

CRISP



Coral Reef InitiativeS for the Pacific
Initiatives Corail pour le Pacifique

REPORT

PARTICIPATION OF THE CRISP to PSI 2009



Author: Claire Dupré

CRISP



Coral Reef InitiativeS for the Pacific
Initiatives Corail pour le Pacifique



The CRISP Coordinating Unit (CCU) was integrated into the Secretariat of the Pacific Community in April 2008 to insure maximum coordination and synergy in work relating to coral reef management in the region.



The CRISP programme is implemented as part of the policy developed by the Secretariat of the Pacific Regional Environment Programme for a contribution to conservation and sustainable development of coral reefs in the Pacific.

The Initiative for the Protection and Management of Coral Reefs in the Pacific (CRISP), sponsored by France and prepared by the French Development Agency (AFD) as part of an inter-ministerial project from 2002 onwards, aims to develop a vision for the future of these unique eco-systems and the communities that depend on them and to introduce strategies and projects to conserve their biodiversity, while developing the economic and environmental services that they provide both locally and globally. Also, it is designed as a factor for integration between developed countries (Australia, New Zealand, Japan and USA), French overseas territories and Pacific Island developing countries.

The initiative follows a specific approach designed to:

- associate network activities and fieldwork projects;
- bring together research, management and development endeavours;
- combine the contributions of a range of scientific disciplines, including biology, ecology, economics, law and the social sciences;
- address the various land and marine factors affecting coral reefs (including watershed rehabilitation and management);
- avoid setting up any new body but supply financial resources to already operational partners wishing to develop their activities in a spirit of regional cooperation. This is why the initiative was prepared on the basis of a call for proposals to all institutions and networks.

The CRISP Programme comprises three major components, which are:

Component 1A: Integrated Coastal Management and Watershed Management

- 1A1: Marine biodiversity conservation planning
- 1A2: Marine Protected Areas
- 1A3: Institutional strengthening and networking
- 1A4: Integrated coastal reef zone and watershed management

Component 2: Development of Coral Ecosystems

- 2A: Knowledge, beneficial use and management of coral ecosystems
- 2B: Reef rehabilitation
- 2C: Development of active marine substances
- 2D: Development of regional data base (ReefBase Pacific)

Component 3: Programme Coordination and Development

- 3A: Capitalisation, value-adding and dissemination of CRISP results
- 3B: Coordination, promotion and development of CRISP activities

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SPC
Secretariat
of the Pacific
Community

CRISP is funded by the following partners :



THE PARTICIPATION OF THE CRISP PARTNERS TO PSI 2009 WAS SUPPORTED
THROUGH A GRANT OF 20,000 EUROS PROVIDED BY THE GOVERNMENT
OF FRANCE THROUGH THE FRENCH PACIFIC FUND.





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BRIEF OVERVIEW ON PSI 2009

► A FRENCH EVENT

CRISP Programme dedicated 20 000 Euros from the Pacific Fund (SPP) to the manifestation. The CRISP Coordinating Unit in Noumea allocated special grants to eight scientists presenting their work during poster or oral presentations and to five others for their participation to a special CRISP side-event, organized through component 2C on Bioprospection. The organisation of this workshop on « Access and Benefit Sharing (ABS) of Genetic resources in the Pacific » was primarily funded by CRISP, in association with IRD, UC Berkeley Gump Station and the Smithsonian Institution via the Consortium for the Barcode of Life.



Hotel Sheraton, PSI venue in Papeete, French Polynesia.

Special financial help was also allocated to Tamatoa Bambridge (CNRS) for the organisation of a workshop on Governance titled « Management of marine resources and habitats (lagoons and coral reefs) in Polynesia: between legitimacy and efficiency » that took place at the CRILOBE headquarters in Moorea. Lastly, CRISP coordinator Eric Clua took part in the workshop organized by Pr. Bernard Salvat (EPHE) and Randy Thaman (USP) on « Cooperation in Science and Education in the Pacific ».



PSI 2009 was a major event for the CRISP programme. France, French Polynesia, and the Pacific Science Association organized this 11th Pacific Science Intercongress in conjunction with the 2nd Symposium on French Research in the Pacific, on the theme : « Pacific countries and their ocean facing local and global changes ». A theme that logically called for a strong CRISP participation. The inter-congress main covered topics were:

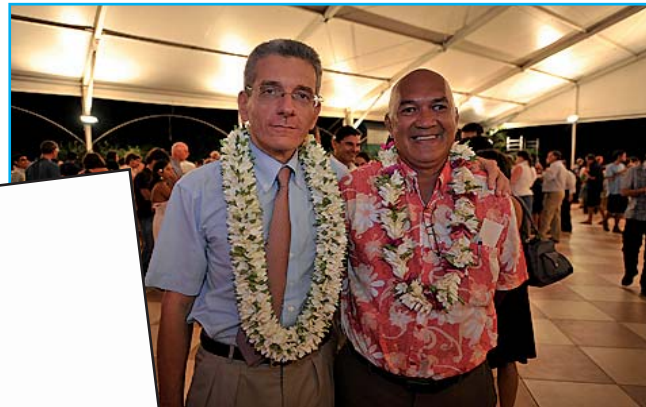
1. Ecosystems, Biodiversity and Sustainable Development
2. Climate Change and Ocean Acidification
3. Health Challenges in the Pacific : Infectious diseases, Non-communicable diseases and the Health workforce
4. Culture and Politics : The Stakes of Modernity
5. Governance and the Economy : Future challenges for the Pacific



CRISP ACKNOWLEDGED BY THE PRESIDENT OF FRANCE



Adolphe Colrat (left), French High Commissioner of the Republic in French Polynesia represented President Sarkozy during PSI 2009 official opening reading his introductory speech. Here, with Georges Handerson, Environment and Sustainable Development Minister (right) of French Polynesia.



Secondes Assises de la Recherche française dans le Pacifique
11th Pacific Science Inter-Congress

MESSAGE DE M. NICOLAS SARKOZY, PRESIDENT DE LA REPUBLIQUE FRANCAISE

Mesdames et Messieurs, chers amis,

L'Etat et la Polynésie française se sont associés au congrès des Sciences du Pacifique joint aux Sciences de la Vie et de l'Environnement. Je me réjouis de la fusion de ces deux manifestations et de la Recherche française dans le Pacifique un caractère.

Jamais un colloque n'aura rassemblé autant de scientifiques, en provenance de tous les continents, pour l'effet ici réunis autour d'un thème majeur : « Les pays du Pacifique et leur environnement locaux et globaux ».

Je salue tout particulièrement la participation de la Polynésie française. Elle est porteuse d'avenir et de progrès.

Je salue naturellement avec vous l'ensemble des organismes français et étrangers qui participent à ce colloque.

Je ne doute pas que de ce colloque naissent de nombreuses synergies. Elles sont essentielles pour les populations des pays du Pacifique.

L'ensemble des thèmes qui sont abordés, les préoccupations de la France, les réponses aux enjeux de la Polynésie, encore, dans la suite du développement durable et de la protection de l'environnement.

Ainsi la santé des écosystèmes, le développement durable, essentiel et d'un développement durable, par exemple, ces thèmes sont essentiels pour le tourisme ou encore pour l'économie.

Les conséquences du réchauffement climatique, du taux de CO₂, de l'océanographie et de l'ensemble des sciences de la vie et de l'environnement.

Sur ces sujets, la France dispose d'un fort potentiel de recherche et d'innovation, qu'elle souhaite confronter aux expériences, savoirs et besoins des autres Etats du Pacifique. Je tiens à affirmer la volonté de la France et des collectivités françaises du Pacifique de renforcer la concertation et la coopération régionales entre les pays et territoires du Pacifique pour la progression des connaissances scientifiques et leurs applications en faveur d'une meilleure gestion des milieux et des ressources.

En marge de l'appui que la France apporte aux organisations régionales de la CPS et du PROE, la France a eu l'initiative d'un programme corallien Pacifique original, le programme CRISP, qui est un succès. Lancé par l'AFD, le Ministère des Affaires étrangères et le Fonds Pacifique, il a galvanisé la coopération et les fonds de l'Agence des Nations Unies pour l'Environnement, d'ONG comme Conservation International et du WWF - dont je salue ici les représentants - pour favoriser une meilleure gestion des écosystèmes coralliens dans plus de 15 pays océaniques, avec un budget de près de 15 millions d'euros. Je souligne l'originalité de la démarche de ce programme qui s'achèvera en 2010 et dont nous souhaitons qu'elle ait des suites au sein de l'Union Européenne.

À partir de juillet prochain, la France assurera le secrétariat de l'initiative internationale sur les Récifs Coralliens (ICRI) et compte bien donner un nouvel élan à la coopération internationale en faveur de cet écosystème si important dans le Pacifique, qui compte les récifs les mieux conservés et les moins dégradés au monde. Pour affirmer son action volontaire au sein de l'ICRI, un ministre du gouvernement participera prochainement à l'assemblée générale de l'ICRI en Thaïlande en avril prochain.

Dans le cadre du Grenelle de l'Environnement il a été décidé que les crédits consacrés à l'Initiative française pour les récifs coralliens (IFRECOR) sous l'égide des Ministères de l'écologie et de l'outre-mer, seront considérablement augmentés. Je souligne que cette initiative thématique concernant le milieu corallien fédère l'ensemble des collectivités françaises tropicales des Caraïbes, de l'océan Indien et du Pacifique. Son rôle est essentiel et doit se développer dans un cadre de coopération régionale comme l'a fait l'IFRECOR Polynésie en participant au CRISP.

