [Chemistry] Project Officer

Mr. E. Martial, B.Tech. (Hons.) [Computer Science & Engineering], M.Sc. [E-business] Project Officer

Dr. K. R. Moothien Pillay, B.Sc., M.Sc. [Marine Ecology and Fisheries Biology], Ph.D. [Fisheries Science] Project Officer

Mr. S. Persand, B.Sc. (Hons.) [Physics], M.Sc. [Physical Oceanography] Project Officer

Dr. A. D. Poonyth, B.Sc. (Hons.), M.Sc. [Oceanography], Ph.D. [Marine Biology] Project Officer

Mr. J. I. Mosaheb, B.Sc. [Marine Biology], B.Sc. [Biochemistry with Molecular Biology] Associate Research Scientist (from 1st June 2005 - to 6th June 2006)
Research Scientist (as from 7th June 2006)

Mr. B. A. Motah, B.Sc. (Hons.) [Physics with Environmental Science] Research Assistant (up to 1 May 2006)
Associate Research Scientist (as from 2 May 2006)

Mr. P. Mussai, B.Sc. [Zoology], M.Sc. [Marine Biology & Oceanography] Research Assistant (up to 1 May 2006)
Associate Research Scientist (as from 2 May 2006)

Mr. P. D. Bissessur, Master 2 Recherche, DESS [Télé-détection-Imagerie-Numérique] Research Assistant in Physical Oceanography (as from 3rd April 2006)

Mr. M. B. Muddhoo , B.Sc. (Hons.) [Chemistry]	Research Assistant in Chemical Oceanography (as from 1st March 2006)
Mr. V. Ramchandur , B.Sc. (Hons.) [Physics]	Research Assistant in Physical Oceanography (as from 2nd May 2006)

Technical Staff

Mr. C. Samyan	Seconded for duty from the Ministry of Fisheries for technical assistance (up to 10 November 2005)
	Technical Assistant/ Senior Technical Assistant (as from 11 November 2005)

Administrative Staff

Ms. A. Seengh	Assistant Administrative Officer (on leave without pay as from 24 April 2006)
Mrs. N. Tegally	Confidential Secretary
Mrs. C. Persand	Public Relations Officer
Mrs. S. Ramjanally – Jaunbocus	Clerical Officer/Word Processing Operator (On leave without pay up to 20th June 2006)
Ms. S. Maunrajoo	Clerical Officer / Higher Clerical Officer (On leave without pay)
Ms. R. Boyjoonauth	Clerical Officer /Higher Clerical Officer
Mrs. S. Bekarma	Receptionist. Seconded for duty from Ministry of Information Technology & Telecommunications (up to 14 September 2005)
Ms. S. Jogarah	Receptionist/ Word Processing Operator

Accounts & Finance Department

Mr. I. Kalloo	Senior Finance Officer (Part time from PMO)
Mrs. R. Sobha, ACCA	Accounts Clerk
Ms. M. Babajee	Clerical Officer /Higher Clerical Officer

Support Staff

Mr. D. Munsah	Driver/Office Attendant
Mr. V. Coopen	Driver/Office Attendant
Mrs. M. Rajiah	Cleaner (part- time)

Trainees under the Skills Development Programme

Batch of December 2004 – November 2005

Mr. Y. Jaumeer	(up to December 2005)
Ms. L. Vantard	(up to December 2005)

Batch of December 2005 – November 2006

Mrs. S. Hosany	(as from December 2005)
Ms. N. Chutoo	(as from December 2005)
Ms. V. Thakoor	(from 1st December 2005 – 31st December 2005)
Mr. P.D. Bissessur	(from December 2005 – March 2006)
Ms. P. Gujadhur	(from 3rd January 2006)
Ms. V. Seebhurrin	(from 9th January 2006)

Projects

Continental Shelf Project

The Mauritius Oceanography Institute has been entrusted by Government to prepare the technical submission of Mauritius for an extended continental shelf to the United Nations Commission for the Limits of the Continental Shelf (UNCLCS). This project is expected to extend the maritime area on which Mauritius will have exclusive rights of exploitation of selected resources.