Je serai à l'écoute des propositions que vous ferez dans le cadre de votre session plénière sur la coopération régionale. Nous devons multiplier les initiatives pour mutualiser nos savoirs et progresser ensemble plus rapidement sur le développement durable de nos ressources et milieux naturels. C'est dans cet esprit que je compte proposer un certain nombre d'actions nouvelles au prochain sommet France-Océanie.

A vous tous, chercheurs de 49 pays, présents ici à Tahiti, je souhaite un excellent et fructueux séjour de travail en Polynésie française.



CRISP HIGHLIGHTS DURING PSI 2009



CRISP SCIENTIFIC CONTRIBUTIONS ►

The CRISP program was represented by 9 collaborators for a total of 10 contributions (5 oral presentations and 5 posters presentations), most of them being integrated in the first session titled Ecosystems, Biodiversity and Sustainable Development.

► CRISP BOOTH

The CRISP Programme was well represented during the inter-congress. A dynamic team constituted by Julie Petit (CRIOBE), Asenaca Valemei (USP), Cherie Morris (USP) and Eric Clua (CCU) animated the booth all week long. Displayed at the CRISP booth were CRISP program posters, reports and DVDs including specific information on the ReefBase Pacific new release.



WORKSHOP ON REGIONAL COOPERATION ►

Eric Clua, CRISP coordinator, took part in the workshop on Regional Cooperation organised by Bernard Salvat (EPHE) and Randy Thaman (USP). His presentation titled « CRISP and Regional Cooperation » was programmed during the session II dedicated to International Research and Scientific Organizations and Initiatives.



► ABS WORKSHOP

CRISP Component 2C dedicated to Bioprospection and led by Cécile Debitus from IRD Toulouse co-organized, with Neil Davies (UC Berkeley Gump Station) and David Schindel from the Consortium for the Barcode of Life (Smithsonian Institution) a workshop on ABS (Access and Benefit Sharing). With a dozen scientific contributions and more than 50 participants, the day long workshop has been a real success.



► WORKSHOP ON GOVERNANCE

The workshop « Management of marine resources and habitats (lagoons and coral reefs) in Polynesia: between legitimacy and efficiency » co-organized by Tamoia Bambridge (CNRS) and Rod Dixon (USP) at the CRIOBE headquarters in Moorea (6th and 7th of March), was sponsored by IFRECOR and CRISP.

CRISP BOOTH



Julie Petit (CRIOBE), Asenaca Valemei (IMR) and Cherie Morris (USP) with CRISP's coordinator.

► A COMMUNICATION TOOL

The booth was an opportunity for the programme to promote its publications and recent products. Julie Petit (CRIOBE Moorea), Asenaca Valemei (IMR USP) and Cherie Morris (USP) assisted Eric Clua (CCU) at the CRISP booth over the week-long conference in Tahiti. Displayed at the CRISP booth were CRISP programme posters, reports and DVDs including specific information on the ReefBase Pacific project.

On average, thirty people per day visited the booth and browsed through the materials displayed. Majority of people were interested in the CRISP mid-term report and the ReefBase Pacific DVD and had a chance to see a demo of the ReefBase Pacific 2.0 version just released. Others asked about the Pacific Coral Reef Atlas and several people wanted copies of country maps.

Most of the reports, flyers and DVD's were distributed during the week.

CRISP documentation remains available anytime on www.crisponline.net



A new version of ReefBase Pacific database on DVD is now available with an online updating system.



SCIENTIFIC CONTRIBUTION

► A SUBSTANTIAL CONTRIBUTION

The CRISP Coordinating Unit (CCU) allocated special grants to enable its collaborators to present their work at PSI 2009. Thus, CRISP was represented by 9 scientists (IRD, WWF, CRILOBE and Marine Ecology) contributing with 5 oral presentations and 5 posters presentations, most of them included into the Session 1 of the inter-congress on Eco-systems, Biodiversity and Sustainable Development. The table below summarized the CRISP participation.

THE CONTENTS OF CONTRIBUTIONS ARE PROVIDED IN ANNEX 1 (ORAL & POSTER PRESENTATIONS) FROM PAGE 15 TO 24.

Ecosystems session room 1: Long term monitoring			
Helen SYKES	A Cause for Optimism: Identification of threats and resiliency on Pacific Reefs through establishment of a long term reef monitoring network in Fiji: The Fiji Coral Reef Monitoring Network (FCRMN).	Poster	Annex 1f
Ecosystems session room 2: Biological Processes and Sustainable Development			
Nicolas BURAY	Études comportementales et de vulnérabilité de la population de requins citron (<i>Negaprion acutidens</i>) sur le site de « feeding » d'Opunohu à Moorea, Polynésie française.	Poster	Annex 1g
Ecosystems session room 2: Natural Products and Eco-toxicology			
Kirti PATEL	Sarasinoides of the Sponge Amorphinopsis excavans from Solomon Islands	Oral	Annex 1c
Ecosystems session room 3: Aquaculture and Fisheries			
Nicolas GUILLEMOT	Toward appropriate methodologies and indicators to assess the impact of coastal fisheries on reef fish communities in New Caledonia (South Pacific)	Oral	Annex 1a
Haizea JIMENEZ	Structure spatio-temporelle des populations d'invertébrés benthiques des platiers récifaux pêchés du Grand Nouméa	Oral	Annex 1d
Haizea JIMENEZ	Spatio-temporal structure of harvested tropical reef invertebrates: A case study on New Caledonian reef flats	Poster	Annex 1h
Ecosystems session room 3: Conservation Ecology			
Isabelle JOLLIT	Analyzing spatial structure of recreational coastal reef fisheries in New Caledonia for management purposes	Oral	Annex 1e
Culture and Politics session room: Society and Environment			
Jean-Brice HERRENSCHMIDT	"Heritage": the New Cultural and Institutional Challenge of Environmental Governance in the Pacific Islands.	Oral	Annex 1b
Poster session 4			
Ahab DOWNER	Analyse éco-régionale marine de la Nouvelle-Calédonie	Poster	Annex 1i
Cherie MORRIS	2008 South West Pacific Status of the Reefs	Poster	Annex 1j

Outcomes of the event are available at: <https://intelligence.eu.com/psi2009/psi2009.pdf>



► A CRISP SIDE-EVENT

Cécile Debitus (IRD Toulouse/Papeete), head of CRISP Component 2C dedicated to Bioprospection, Niel Davies (UC Berkeley - Gump Station) and David Schindel (Consortium for the Barcode of Life - Smithsonian Institution), joined forces to organize the workshop on « Access and Benefit Sharing of Genetic Resources in the Pacific ». The day-long session was designed to touch a large audience, from scientists to stakeholders, working on various issues related to biodiversity. The side-event, offering 10 presentations, was a real success attracting 56 participants from 16 different countries.



Surrounding CRISP Coordinator ABS workshop organizers: Neil Davies (front row, left), Cécile Debitus (front row, second from right), David Schindel (back row, middle), Jean-Pierre Beurrier (front row, right).

► ACCESS & BENEFIT SHARING

How to ensure that local populations from Pacific Island Countries enjoy a part of the profit generated by the development of resources discovered in their marine environment... is the main question. Bioprospection and the identification of Active Marine Substances, used for example by the pharmaceutical industry, inevitably raise complex Access and Benefit Sharing issues. This workshop was an opportunity to share experiences and legal expertises on the situation within different Pacific countries.



Dr David Schindel, Consortium for the Barcode of Life, Smithsonian Institution, co-organizer of the workshop.



ABS Workshop AGENDA

Oral and Poster presentations are presented in Annexes 2, from page 25 to 33



PSI 2009 Side-Event "Access and benefit sharing of Genetic Resources in the Pacific"

Organizers: Cécile Debitus (IRD), David Schindel (CBOL)
And Eric CLUA (CRISP)
Co-Sponsors: CRISP, Biocode, CBOL, NRC, IRD

6th March 2009

8h15: Wellcome and introduction talk by George Henderson, Minister of environment, French Polynesia
8h30: Welcome and introductions, goals of the Event; David Schindel (Smithsonian Institution), Eric Clua (CRISP)

Session 1: Legal Framework (Chair - Davies)

9h00: Current issues in International Intellectual Property Rights; Paul Uhler, National Research Council
9h15: International intellectual property Law on biotechnology and its relationship with biodiversity, Mickaël Macé and Bleuenn Guilloux, University of Nantes
9h30: Legal aspects of traditional knowledge, Carole Martinez, IUCN France
9h45: Pacific concepts of property ownership and implications for biodiversity research, Bruno Saura, UPF

10h00 - 10h30: coffee break

Session 2: ABS Legislation in the Pacific (Chair - Debitus)

10h30: The law of the protection and sustainable use of marine biodiversity in the Pacific
Presentation of the results of the Law project of component 2C (biodiversity and marine natural products) of the CRISP program: "legal aspects of use and benefits of natural marine resources"; Jean-Pierre Beurier, University of Nantes
11h30: ABS and Mega-diverse Developing Countries; Perry Ong, Director, Institute of Biology, University of the Philippines, Diliman
11h45: ABS in Melanesia - Legal aspects related to marine bioprospection in Melanesia: example of Fiji, Salomon and Vanuatu Islands; Bleuenn Guilloux, CDMO, University of Nantes

12h00: lunch break

Session 3: Research and ABS (Chair - Beurier)

13h30: Access and Benefit Sharing and the Convention on Biological Diversity: Perspectives from Non-Commercial Research; David Schindel, Smithsonian Institution
13h45: Intellectual Property issues associated with genetic resources and natural product development; Janna Tom, Univ. California Office of Technology Transfer

Session 4. Case Study – Moorea Biocode (Chair – Schindel)

14h15: Aspects of the Moorea Biocode Project; Sabine Brels, University of California Berkeley Gump Station
14h30: Panel Discussion (Biocode Consortium)

- Tea Frogier and Jean-Yves Meyer, French Polynesia Research Department
- Paula Meyer, Emmanuelle Gindre, French Polynesia Environment Department
- Len Hirsch, Smithsonian Institution
- Neil Davies, UC Berkeley Gump Station
- Hinano Teavai-Murphy, Association Te Pu Atitia

15h15 - 15h45: coffee break

15h45: Open discussion
17h00: Session adjourns





Qu'est ce que le programme CRISP (2006-2010) ?

Programme composé de 30 projets dans 17 pays du Pacifique




Double objectif:

- Contribuer à la **protection** et à la **gestion durable** des récifs coralliens en tant que support du développement des PEIP.
- Transfert de l'**expertise** des pays développés (PTOM français, AUS, NZ) vers PEIP (meilleure insertion des PTOM)

Approche: appui à des organisations existantes et développement de partenariats

CRISP

2C - Un partenariat transfrontalier

Composante 2C BIOPROSPECTION




- 2C1 Récolte & taxonomie algues et éponges
- 2C2 Recherche de substances actives
- 2C3 Amélioration du cadre juridique
- 2C4 Formation et renforcement institutionnel

CRISP
Centre for Research in Pacific Islands Science

PSI2009 – Atelier ABS – Papeete – 6 mars 2009

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Workshop on REGIONAL COOPERATION



Official opening of the workshop by the ambassador Patrick Roussel, Permanent Secretary for the Pacific.

► COOPERATION IN SCIENCE AND EDUCATION IN THE PACIFIC

Bernard Salvat (EPHE) and Randy Thaman (USP) gathered 18 speakers for a busy half-day workshop on regional cooperation. Most regional actors were represented during three distinct sessions. The first session was dedicated to International Conservation NGOs with the presence of: François Martel - CI, Kesaia Tabuna-kawai - WWF South Pacific, Etika RUPENI - Foundation for the Peoples of the South Pacific International (FSPI), Cheries MORRIS - The World Fish Center, FishBase/ ReefBase, Posa SKELTON and Richard SMITH - PACINET/ BIONET. The second session welcomed the representatives of International Research and Scientific Organisations and Initiatives: Gerard Siclet - French Academy of Sciences, Fabrice Colin - IRD Noumea et Pacifique, Grant McCall - ISISA/ PACIFIC STUDIES, Lex Thomson - SPC and CRISP's coordinator, Eric CLUA. Third session opened the stage to Pacific Regional Organizations and Universities with: John Burke Burnett and Nancy LEWIS - Pacific Science Association, Arthur Webb - SOPAC, Milika Sobey - USP, Allan TYE - SPREP, Susan Paisley - UNESCO Pacific Office, Philippe Froissard - European Commission, Ted Fong - ECONESIANS. The



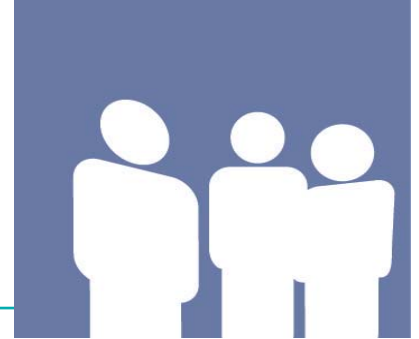
Bernard Salvat (EPHE) et Randy Thaman (USP), co-organizers of the workshop.



François Martel, Conservation International.

workshop was closed with a « General Discussion and Presentation of Resolutions to the Congress on Improved Cooperation in Science and Education for Sustainable Development in the Pacific Islands ».

CRISP COORDINATOR'S CONTRIBUTION



CRISP
Coral Reef Initiatives for the Pacific
Initiatives Corail pour le Pacifique

LE CRISP ET LA COOPÉRATION RÉGIONALE

CPS
Secrétariat général de la Communauté du Pacifique

Eric CLUA - Coordinateur

Qu'est ce que le programme CRISP (2006-2010) ?

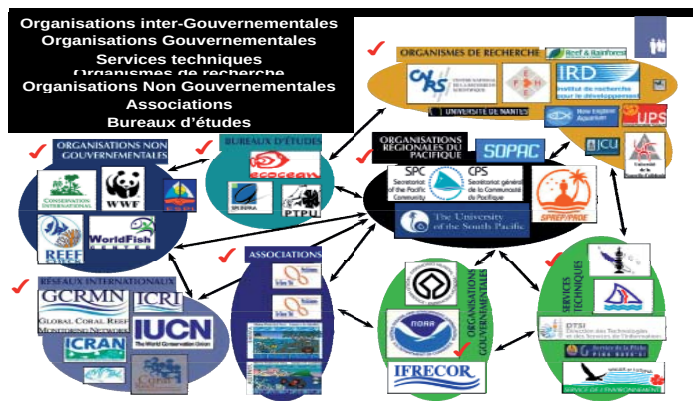
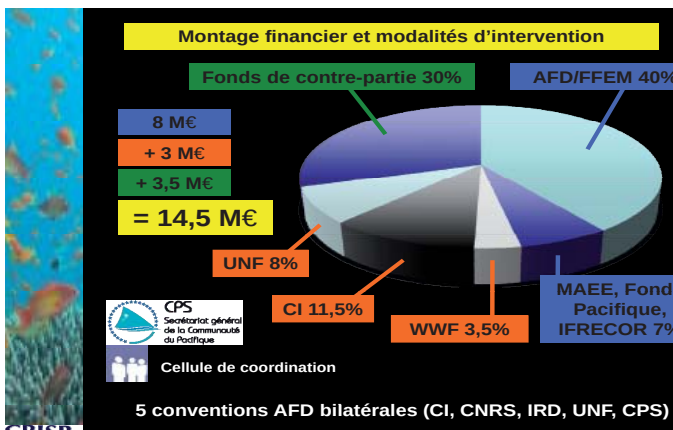
Programme composé de 30 projets dans 17 pays du Pacifique

Double-objectif:

- Contribuer à la protection et à la gestion durable des récifs coralliens en tant que support du développement des PEIP.
- Transfert de l'expertise des pays développés (PTOM français, AUS, NZ) vers PEIP (meilleure insertion des PTOM)

Approche: appui à des organisations existantes et développement de partenariats

PSI2009 – Session Coop ration r ionale – Papeete – ars 2009



Contenu technique de l'initiative

Gestion de l'espace et de la biodiversité

- Stratégie de conservation de la biodiversité
- Aires Marines Protégées
- Mise en réseau et échanges
- Gestion des bassins versants et gouvernance

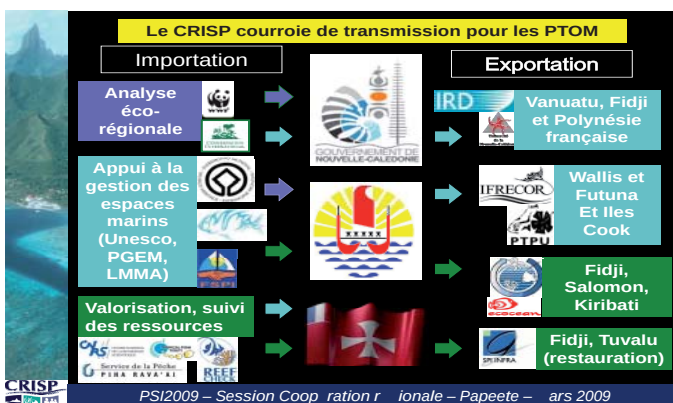
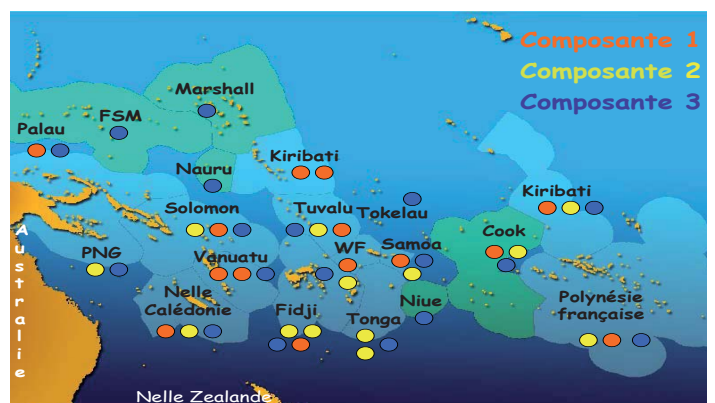
Gestion des savoirs et valorisation économique

- Connaissance des écosystèmes
- Mise au point d'outils de gestion
- Valorisation économique (PCC et SAM)
- Portail internet et base de données

Coordination et capitalisation

- Coordination des actions
- Suivi et évaluation des actions
- Intégration et diffusion des acquis

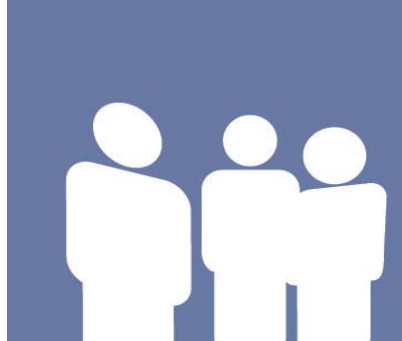
PSI2009 – Session Coop ration r ionale – Papeete – ars 2009



Formation d'étudiants

- 18 étudiants formés entre 2005 et la mi-2008, dont 3 thèses doctorales. 10 nouveaux depuis la mi-2008.
- 10 en provenance du Pacifique et 8 français
- 5 thèses doctorales dont deux françaises

PSI2009 – Session Coop ration r ionale – Papeete – ars 2009



Workshop on GOVERNANCE



About 50 persons made the trip to Moorea to attend the workshop. Front seat : Carole Martinez, IUCN France.