Database of marine organisms of Mauritian maritime zone

The taxon-based biogeography database project of the Mauritius Oceanography Institute started in May 2005. It will store literature based on taxonomic and geographical data for species reported from Mauritian waters. The end-product will be freely available and will be a standard reference for research and training in the field of marine species diversity of the vast Mauritian maritime zone. Activities regarding training and compilation of bibliographic information have been completed. Presently standardisation and digitalisation processes are being undertaken. **Dr. A. D. Poonyth**, Project Officer, and **Mr. P. Mussai**, Associate Research Scientist, are working on the project. They are receiving the IT support of Mr Eric Martial, Project officer.

Modelling and mapping oceanic processes of South-West Indian Ocean: a satellite- based approach

The ocean is a dynamic and fluctuating environment where numerous processes operate. Observing this ocean variability by conventional means has proved to be difficult and costly. This project on modelling and mapping the south-west Indian Ocean is effectively geared towards the study of the oceanic processes in this part of the globe. The approach will mainly consist on measuring oceanographic parameters via the medium of sensors mounted onboard satellite while its main objective is the mapping and characterisation of oceanic processes, more precisely of biological production and general circulation in the south-west of the Indian Ocean. The subsequent outputs shall constitute a pioneering effort in the setting up of operational oceanography by bridging the gap between research and operation. The project is being carried out by **Mr. R. M. Badal**, Project Officer and he is assisted by **Mr. B.A. Motah**, Associate Research Scientist.

Study of the lagoon-beach interactions at specific sites around Mauritius for a better control of coastal erosion

The main aim of this project is to characterise processes leading to coastal erosion at specific places around Mauritius through a geomorphologic study of the beach in conjunction with a hydrodynamic and sediment dynamic study of the lagoons. A Valeport model 106 current meter and a Midas WTR wave and tide recorder have been purchased to enable the collection of current, wave and tide data which will be the main parameters to be used in the hydrodynamic study of the lagoons. The principal investigator is Mr. S. Persand, Project Officer and he is assisted by Mr. P. D. Bissessur since April 2006.

Bioprospecting Mauritius waters

This project was initiated about one and a half years ago and the results obtained so far are very promising. So far approximately ninety specimens have been collected from several diving sites around the island of Mauritius and seventy of them have been taxonomically identified. Eight extracts from four sponges were tested for anticancer activities. The extract of one of them is exhibiting quite a good activity. Thirteen compounds were isolated from two other sponges. Three of the thirteen compounds have been isolated for the first time and their biological activities are now being assessed. The setting up of bioassay facilities in Mauritius to perform anticancer tests on human cell lines in vitro would greatly help to fast track biological testing of the sponge extracts. Additionally bioassays to verify the efficacy of the sponge extracts against tropical diseases are being looked into. The project is led by **Dr. Daniel Marie**, Project Officer with the assistance of **Mr. M. B. Muddhoo**, Research Assistant.

Evolutionary and population genetics of scleractinian corals

This project, which was undertaken in collaboration with Kitasato University, Japan and the Research Centre for Biodiversity, Academia Sinica consisted in looking at the molecular relationship across a wide range of scleractinian corals and in investigating gene flow among reefs locally and regionally using DNA-based techniques. During the first phase of the project (2003-2006), MOI's Project Officer Ruby Moothien Pillay investigated the species boundaries between the sympatric *Pavona* species of Mauritius and of Japan and compared the population structure of *Pavona* species between the Indian Ocean (Mauritius, Thailand) and western Pacific Ocean (Taiwan, Japan) in partial fulfilment of the requirements for a Ph.D. degree at Kitasato University. Ms. Moothien Pillay was under the supervision of Professor Hitoshi Ida and Associate Professor Takashi Asahida of the School of Fisheries Sciences, Kitasato University and Professor Chaolun Allen Chen from the Research Centre for Biodiversity, Academia Sinica (Taiwan). **Dr Ruby Moothien Pillay** submitted her thesis entitled "Population Ecology and Genetic Structure of *Pavona* species (Scleractinia; Agariciidae)" and graduated with a Ph.D. in Fisheries Sciences in March 2006.