Tua Narii, Mayor of Rapa, presenting: The rahui in Rapa: what legitimacy, what efficiency?



Etika Rupeni, FSPI, presenting: Management of Marine Resources in Vanuatu, Salomon and Fiji: lessons learned.

► **MANAGEMENT OF MARINE RESOURCES AND HABITATS (LAGOONS AND CORAL REEFS) IN POLYNESIA: BETWEEN LEGITIMACY AND EFFICIENCY**

The CRISP programme also provided financial support to the organisation of a two-day workshop on « Management of marine resources and habitats (lagoons and coral reefs) », a major issue in the Pacific, where numerous communities are dependant on these resources for food. Organized by Tamatoa Bambridge (CNRS) and Rod Dixon (USP), co-funded by IFRECOR, and held at the CRILOBE headquarters on Moorea Island, this event scheduled more than 20 presentations focusing in particular on the role of traditional models of resource management in Polynesia (also known as “rahui” in French Polynesia and in New Zealand, or “ra’ui” in Cook Islands). The workshop was articulated around two main topics: Combine traditional models of resource management with current scientific knowledge & Traditional management of land and lagoon and the State: a fragile equilibrium. Large sessions were also dedicated to discussions.



Ecosystems session room 3: Aquaculture and Fisheries

2^{es} ASSISES DE LA RECHERCHE FRANÇAISE DANS LE PACIFIQUE
11^{EME} INTER-CONGRES DES SCIENCES DU PACIFIQUE
 HILTON HOTEL TAHITI / DU 02 AU 06 MARS 2009 www.psi2009.pf

11th Pacific Science Inter-Congress – Tahiti, French Polynesia, 2nd-6th March 2009

Toward appropriate indicators to assess the impact of coastal fisheries on reef fish communities in New Caledonia (South Pacific)

Guillemot N.^{1,2,3}, Le Pape O.², Léopold M.¹, Kulbicki M.⁴, Jollit I.¹, Chabanet P.⁵

¹ Institut de Recherche pour le Développement (IRD), Noumea, New Caledonia
² Agrocampus Ouest, Pôle Halieutique, France
³ Koniambo Nickel SAS, Noumea, New Caledonia
⁴ Institut de Recherche pour le Développement & Université de Perpignan, France
⁵ Institut de Recherche pour le Développement (IRD), La Réunion, France

SUMMARY

Toward appropriate methodologies and indicators to assess the impact of coastal fisheries on reef fish communities in New Caledonia (South Pacific)

The ongoing creation of a nickel mining complex will soon increase demographic pressure on the rural Northwest coast of New Caledonia (Southern Pacific Ocean). As a consequence, fishing pressure on reef fish resources is expected to significantly rise in this area, and there is a need to identify relevant indicators for a long-term monitoring of these resources. This paper aims at examining the impact of fishing activities on reef fish communities in New Caledonia, by analysing the structure of fish assemblages along a gradient of fishing intensity. Underwater Visual Censuses (UVC) and fisher interviews were conducted in two study areas showing contrasted exploitation levels: Northwest and Southwest lagoons, the latter being already subjected to high fishing pressure. In situ data was then analysed with relation to spatialized fishing data. Because of a high spatio-temporal variability of reef fish assemblages in New Caledonia, the use of functional groups and eco-trophic guilds was preferred to a taxonomic approach. Our results highlighted an effect of fishing intensity on fish assemblages, with significant interactions between size and functional structures in terms of biomass and density. These analyses allowed identifying relevant indicators that could be used for a longterm monitoring on the Northwest coast study site. As a step toward their use for local management, it also provided clues for establishing reference points associated with these indicators. Nevertheless, UVC methods remain not fully appropriate to alone characterise fishing impacts. In situ complementary methods (e.g. video observations) may provide supplementary data on targeted species and exploited biotopes that cannot be surveyed by UVC. Furthermore, validation of UVC data and future monitoring should still be based on fish landing surveys, especially targeting informal fishers.



Culture and Politics session room: Society and Environment



PSI- Papeete, March 2009

Jean-Brice
Herrenschmidt
Géographie culturelle

'Heritage':

*the New Cultural and Institutional Challenge of
Environmental Governance in the Pacific Islands*

ORGANISATION

PROGRAMME

FUNDING AGENCIES



SUMMARY

« Heritage »: the New Cultural and Institutional Challenge of Environmental Governance in the Pacific Islands.

- Integrated Management of the Environment : Globalization of the « Heritage » Concept
The environmental challenges becoming global, everyone agrees on the need for promoting their integrated management at all scales. The Environment is now conceived as a “Heritage” that is to be transmitted to the next generations as a necessary condition for Human sustainability. These concepts seem obvious and universal. In fact, they are developed by dominant world ideologies and impose new gaps and issues.
- Governance and Environment: the Complex Equation
Importing external concepts, Environmental programs in the Pacific Islands face cultural and institutional gaps. Different governance risks then occur. Many examples show that they, consciously or not, promote social and cultural changes and modify the legitimacies in decision systems, at all scales from village to national organizations. Some tools can be useful to fill gaps, such as information sharing between stakeholders, but the lack of investments in Environment management, as a sustainable development basis, remains a critical issue.
- International labels, networks and “development brokers”: how to regulate the Big Pacific Islands Environmental Market?
The pressure put by the environmental programs on the South Pacific states governance is a real issue. The Pacific Islands Environment becomes a big and wild Market and all the environmental stakeholders are de facto involved in the international cooperation arena. The need for synergies, integration of scales and states control and monitoring requires funds, especially on social and cultural monitoring capacity.



Ecosystems session room 2: Natural Products and Ecotoxicology



Sarasinoides of the sponge *Amorphinopsis excavans* from Solomon Islands

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Presented by

Sylvain PETEK

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SUMMARY

Sarasinoides of the Sponge *Amorphinopsis excavans* from Solomon Islands

In the course of the ongoing program of CRISP on the isolation of new bioactive metabolites from marine sponges collected in the South Pacific, the study of the marine sponge *Amorphinopsis excavans* from Solomon Islands afforded a mixture of sarasinoides. Six compounds were isolated and their structures were determined thanks to LC/MS and LC/MS/MS data. Only one of these molecules was new: sarasinoid B4, which is an isomer of sarasinoid B1.

The structure elucidation of these compounds, which differ either by the sugar or the aglycone moiety, was carried out on the basis of 2D NMR experiments and MS/MS data. Sarasinoides consist of five sugars, e.g. N-Ac-galatosamine, glucose, xylose and N-Ac-glucosamine. The aglycone moiety differs in the presence and position of the double bonds. To our best knowledge, sarasinoides have been yet isolated only from marine sponges of the genera *Asteropus* and *Erylus*.¹⁻⁴ We report for the first time the isolation of a new sarasinoid; sarasinoid B4 in the marine sponge species *Amorphinopsis excavans* together with five known sarasinoides.



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Spatio-temporal structure and functioning of harvested intertidal marine invertebrates : application to New Caledonian reef flats

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RESUME

Structure spatio-temporelle des populations d'invertébrés benthiques des platiers récifaux pêchés du Grand Nouméa

Les ressources marines constituent un apport alimentaire, économique ou récréatif important pour les pays en voie de développement des îles du Pacifique sud. Parmi elles, les invertébrés peuvent représenter une grande partie des espèces cibles pour les populations locales. Ils sont ramassés en plongée ou à pied pendant les marées basses. La pêche à pied se pratique de façon informelle et ciblent de nombreuses espèces, c'est pourquoi elle est difficile à quantifier. De plus, la perturbation entraînée par le piétinement des pêcheurs peut à son tour affecter l'écosystème. Les conséquences biologiques et écologiques de cette pratique sont encore mal connues et l'application d'une approche écosystémique incluant l'homme, la ressource et l'environnement semble nécessaire pour une gestion durable des ressources marines.

Dans ce cadre général, cette étude, faisant partie d'un travail de thèse, se propose de décrire la structure spatio-temporelle des populations d'invertébrés benthiques des platiers soumis à différents niveaux de pression de pêche en prenant compte des habitats occupés par les espèces. Elle met l'accent sur les changements des descripteurs biologiques tels que la densité et la biodiversité spécifique, ainsi que des descripteurs fonctionnels tels que la taille et le régime alimentaire sous influence de la pêche. On s'attend à une diminution de densité et de biomasse des espèces cibles ainsi que des changements de biodiversité de l'ensemble de la communauté benthique. L'étude est appliquée aux platiers côtiers et platiers d'îlots du Grand Nouméa où la pratique de la pêche à pied est essentiellement récréative et de pression différente. Les premiers résultats décrivant la composition de la communauté benthique en fonction de la pression de pêche et de l'habitat seront présentés.



Ecosystems session room 3: Conservation Ecology

Analyzing spatial structure of recreational coastal reef fisheries in New Caledonia for management purposes

Isabelle Jollit

PhD student

Pacific Science Intercongress, March 2nd-7th, 2009

Under the scientific direction of:
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SUMMARY

Analyzing spatial structure of recreational coastal reef fisheries in New Caledonia for management purposes

The coral reefs in New Caledonia have long been used by local populations for nutritious, economical and recreational purposes. The recreational fisheries produce one of the most impacting effects on coral reef ecosystems, especially in the south west lagoon around Noumea the capital and economic center of the country. Indeed, in this area are concentrated 70% of private boats, 75% of them practise recreational fishing.

The aim of this communication is to analyze three recreational fishery geosystems in the South West lagoon and test their suitability for environment management purposes, including AMP management.

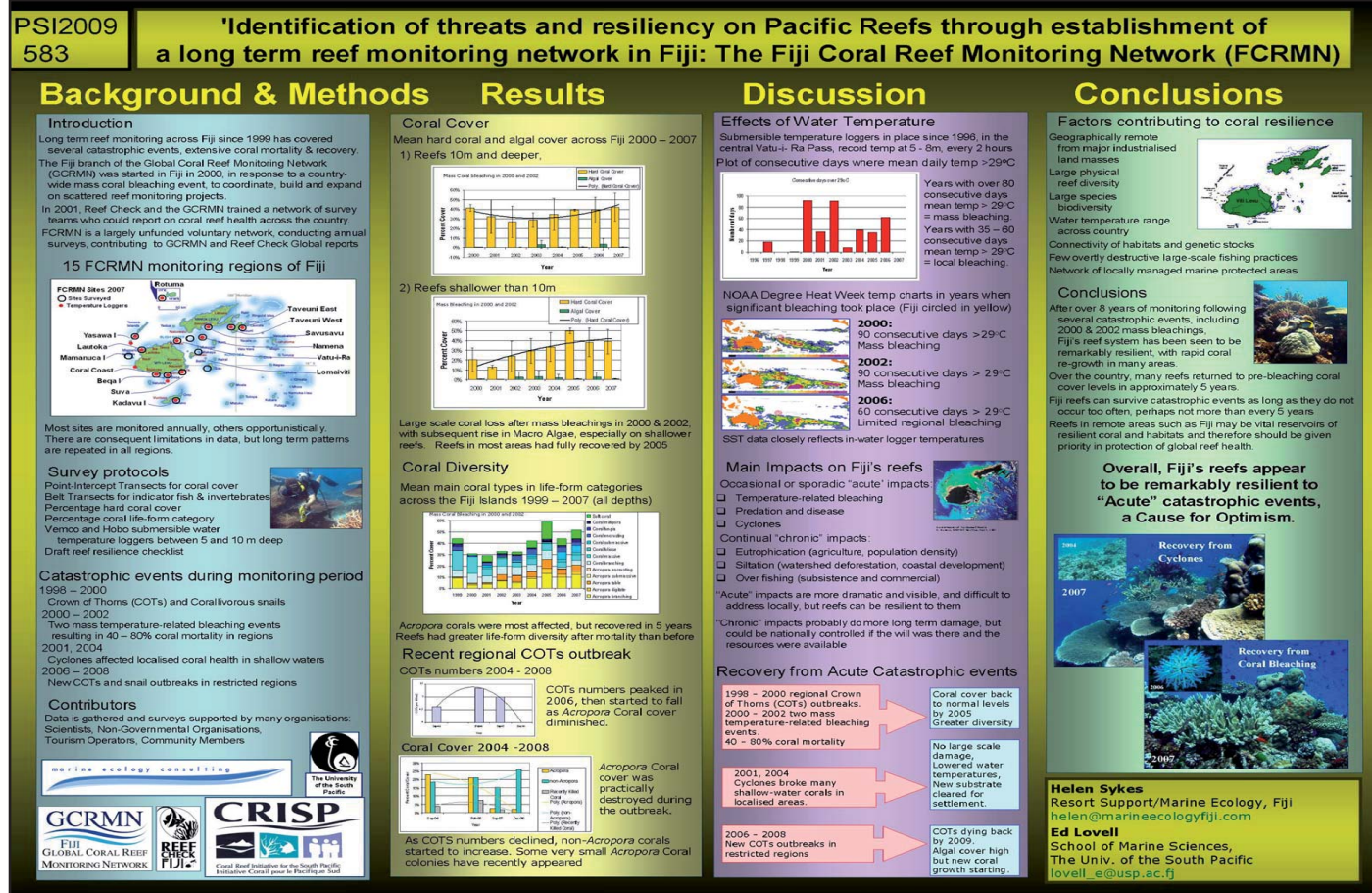
Fishery geosystems depend on social, natural and management environments. Their identification was based on questionnaires and maps filled by fishers themselves. In 2005, 500 questionnaires and maps were collected. These data have been compared to aerial observations implemented in 2006. Spatial analyses were conducted on both methods within a Geographical Information System. Statistics such as active fishing fleet, fishing effort and total catches... were estimated on an annual basis which permitted to generate a typology of fishers.

The ways of life (rural, peri-urban and urban) of fishers were found to be a major structuring factor in the spatial distribution of the activity and in the fishers' behaviour. Our observations suggested that they have been shaped by socio-economic changes since the 1900s.

Eventually, the analysis of recreational fishery geosystems validated the suitability of spatial approaches to coral reef fisheries management. These analyses provide local stakeholders with original management clues for marine resources sustainability. The experience gained in the south west coast could then be profitable to the management of the coral reef ecosystems including the monitoring of AMP and local ongoing nickel mining project. The need for management is all the more important since part of the lagoon has recently been classified as UNESCO World Heritage sites.



Ecosystems session room 1: Long term monitoring



SUMMARY

A Cause for Optimism: Identification of threats and resiliency on Pacific Reefs through establishment of a long term reef monitoring network in Fiji: The Fiji Coral Reef Monitoring Network (FCRMN)

The Fiji Coral Reef Monitoring Network (FCRMN), a node of the Global Coral Reef Monitoring Network (GCRMN) includes scientists, tourism operators, and community members. Long term monitoring of reefs across the Fiji Islands for nine years included mass temperature-related coral bleaching events, cyclones, and Crown-of-thorns seastar (COTS) outbreaks.

Survey protocols used variants of Point-Intercept Transects for coral cover, and Belt Transects for indicator fish and invertebrate populations. Percentage hard coral cover was used for regional and time-line comparisons. More detailed protocols allowed comparisons by coral life-form category. Data was compiled through the Coral Reef Initiative for the South Pacific (CRISP).

Coral cover fell dramatically in 2000 – 2002 after two mass bleaching events, plus regional COTS outbreaks, but recovered to pre-bleaching levels by 2005. Cyclones affected localised coral health in shallow waters, but caused no large scale or permanent damage, and in some cases served coral recovery by lowering water temperatures and clearing new substrate for settlement.

Overall, Fiji's reefs appear to be remarkably resilient to sudden catastrophic events, a cause for optimism. Major "chronic" continual impacts on coral reef health: Eutrophication, Siltation (deforestation / coastal development), Over fishing

Occasional or sporadic "acute" impacts on coral health: Temperature-related bleaching, Predation and disease, Cyclones

Features contributing to coral resilience: Geographically remote from industrialised land masses, Large physical reef diversity, Connectivity of habitats and genetic stocks, Few overtly destructive fishing practices, Network of locally managed marine protected areas.

Études comportementales et de vulnérabilité de la population de requins citron (*Negaprion acutidens*) sur le site de « feeding » d'Opunohu à Moorea, Polynésie française.



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Introduction

Le développement d'une pêche active sur les requins pour le commerce des ailerons sur la marché asiatique est devenu préoccupant pour la survie de nombreuses espèces. Or, beaucoup d'inconnues persistent sur ces espèces lorsqu'il s'agit de comprendre le fonctionnement des populations (organisation sociale, mode de reproduction, renouvellement). Depuis le 28 avril 2006, les requins sont protégés en Polynésie et leur pêche est interdite. En complément de cette initiative, des études ont été mises en place sous l'initiative de la Direction à l'environnement de Polynésie. Une de ces actions s'est focalisée sur l'étude de la petite population de requins citron, *Negaprion acutidens*, de l'île de Moorea et plus particulièrement sur le site de « shark feeding » d'Opunohu, sur la pente récifale externe. L'objectif est de comprendre le fonctionnement de cette population en termes de comportements pour mieux appréhender le renouvellement de cette population.



Pourquoi un site de « shark feeding »?

Depuis le milieu des années 1980, certains centres de plongées apportent un appât sur le site d'Opunohu pour faciliter l'observation des requins. Au-delà des polémiques que suscite le « feeding », le conditionnement de ces requins citron en fait un laboratoire d'étude en milieu naturel unique. La richesse des observations quasi-quotidiennes établit une banque de données inespérée, qui ne pouvait être envisagée sans cette activité qui perdure depuis près de 25 ans.



Negaprion acutidens

Requin citron ou limon faucille (fra), Arava(tah)

Taille: jusqu'à 3,4m.

Habitat: lagon pour les juvéniles et baies, passes et pentes externes pour les adultes.

Alimentation: poisson et raies.

Reproduction: vivipares pour une gestation de 10 à 11 mois

Objectifs généraux :

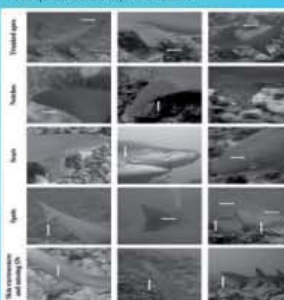
L'objectif de ce travail est de compiler et de collecter toutes les informations disponibles sur une espèce de requin afin d'estimer la vulnérabilité d'un stock insulaire de requin. Nous avons choisi le requin citron (*Negaprion acutidens*) de Moorea comme modèle pour ce travail, car il s'agit d'une population relativement limitée en nombre qu'il est possible d'analyser dans sa globalité sur une période d'étude de quatre ans. Cette double étude mettra en parallèle la collecte de données concernant les différents comportements observés tels que les variations d'abondance, de reproduction et au « feeding », et la vulnérabilité de l'espèce par le biais de la génétique.