Mapping of the marine habitats of the South-Eastern coast of Mauritius

The geo-spatial information and mapping project initiated by MOI through the funding from the *Commission de L'Océan Indien* had as main objective the construction of a series of maps that would classify major coastal habitats and eventually assess their relative ecological richness. The study involved both actual field surveys together with state of the art remote sensing technique. An atlas-type document has been published and was launched during the third National Ocean Science Forum on 29 August 2005. The project was led by **Mr. M. R Badal**, Project Officer.

Bathymetric survey of the shallow lagoons of Mauritius

The main objective of the project is to map the bathymetric profile of selected shallow lagoons around Mauritius. The maps, both in hard copy and in electronic format, will help in the investigation of other parameters such as the hydrodynamics, zonation of lagoonal biotopes, sediment transport among others in the lagoon. The equipment used comprises of a single beam echosounder with a depth range of 0.2-600 metres, a transducer of 200kHz/33kHz, a data logger and PDS2000 software for data processing. The principal investigator of the project is **Mr. J. I. Mosaheb**, Research Scientist, assisted by **Mr. V. Ramchandur**.

Oil and Gas Exploration

On 13th July 2006, the Mauritius Oceanography Institute, on behalf of the Mauritian Government, signed a Memorandum of Understanding with the Oil and Natural Gas Commission Videsh Limited of India for cooperation in the field of hydrocarbon exploration. The project also has a component of capacity building.

Development of tsunami preparedness map

The Mauritius Oceanography Institute has been entrusted by Government to determine the potential impact of tsunami waves on the islands of Mauritius and Rodrigues. This project was carried out using models developed by the United Nations experts in that field.

New IT Infrastructure at MOI

In February 2006, the Mauritius Oceanography Institute started the implementation of a new IT infrastructure to cater for the Institute's current and future needs concerning security, performance and user collaboration and communication. The Institute's new network architecture consists of three separate servers namely an Application Server, an Email/Antivirus Server and a Proxy/Firewall Server connected to an existing local area network of some thirty workstations. All three servers are protected by a UPS.

The successful deployment of the new hardware and software has provided the Mauritius Oceanography Institute with:

- An improved messaging solution for both internal and external mails.
- Better protection from both internal and external threats such as the Internet.
- Application hosting facilities and a central repository for the Institute's data.
- A comprehensive virus and spyware protection for the servers and existing PCs.
- A centralised backup system to provide data protection and ensure data availability.

Staff Training

Mr. S. Persand, Project Officer, was nominated by the MOI to apply for the United Nations and the Nippon Foundation of Japan Fellowship Programme for the law of the sea in October 2004. In December 2004, Mr. Persand was awarded the fellowship. The Programme comprised of two distinct phases namely a research and study period at the University of Oklahoma and an attachment period at the Division of Ocean Affairs and the Law of the Sea (DOALOS) at the United Nations in New York. Mr. Persand proceeded to the University of Oklahoma at the end of January 2005. The research and study was focused on Article 76 of the United Nations Convention on the Law of the Sea (UNCLOS). Mr. Persand spent the last 3 months of the programme, from September to December 2005, at the DOALOS in New York. During his attachment at the Division, Mr. Persand took the opportunity to interact with various key persons dealing with the continental shelf. He also had informal discussions on a few pertinent issues with the members of the Commission on the Limits of the Continental Shelf (CLCS).

Ms. Ruby Moothien Pillay, Project Officer, was at the Coral Reef Evolutionary Ecology and Genetics Laboratory, Research Centre for Biodiversity (Taiwan) and the Laboratory of Eco-Biology, School of Fisheries Sciences, Kitasato University from February 2005 until March 2006 for laboratory work in coral molecular genetics in connection with MOI's collaborative project with Kitasato University and the Research Centre for Biodiversity, Academia Sinica, Taiwan on the "Evolutionary and Population Genetics of Scleractinian corals".

Dr. Asha Devi Poonyth, Project Officer and **Mr. Prakash Mussai**, Research Assistant participated in the Training Course on 'Marine Biodiversity Data Management', which was held at Grand Baie, from the 22nd to 27th August 2005. It was organised by the ODINAFRICA project and supported by the IOC/UNESCO project office for IODE and Flanders Marine Institute.