1^{ère} étape: reconnaître les requins par la photo identification

4 objectifs:

- La photo identification permet de mieux appréhender les caractéristiques propres à chaque requin telles que la taille, le sexe, les cicatrices, les amputations, les tâches de différentes couleurs, de quantifier la population, la taille de la population, le sex-ratio, etc... 20 femelles et 17 mâles ont pu ainsi être identifiés durant les 4 ans d'études mesurant de 2,1m à 3,2m.
- C'est un moyen moins traumatique pour les animaux que celui du marquage avec incréation d'un « tag » en permanence.
- La reconnaissance individuelle de chaque individu permet un gain de temps considérable pour les observations quotidiennes.
- Évitera de biopser plusieurs fois les mêmes individus lors de l'échantillonnage pour la génétique.

Exemples de caractéristiques individuelles



Chaque requin a un faciès différent

2^{ème} étape: études des comportements

A) Variations annuelles d'abondance

Du 1^{er} janvier 2005 au 31 décembre 2008, 1013 matinées d'observations systématiques en plongée sous-marine ont été effectuées afin de répertorier la présence ou non de chaque requin. La compilation de toutes ces données permet d'évoquer les résultats suivants:

- la notion de « résidence » chez certains requins (tableau 1);
- une chute de présence sur le site d'Opunohu pendant les périodes de reproduction en septembre et octobre, notamment des mâles (cf. courbes).

Tableau 1: Répartition des requins en fonction de leur « résidence »

	Nombre de « résidents » + de 50% des observations	Nombre de « non résidents » + de 30% sur les 2 dernières années	Nombre de « semi résidents » entre 10 et 20% des observations	Nombre de « non résidents » + de 10% des observations pendant l'étude	Nombre de « résidents » pendant l'étude
Mâles	3	1	4	3	1
Femelles	4	2	5	2	3
Total	9	3	6	5	4



B) Comportement lié à la reproduction (août à octobre)

- Le suivi de cette population a permis l'observation de différents comportements physiques et temporels comme le montre le diagramme suivant. A noter que durant la période de reproduction, les mâles « résidents » disparaissent alors que des mâles « non résidents » viennent courtiser les femelles.
- Les dates des mises bas sont notées afin de faire la relation entre les mères et le lieu de captures des juvéniles. Les résultats génétiques des juvéniles nous donneront leur mère et nous pourrions ainsi localiser le lieu de mise bas.
- Pour les femelles un cycle dure 2 ans.

Reproduction cyclique



C) Comportements liés au « feeding »

- Un conditionnement des requins attirés par l'odeur de l'appât est bien réel le matin sur Opunohu avec une moyenne de 5,6 individus par jour sur 4 ans. Mais de nombreuses irrégularités empêchent de parler de « dépendance » notamment le faible % de requins en période de reproduction (cf. courbes ci-dessus).
- La notion de « dominants et dominé » existe chez les citrons. Ces observations sont empiriques mais sont bien réelles. Nous pouvons dire que plus le requin est grand par la taille et « résident » plus il domine les autres.
- Suivant la période l'année, il est possible qu'une compétition entre mâles pour le gain de l'appât s'observe. Les plus « dominants » pourront alors devenir « agressifs ».

C'est rare mais le « feeding » peut regrouper jusqu'à 10 individus différents

Le « feeding » permet d'identifier les requins citron de très près



3^{ème} étape: étude de la vulnérabilité par la génétique

A) Objectifs de l'étude génétique

- Valider la photo identification par les différences génétiques entre chaque individu.
- Effectuer le lien entre chaque individu afin de déterminer la diversité génétique dans la population de Moorea. Les résultats donneront le nombre de « familles » différentes.
- Démontrer s'il existe ou non de la consanguinité due au « shark feeding » sur le site d'Opunohu? Et au contraire prouver ou non que les mâles « non résidents » viennent féconder les femelles d'Opunohu afin d'optimiser le brassage génétique.
- Etablir des relations de parenté s'il en existe avec des individus biopsés dans d'autres atolls ou îles.

B) Les prélèvements ou biopsies

- Les biopsies sur 29 adultes ont été effectuées à l'aide d'un fusil de pêche sous-marine muni d'un emporte pièce spécial en bout de fleche.
- 22 juvéniles ont été pêchés et biopsés dans 4 nurseries du lagon de Moorea sur 3 ans (2006-2009).

C) Analyses en laboratoire

- Optimisation de 12 loci microsatellites et génotypage de 50 individus
- Analyses des résultats de parenté en cours.

Conclusions

Durant cette étude, seulement 37 requins citron différents ont été observés et étudiés, dont 25 sont « non résidents ». Cela démontre que si l'activité du « shark feeding » est suffisamment efficace pour quantifier la population de cette espèce, cette dernière demeure très faible pour une île grande comme Moorea. Nous avons également réussi à montrer que les femelles adultes mettent bas dans le lagon une fois tous les deux ans après une gestation de 10 à 11 mois, pour une portée certainement inférieure à 10 requins. Ces bébés requins vivront entre 7 à 10 ans dans cet habitat lagunaire jusqu'à ce qu'ils deviennent sexuellement matures pour le quitter et rejoindre la pente récifale externe. Parallèlement, la pression démographique sur le lagon se fait ressentir à travers diverses activités comme le braconnage (la pêche aux requins citrons est interdite), les constructions, les différentes pollutions dont l'arrivée d'eau « boueuse » due aux défrichages des montagnes qui étouffe les coraux, etc... Si une prise de conscience de la population ne s'opère pas rapidement, quant à la protection du lagon de Moorea, c'est non seulement les requins citron mais aussi toutes les autres espèces et l'écosystème qui seront directement menacés d'extinction.

Remerciements:

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Spatio-temporal structure of harvested tropical reef invertebrates :

A case study on New Caledonian reef flats

H. Jimenez⁽¹⁾, P. Dumas⁽¹⁾, J. Ferraris⁽²⁾

CONTEXT

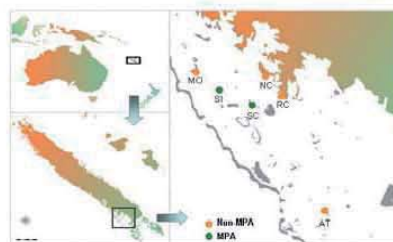
In the south-Pacific islands, the marine invertebrate resource represents a major income for the local populations, but little quantitative data is available about the ecological impacts of harvesting on the tropical reef invertebrate communities.

Objectives

This work is part of a PhD-thesis whose main objectives are :

1. To describe the spatio-temporal structure & functioning of benthic invertebrates communities in harvested vs. non-harvested reef flats ;
2. To assess the biological & ecological impacts of harvesting within the studied systems ;
3. To derive relevant Indicators metrics.

Case Study : New Caledonia

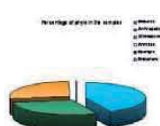
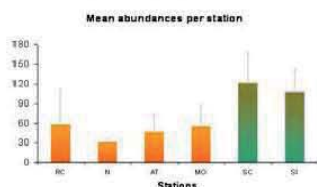


Material & Methods

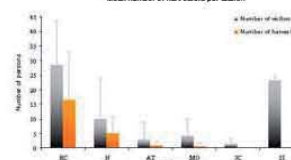
- 6 sites located in the south-west lagoon of New Caledonia, South Pacific, were sampled in 2008 : 4 harvested vs. 2 MPAs (Marine Protected Areas).
- All invertebrate including molluscs, echinoderms and crustaceans were counted and their lengths were measured.
- The mean number of harvesters and visitors was assessed for each station using questionnaires.

PRELIMINARY RESULTS

Abundances

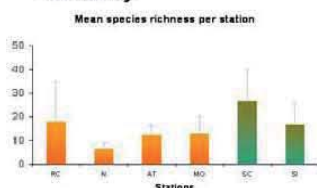


Mean number of harvesters per station



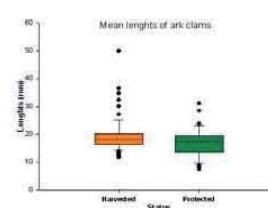
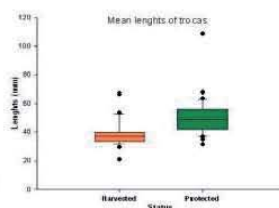
A total of 2044 individuals belonging to 163 species were identified. Molluscs were dominant, followed by the crustaceans and echinoderms. The densities of benthic invertebrates were higher on MPAs than on exploited sites for all species whatever the harvesting pressure is.

Diversity



Species richness did not significantly differ inside vs. outside MPAs for all species.

Sizes



Results highlighted significantly smaller body length for the harvested species outside MPAs, especially for heavily exploited species e.g. trochus shells (*Trochus niloticus*) and giant clams (*Tridacna* spp.). No significant difference in sizes were observed for non-harvested, associated species.

CONCLUSION & PERSPECTIVES

As suspected, these preliminary results emphasize the influence of harvesting practises on reef invertebrate abundances and sizes. On the other hand, harvesting does not seem to affect species diversity for the considered tropical intertidal communities. Valuable, heavily harvested species such as Trochus shells or giant clams exhibit strong sensitivity in terms of abundance and lengths and therefore constitute relevant indicator of harvesting activities.

While their effects on community structure are well documented, harvesting activities can also affect community functioning through changes in species dominance. This "functional diversity" approach will be investigated so as to define relevant indicators metrics of harvesting-induced disturbance, a potential tool in the context of sustainable management of marine resources.



Poster session 4




ANALYSE ECOREGIONALE MARINE de la NOUVELLE-CALÉDONIE

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INTRODUCTION

Dans le cadre de l'initiative pour les récifs coralliens du Pacifique sud (CRISP), lancée en 2005 par l'AFD et ses partenaires, le WWF-France a souhaité développer un projet pour la protection des récifs et des lagons néo-calédoniens. Ce projet s'inscrit dans la composante 1 du CRISP (aires marines protégées et gestion côtière intégrée), pilotée par Conservation International.

Le projet développé par le WWF-France a 3 objectifs :

➔ **Objectif 1 :** réaliser l'analyse écorégionale marine (AER) de la Nouvelle-Calédonie. L'AER est destinée à identifier, à une échelle géographique cohérente, un réseau d'aires prioritaires, d'intérêt majeur pour la conservation de la biodiversité et des ressources marines, et à rassembler les acteurs (scientifiques, politiques, communautés locales) autour d'une vision et d'une stratégie communes pour leur protection.

Ce travail d'analyse écorégionale a été conduit en étroite coordination avec le processus d'inscription du lagon de Nouvelle-Calédonie au Patrimoine mondial de l'UNESCO et a fourni les bases pour l'élaboration du dossier d'inscription. Il a notamment permis de participer à l'identification et à la description des sites à inscrire au Patrimoine mondial et de fournir des éléments sur leur valeur universelle.

Objectif 2 : accompagner les Provinces dans la création et la gestion d'aires marines protégées. La zone du mont Panié pour la Province nord et la réserve Yves Merlet, pour la Province sud, ont été retenues. Les projets dans ces deux zones sont en cours.

Objectif 3 : renforcer les capacités des gestionnaires et capitaliser les expériences en matière de création et de gestion d'aires marines protégées (AMP).

L'AER marine de Nouvelle-Calédonie, commencée en 2005, est achevée à ce jour. Les résultats ont fait l'objet d'un rapport de synthèse, rédigé par le WWF-France.

PRESENTATION DE LA METHODE

L'analyse écorégionale du lagon de la Nouvelle-Calédonie comporte 3 phases :

1ère phase : 2005
Atelier d'identification des sites qui présentent les plus forts enjeux patrimoniaux, ces aires de conservation prioritaires (ACP) ont été identifiées au cours d'un atelier de travail rassemblant l'ensemble des scientifiques du territoire.

La première phase de l'analyse écorégionale destinée à identifier les sites à forts enjeux patrimoniaux a reposé sur un travail préliminaire de bibliographie et d'enquêtes auprès des scientifiques, destiné à rassembler les données existantes sur la biodiversité, les espèces remarquables, la fonctionnalité des milieux... sur le travail d'un certain nombre d'experts ayant réalisé des synthèses spécifiques sur certains thèmes (benthos, poissons, mammifères marins, oiseaux, etc.), et enfin sur un atelier de travail, ayant pour objectif de rassembler les scientifiques et les experts du lagon néo-calédonien pour identifier, sur la base de leur connaissance experte, les zones les plus remarquables du lagon, sur lesquelles doivent porter en priorité les efforts de conservation.

2ème phase : 2006
Identification des pressions et des menaces qui pèsent sur ces sites.

Un travail d'identification et de quantification des pressions qui pèsent sur les récifs calédoniens a été réalisé et les données ont été rassemblées dans un rapport de synthèse (M. Juncker, 2006). Cette étude a logiquement porté sur les activités pour lesquelles les données étaient disponibles.

3ème phase : 2007
Atelier de « Vision & Stratégie » destiné à s'accorder sur une vision à l'horizon 2050 pour cette écorégion marine et proposer des orientations pour la protection et la gestion de cet ensemble de sites.

La troisième phase de l'AER a consisté à croiser les données relatives aux richesses biologiques avec les données de pression et menaces, ceci en vue de hiérarchiser les aires à intérêt prioritaire. Un atelier a été organisé en vue de faire valider par l'ensemble des participants : les aires de conservation prioritaires définies deux ans plus tôt, en rediscutant de leurs limites et de leurs niveaux d'intérêt, d'améliorer les études complémentaires, d'établir une vision commune pour le patrimoine marin calédonien à l'horizon 2050, et enfin de proposer une liste de recommandations et/ou d'orientations pour la préservation et la gestion du lagon.

RESULTATS GLOBAUX

Atelier d'identification des ACP

L'atelier a été organisé par le WWF-France, avec la collaboration de l'IRD, de la DTSI et du CRISP. Il a rassemblé 40 scientifiques de divers organismes du territoire : IRD, UNC, CPS et différentes associations, opération cétacés, l'ASSNC, Corail vivant, bureau d'études, ainsi que les responsables administratifs des Provinces. Les études, synthèses et informations apportées par les experts ont montré l'extrême richesse et l'originalité du lagon néo-calédonien qui résulte de sa position géographique dans le Pacifique sud, proche du centre de dispersion, de la diversité des environnements, de la géomorphologie et des habitats.



Résultat : 19 aires de conservation prioritaires (ACP), classées selon un critère d'intérêt défini à dire d'experts, selon 3 niveaux : international, régional ou local. L'appartenance d'une ACP à tel ou tel rang d'intérêt dépend de sa valeur en terme de biodiversité et de ressources naturelles. Les aires les plus importantes sont classées en intérêt international, et signifie que cette richesse ne peut être retrouvée ailleurs sur la planète, d'où l'importance de leur conservation prioritaire (rouge). Les ACP de rang d'intérêt régional indiquent une importante valeur biologique au sein du Pacifique sud (orange). Enfin, les ACP de rang d'intérêt local signalent des richesses à l'échelle de la Nouvelle-Calédonie (vert).

Etudes des pressions et menaces

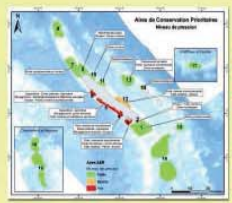
Résultat : 20 pressions et menaces, liées à des perturbations d'origine naturelle ou anthropique ont été recensées. Cette étude a porté sur les activités pour lesquelles les données étaient disponibles.

Les principales pressions exercées sur les récifs de Nouvelle-Calédonie sont :

- les apports terrigènes liés à l'érosion,
- les rejets d'eaux usées et des infrastructures liées à l'urbanisation,
- le braconnage et la surexploitation des ressources marines sur certains sites.

Atelier " Vision & Stratégie " : Niveaux de pressions et menaces

Le croisement de l'importance des aires avec l'intensité des pressions a été réalisé et validé de façon collégiale par l'ensemble des 150 participants à l'atelier « Vision & Stratégie ». Il révèle que les sites de la baie de Prony, le lagon centre-ouest, puis le lagon du Grand Nouméa et le site de Hienghène doivent concentrer tous les efforts de protection.



Les Voies de l'action : recommandations et orientations stratégiques

Les voies de l'action ont été regroupées selon 3 grands domaines stratégiques :

Domaine stratégique I : RENFORCEMENT INSTITUTIONNEL et GESTION des AMP

OBJECTIF 1 : L'environnement institutionnel et juridique des AMP est adapté au niveau de la Nouvelle-Calédonie et de la région.

OBJECTIF 2 : Un réseau cohérent d'AMP est géré de façon coordonnée à l'échelle de la Nouvelle-Calédonie.

OBJECTIF 3 : Une politique régionale de communication et d'éducation environnementale sur le lagon favorise l'adhésion des décideurs, des populations locales et du grand public.

OBJECTIF 4 : Des moyens de suivi et de contrôle des AMP sont mis en place.

OBJECTIF 5 : Des moyens de recherche et de suivi des priorités de conservation et des pressions et menaces majeures sont mis en place.

Domaine stratégique II : CONTRIBUTION des AMP à la GESTION des RESSOURCES et au DÉVELOPPEMENT DURABLE

OBJECTIF 1 : Des mécanismes participatifs sont mis en place pour poser les bases d'un développement local durable.

OBJECTIF 2 : Les ressources halieutiques des AMP sont valorisées et utilisées tout en assurant leur régénération et en respectant les équilibres écologiques, au profit d'une pêche durable.

OBJECTIF 3 : Le réseau des AMP contribue à promouvoir une gestion durable des ressources partagées.

Domaine stratégique III : RECHERCHE SCIENTIFIQUE à partir des AMP

OBJECTIF 1 : Les connaissances de l'écologie du lagon et de la biologie des espèces emblématiques sont renforcées.

Au sein de chacun de ces domaines, plusieurs objectifs ont pu être définis, eux-mêmes déclinés en 26 recommandations et une liste d'orientations par type de pression/menace.

CONCLUSION

Tous les résultats issus des différentes phases ont été intégrés dans un document de synthèse reprenant l'ensemble de la méthode de l'AER.

A l'issue de l'AER marine de la Nouvelle-Calédonie, il a été :

- présenté, précisé, validé et hiérarchisé les 19 aires de conservation prioritaires du milieu marin de la Nouvelle-Calédonie, en rediscutant de leurs limites et de leurs niveaux d'intérêt (international, régional, local) et de pression/menace,
- établi une vision commune pour le patrimoine marin calédonien à l'horizon 2050,
- proposé une liste de recommandations et/ou d'orientations pour la préservation et la gestion du lagon.

Ce travail considérable d'expertise collégiale prendra tout son sens dans la mise en œuvre effective des orientations de gestion qui en découlent.

Dans cette perspective, le document synthétique de l'AER sera proposé à la signature des autorités et pouvoirs publics pour contribuer au cadre de référence des actions de conservation du milieu marin pour les prochaines décennies.

2^{ème} ASSISES DE LA RECHERCHE FRANÇAISE DANS LE PACIFIQUE
11^{ème} INTER-CONGRES DES SCIENCES DU PACIFIQUE
HILTON HOTEL TAHITI • DU 02 AU 06 MARS 2009
www.psi2009.pf






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“Le lagon néo-calédonien dispose de valeurs naturelles et culturelles que nous voulons protéger et gérer durablement pour assurer le développement harmonieux des populations locales actuelles et futures. Cette volonté s'exerce en synergie avec les autres démarches visant à limiter les effets des changements mondiaux susceptibles d'anéantir nos efforts régionaux de conservation.”