Mr. Prakash Mussai, Research Assistant, participated in the 'Integrated Water Resources Management' workshop, which was held at the University of Mauritius from 5th to 16th December 2005. It was co-hosted by the University of Mauritius and the Uppsala University of Sweden. The topics covered during the workshop were the Basic plankton ecology and monitoring of planktonic communities.

Mr. M. R. Badal, Project Officer, participated in the training programme in 'Coastal Physical Oceanography of Indian Ocean Waters' from 26th January to 15th February 2006 in Colombo, Sri Lanka through the initiative of Professor Charitha Pattiaratchi, of University of Western Australia. The programme received the financial support of the Nippon Foundation – Partnership for Observation of the Global Oceans (NF-POGO) and the logistical support of the National Aquatic Resources Research and Development Agency (NARA). Participants were from Tanzania, Yemen, Pakistan, Bangladesh, Mauritius and Sri Lanka. The first part of the course covered wide panoply of oceanographic topics including among others: the following topics: oceanic processes, ocean circulation, water masses, numerical modelling, and continental shelf dynamics.

Mr. S. Persand, Project Officer and **Mr. J. Mosaheb**, Research Scientist, attended the 'Energy Seminar' on the 15th and 16th February 2006 at the University of Mauritius. The objectives of the seminar were to appraise the energy situation of the island and to discuss opportunities and challenges for alternative energy sources so as to meet our present and future needs. Various stakeholders from the public, university and private sectors presented papers on energy in connection with tourism, industries and transport amongst others. The outcomes of this seminar would most importantly be the realization at all levels on the challenges ahead and eventually to find a consensus on the way forward.

Mr. Prakash Mussai, Research Assistant, participated in the First ODINAFRICA Marine Biodiversity Data Mobilisation Workshop, which was held in Oostende, Belgium, from the 13th to 22nd March 2006. It was organised by the Intergovernmental Oceanographic Commission Project Office for IODE and ODINAFRICA and supported by the Government of Flanders and the Flanders Marine Institute. This workshop was a follow up of the Marine Biodiversity Data Management Training Workshop, which was held in Mauritius, August 2005.

Mr. B. A. Motah, Research Assistant, participated in an International Training Course on Tsunami Numerical Modelling from 8th to 19th May 2006 at the Malaysian Centre for Remote Sensing (MACRES), Kuala Lumpur, Malaysia. The course was designed and taught by a group of experts, sponsored and engaged by UNESCO Intergovernmental Oceanographic Commission and International Tsunami Information Centre (ITIC). The main objectives of the training were to impart participants with background knowledge in geology and geophysics, seismology, oceanography and tsunami science to understand the problem to be solved. The Training included hands-on computer work to calculate the tsunami wave effect from a number of different plausible sources. Each country simulated a scenario according to their location in the Indian Ocean. In this view, a tsunami simulation was run for Mauritius in the event that we had an earthquake nearby south of La Reunion, which was just an arbitrary scenario to understand the wave effects. Participants were also sensitised on the risk of tsunami due to landslides. The training consisted of a series of lectures and hands-on computer exercises based on the software that the tsunami modelling experts had developed.

Mr. M. R. Badal, Project Officer, participated in a training programme in coastal physical oceanography from 5th to 23rd June 2006 in Colombo, Sri Lanka. This programme was a follow up on an earlier training in ocean observation and data analysis. In this second part, however, the aim was mostly oriented in providing trainees with a practical exposure to oceanography.

Mr. B. A. Motah, Associate Research Scientist, participated in a Regional Workshop on Mitigation, Preparedness and Development for Tsunami Early Warning Systems (TEWS) in the Indian Ocean. The United Nations Inter-Agency Secretariat of the International Strategy for Disaster Reduction (UN/ISDR) and the United Nations Economic And Social Commission for Asia and the Pacific (UNESCAP) in collaboration with the Intergovernmental Oceanographic Commission and other members of the ISDR Asia Partnership, convened the workshop at the United Nations Conference Centre (UNCC) in Bangkok, from 14th to 16th of June 2006. The workshop emphasized the importance on integrating disaster risk reduction and planning and requested the consolidation of the draft terms of reference and enhancement of ideas. Its objective was to strengthen the roles of disaster risk reduction and development planning in the establishment of TEWS, focusing on recommendations formulated to integrate TEWS in national development plans, credentials of national needs and priorities for development of the TEWS and thereby giving more of a people-centred aspect to it and come forward with a finalised terms of reference for the sixth ICG Working Group as well as agreement on how to introduce the issues raised during the workshop and its sustainability by and within the ICG process.

Mr. Prakash Mussai, Associate Research Scientist, participated in the First Indian Ocean Natural Geography In Shore Areas (NaGISA), Meeting And Protocol Workshop which was held in Kenya, from 26th to 30th June 2006. The meeting was co-hosted by the Kenya Marine and Fisheries Research Institute and the Natural Geography of Shore Area. The purpose of the meeting was to build a network of scientists working on inshore biodiversity, identify and discuss similar initiatives in the Indian Ocean region on which NaGISA can build on and benefit from, and learn NaGISA biodiversity sampling and monitoring techniques.

Mr. Beenesh Anand Motah, Mr. Prakash Mussai, Associate Research Scientists and **Mr. Vimal Ramchandur**, Research Assistant, followed the PADI Open Water Diving Course for five days spaced out from 1st June to 21st June 2006 at Atlantis diving centre, Trou aux Biches.

Participation in International Conferences and Meetings

Dr. M. Bhikajee, Director of the Mauritius Oceanography Institute participated in the IGOOS/JCOMM Western Indian Ocean Expendable bathythermograph (XBT) Workshop in Goa, India, from 5th to 7th October 2005. The workshop was jointly organised by the National Institute of Oceanography of India, the Intergovernmental Oceanographic Commission (IOC) of UNESCO, the Joint Technical Commission for Oceanography and Marine Meteorology (JCOMM), the Ship of Opportunity Implementation Panel (SOOIP) and IOC Perth Regional Office. Participants were scientists and heads of institutions from various Indian Ocean Rim Countries and Managers of Shipping lines. The participation of the Director was sponsored by the organisers.

Dr. K. Ruby Moothien Pillay, Project Officer, was an invited speaker at the workshop on “Molecular phylogeny of scleractinian corals and reef connectivity in the South/East China Seaboards” held at Academia Sinica, Taipei, Taiwan from 25th to 30th October 2005. She gave a talk on “Species boundary and genetic variation of sympatric *Pavona*”. The workshop was sponsored by the Research Centre for Biodiversity, Academia Sinica and was attended by scientists from various international institutions of Japan, Philippines, Malaysia, Thailand and United States. Besides providing scientists involved in coral genetics with a platform to present their work, the workshop gave opportunities for taking stock of the latest findings in coral genetics.

Dr. M. Bhikajee, Director of the Mauritius Oceanography Institute participated in the Board Meeting of the Western Indian Marine Science Association in Johannesburg on 18th February 2006. The Western Indian Ocean Marine Science Association (WIOMSA) is a regional organisation grouping about one thousand marine scientists from East Africa and the Western Indian Ocean Islands. It organises training workshops, provides research grants, coordinates UNEP activities in the region and publishes a regional research journal. The last regional symposium of WIOMSA was held in Mauritius in conjunction with the National Ocean Science Forum of the MOI in August/September 2005. **Dr. M. Bhikajee** was elected Vice President of WIOMSA during the meeting. His participation was sponsored by WIOMSA.

A delegation consisting of **Mr. S. C. Seeballuck**, Secretary to Cabinet and Head of the Civil Service (Head of Delegation), **Mrs. A. D. Narain**, Assistant Parliamentary Counsel, **Dr. C. W. Chan Chim Yuk**, Geotechnical Engineer and former Mauritian commissioner to the UNCLCS and **Dr. M. Bhikajee**, Director of the Mauritius Oceanography Institute proceeded on an official mission to Canberra, Australia from 16th to 18th May 2006 in the context of the Continental Shelf Project.

Dr. M. Bhikajee, Director of the Mauritius Oceanography Institute participated in the seventh meeting of the United Nations Open-ended informal consultative process on oceans and the Law of the Sea, which was held at the UN Headquarters in New York from 12th to 16th June 2006. The meeting grouped 448 delegates from 95 countries, UN and intergovernmental bodies and NGO's. During the first four days, discussions were held on Ecosystem Approaches and Oceans. The participation of the Director was sponsored by DOALOS.

Dr. K. Ruby Moothien Pillay, Project officer, attended the Asia Pacific Coral Reef Symposium which was held at the Chinese University of Hong Kong, Hong Kong SAR, China from 18th to 24th June 2006. It was hosted by the Department of Biology, Chinese University of Hong Kong. The theme of the meeting was "Coral Reefs: Cooperation and Collaboration for better conservation". Dr. Moothien Pillay was one of the four main invited speakers of the mini-symposium "Coral Genetics and Phylogeny" convened by Dr. C. Allen Chen and Dr. Hironobu Fukami. She spoke on the genetic structure of *Pavona* species. She also presented a poster entitled "Utility of a nuclear (rDNA ITS-1 and ITS2) and a mitochondrial marker (Cytochrome b) in delineating species boundaries in scleractinian corals: examples of *Pavona* spp."

Publications and Conference Papers

Publications

Bhikajee, M., Green J.M. and Dunbrack R. (2006) Life history characteristics of *Alticus monochrus* a supratidal blenny of the southern Indian Ocean. *African Zoology*. Vol. 41 No.1 pp1-7.

Fokeera-Wahedally S.B.M. and **Bhikajee, M.** (2005) The effect of in situ shading on the growth of a seagrass, *Syringodium isoetifolium*. *Estuarine and Shelf Science*. No. 64 pp.149-155.

Moothien Pillay K. R., B. Willis, H. Terashima. 2005. Trend in density of zooxanthellae in *Acropora millepora* (Ehrenberg, 1834) at the Palm Island Group, Great Barrier Reef, Australia. *Symbiosis* 38 (3): 209-226

McClanahan T.R., J. Maina, **Moothien Pillay K. R.**, A.C. Baker. 2005. Effects of geography, taxa, water flow and temperature variation on coral bleaching intensity in Mauritius. *Mar. Ecol. Prog. Ser.* 298: 131-142

McClanahan T.R., A. Baker, J. Maina, M. Atewebrehan, **K. R. Moothien Pillay**. 2005. The importance of refining coral bleaching experiments and models through reiterative field studies. *Mar. Ecol. Prog. Ser.* 305: 301-303

Moothien Pillay K. R., H. Terashima, H. Kawasaki, V. Chineah. 2006. Recovery of massive poritid corals from bleaching at Albion, Mauritius. *Proceedings of 10th International Coral Reef Symposium*, pp 617-623.

Moothien Pillay K. R., T. Asahida, C.A. Chen, H. Terashima, H. Ida. 2006. ITS ribosomal DNA distinctions between and genetic structures of populations of two sympatric species of *Pavona* (Cnidaria: Scleractinia) from Mauritius. *Zool. Stud.* 45 (1): 132-144

Nu-Wei V.W., Wallace C.C., Dai C-F, **Moothien Pillay K.R.**, Chen A.C. 2006. Analyses of the ribosomal internal transcribed spacers (ITS) and the 5.8S gene indicate that extremely high rDNA heterogeneity is a unique feature in the Scleractinian coral genus *Acropora* (Scleractinia; Acroporidae). *Zool. Stud.* 45 (3): 404-418

Conference papers

Moothien Pillay K. R., T.Asahida, C.A. Chen, H.Terashima, H.Ida. 2005. Species boundary and genetic variation of the sympatric *Pavona*. Molecular phylogeny of scleractinian corals and reef connectivity of the South and East China Sea Boards, Taipei, Taiwan (Workshop)

Moothien Pillay K. R., Asahida T, Chen C.A, Terashima H, Nomura K, Ida H. 2006. The Genetic Structure of *Pavona* spp. (Scleractinia; Agariciidae). Asia-Pacific Coral Reef Symposium, Hong Kong SAR, China.

Moothien Pillay K. R., Asahida T, Chen C.A, Terashima H, Nomura K, Ida H. 2006. Utility of a nuclear (rDNA ITS-1 and ITS-2) and a mitochondrial marker (Cytochrome b) in delineating species boundaries in scleractinian corals: examples of *Pavona* spp. Asia-Pacific Coral Reef Symposium, Hong Kong SAR, China.

Thesis

Moothien Pillay, K R., (2006) Population ecology and genetic structure of *Pavona* spp. (Scleractinia; Agariciidae). PhD.Thesis, Kitasato University 191 pp.

Events

National Ocean Science Forum 2005

The Mauritius Oceanography Institute organised its third annual National Ocean Science Forum (NOSF) on the 29th August 2005 at the Grand Baie Conference Centre. The aim of this symposium was to provide marine scientists in various Mauritian institutions, the opportunity to present and share results of their research activities. This forum also provided a platform to disseminate information to the public and to make them better acquainted with marine environment.

The forum was held in conjunction with the fourth Scientific Symposium of the Western Indian Ocean Marine Science Association (WIOMSA) from the 30th of August to the 2nd of September 2005. The NOSF and WIOMSA Symposium were opened by the Honourable **Anil Kumar Bachoo**, Minister of Environment and National Development Unit. **Dr Patricio Bernal**, Assistant Director General of the UNESCO and General Secretary of IOC of UNESCO, gave the keynote address on “The implementing an Early Warning System against Tsunamis by states bordering the Indian Ocean”. About one hundred and forty foreign and ninety local scientists participated in the NOSF and the WIOMSA Symposium.

On that same occasion, the MOI launched its publication entitled: “Mapping of the Marine Habitats of the South-Eastern Coast of Mauritius”, a project funded by the European Union through the Commission de l’Océan Indien. The award ceremony for the winners of the website competition organised by MOI on “Importance of the ocean for Small Developing Island States” was also held on that day.

World Environment Day 2006

The Mauritius Oceanography Institute was invited to participate in the exhibition on “Sustainable Consumption” held from 5th to 8th June 2006 at the Grand-Baie International Centre. The M.O.I presented 2 posters entitled “The role of the Mauritius Oceanography Institute in the sustainable use of our ocean resources” and “Wetlands are not wastelands - protect them”.

Scientific Cruises

Mission to St. Brandon

This mission to St-Brandon was undertaken in the context of the project of “Collection of tidal information on the outer islands”. In November 2002, a tide gauge was deployed off St-Brandon in order to determine the lowest astronomical tide (LAT) of the St-Brandon group with the view to optimise the baselines and the maritime jurisdiction of the Republic of Mauritius.

The mission consisted in replacing the tide gauge deployed at St-Brandon in 2005 and verifying the benchmarks on the island. It was conducted from the National Coast Guard (N.C.G) vessel, CGS Guardian. The M.O.I staff members on the mission were **Mr. C. Samyan** (Technical Assistant/ Senior Technical Assistant), and **Mr. P. D. Bissessur** (Research Assistant).

Report of the Director of Audit to the Chairperson of the Mauritius Oceanography Institute

I have audited the accompanying balance sheet of the Mauritius Oceanography Institute (MOI) as of 30 June 2006, and the related statements of income, and cash flows for the year then ended. These financial statements are the responsibility of the Institute. My responsibility is to express an opinion on these financial statements based on my audit.

I conducted my audit in accordance with International Standards on Auditing. Those Standards require that I plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. 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 management, as well as evaluating the overall financial statement presentation. I believe that my audit provides a reasonable basis for my opinion.

Audit Opinion

In my opinion, the financial statements give a true and fair view of the state of affairs of the Mauritius Oceanography Institute as of 30 June 2006, and of its income and expenditure for the year then ended in accordance with Generally Accepted Accounting Principles and comply with the Statutory Bodies (Accounts and Audit) Act 1972.



(R. JUGURNATH)
Director of Audit

National Audit Office
Level 14
Air Mauritius Centre
PORT LOUIS
4 May, 2007