Annex 1j: POSTER PRESENTATION PSI 2009

Poster session 4



SUMMARY

2008 South West Pacific Status of the Reefs

Fiji, New Caledonia, Vanuatu, Solomon Islands, Samoa and Tuvalu report monitoring data for this report; Nauru has not conducted recent monitoring. The Coral Reef Initiative for the Pacific (CRISP) has provided funding for monitoring activities in this region.

A broad range of observers (scientists, students, dive guides and communities) assist with reef monitoring. Substrate cover changes from 2003 to 2007 were due to effective management or local disturbances, coral predation and natural disasters. Average coral cover at monitoring sites was: 45% in Fiji; 27% in New Caledonia; 43% in Samoa; 30% in Solomon Islands; 65% in Tuvalu; and 26% in Vanuatu. Densities of edible fish and invertebrates remained generally low (0-10/100m²) in 4 countries reflecting high subsistence and commercial fishing pressure. Butterflyfish, parrotfish, surgeonfish and damselfish were generally most dominant. High densities of parrotfish were reported from 4 countries.

A network of temperature loggers has been established within the Node to collect long-term data on temperature relationships with coral bleaching.

There are multiple stressors, including coral predation, temperature variation, coral bleaching, cyclones, tsunamis and earthquakes. An earthquake and tsunami in April 2007 damaged reefs and other coastal habitats in the Solomon Islands. The major human disturbances are over-fishing, pollution, sedimentation, eutrophication and coastal development. In response, communities and resort owners are managing local marine areas such that coral health and fish populations are improving.

There is a need for long-term monitoring to understand the changes in reefs. Most monitoring is coordinated by Fisheries Departments, without sufficient resources, capacity or funding. The non-participation of Nauru is an example.



Current Issues in International Intellectual Property Law

Access and Benefit Sharing of Genetic Resources in the Pacific
Pacific Science Association Conference
6 March 2009

by
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SUMMARY

Session 1 : Legal Framework

Current Issues in International Intellectual Property Rights

Intellectual property rights (IPRs) have been getting longer, broader, and stronger ever since their inception several hundred years ago. This trend has accelerated greatly in recent decades as many parts of the world have begun to transition from industrial to post-industrial “knowledge” economies. The trend has been reflected in the international treaties of the World Intellectual Property Organization (WIPO), the World Trade Organization (WTO), and other more specific intergovernmental organizations, and implemented through national legislation, regulations, and policies. Although usually developed and adopted first by OECD countries, many developing countries have been implementing the same laws as well. These various laws have been promoted almost exclusively by large multinational industry sectors, such as pharmaceuticals, software, publishing, and film and music. The actual interests and applicability of these laws to less developed countries, or, for that matter, to smaller businesses and consumers in the more economically developed countries, have tended to be disregarded or marginalized in the push for expansive exclusive property rights.

In very recent years, there have been a number of developments at the international and national levels that have sought to balance the interests between rights holders and the public, and between the wealthier and poorer countries. Some of these efforts have taken place within the public law domain of intergovernmental organizations, such as the Development Agenda at WIPO, while others have been sector-specific or nationally focused. One important approach that has emerged in the past few years is in private contract law, which seeks to promote the voluntary adoption of agreements between parties of “some rights reserved”, instead of the full restrictions of the statutory IP regimes. Such “common use” contracts seek to preserve the rights that are most important to the owner of the IPRs, while allowing users of the intellectual property greater freedom to access and reuse it in more socially beneficial ways.

This presentation will provide an overview of these developments in public and private law in the intellectual property arena, and particularly as they relate to the interests of developing countries and the non-profit research community.



Le droit international des biotechnologies et ses relations avec la biodiversité

Bleuenn Guilloux (CDMO)
avec la participation de Mickaël Macé (IRDP)
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SUMMARY

Session 1 : Legal Framework

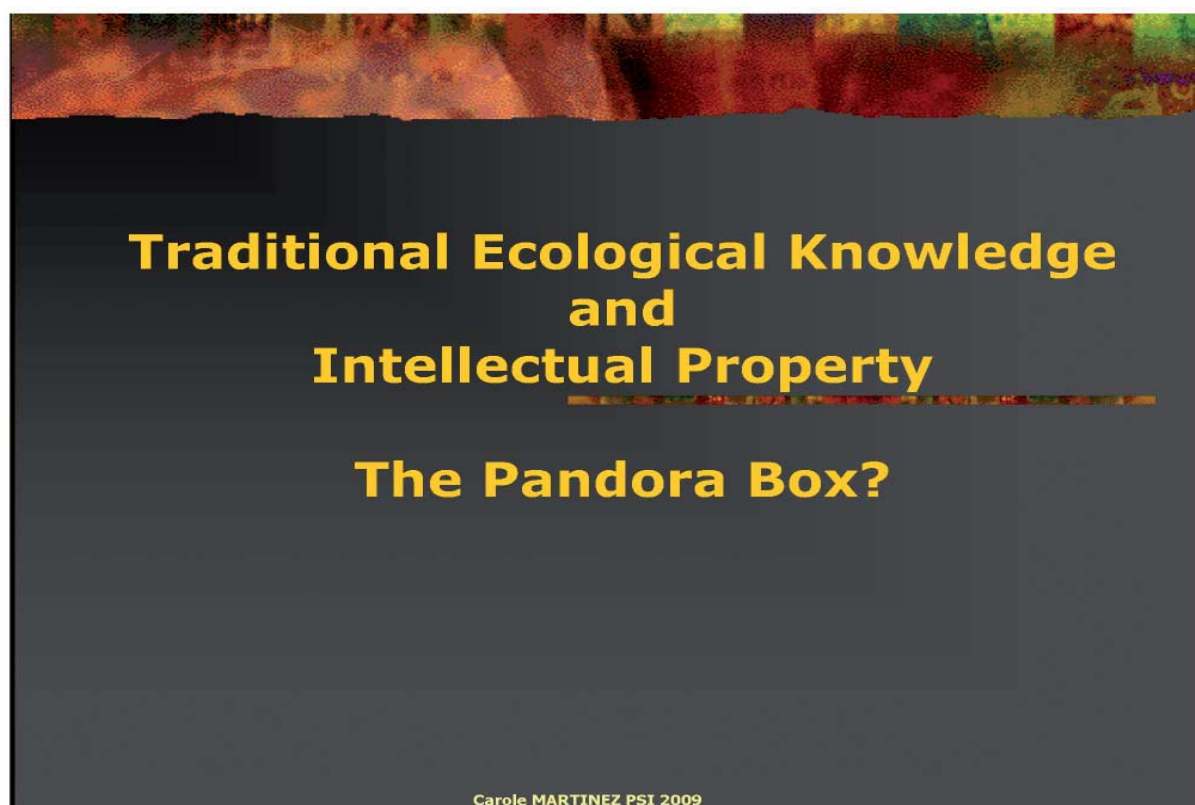
International intellectual property Law on biotechnology and its relationship with biodiversity

Biotechnology is defined in the Rio Convention on Biological Diversity (CBD, 1992) as any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use. It involves the development by scientists of biological resources directly extracted from their natural environment or stored for research purposes.

International law protects inventions by the classical system of patents. Article 27 of the Agreement on Aspects of Intellectual Property Rights (TRIPS, 1994) provides that an invention can be protected only if it is new, involves an inventive step (non obvious) and is capable of industrial application (useful). TRIPS is part of the Agreement establishing the World Trade Organization (WTO).

Any WTO Member State may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect ordre public or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment. It is also possible to exclude from patentability, animals, plants and essentially biological processes for the production of plants or animals. Inventions based on microorganisms remains patentable and depend on a specific regime of deposit for States parties to the Budapest Treaty (1977-1980).

The Doha Declaration (2001) opens a new path for biodiversity protection since raises the question of the relationship between TRIPS and CBD. In this context, The TRIPS Council coordinates discussions between Member States on the disclosure of the country of origin of biological resources or traditional knowledge used to create a biotechnological invention.



SUMMARY

Session 1 : Legal Framework

Legal aspects of traditional ecological Knowledge

Since 1970, a call highlights the respect of indigenous' rights and a new offense is now denounced Biopiracy! As, the new Convention on Immaterial Heritage was adopted in 2003, a question is emerging: is there a place for a new multicultural law on traditional ecological knowledge?

Cultural heritage, values and practices strengthen identities and are also a rich and diverse source of creativity and innovation which are essential in the face of rapid changes taking place in the World and particularly in Pacific Community. But, natural and cultural heritages can not be dissociated. The UNESCO's Convention on World Heritage underscores this reality like the Convention on Biological Diversity (CBD) that puts together Biodiversity and traditional knowledge (Art.8J). Twenty years later, Pacific Islands Ministers of Culture proclaimed "protection of traditional knowledge and culture is a priority" and endorsed the Regional Framework for the Protection of Traditional Knowledge and Expressions of Culture.

Behind numerous international instruments, what is the real state of legal art on traditional ecological knowledge? Facing "spontaneous economic law", traditional knowledge needs to be understood as a social function not only a patentable content.

While discussions are continuing at WIPO IGC on a Sui generis system, the Working Group on Access and Benefit-Sharing of the CBD debates on Certificate of Origin. Relevant and efficient measures need still to be taken to recognize the status and economic support for the indigenous and local communities that are the creators, the repository of traditional knowledge, which have collective ownership. A Model Law is developed under the auspices of the Pacific Regional Environment Programme (SPREP) for the protection of traditional ecological knowledge. At the level of national laws, several States have enacted or are enacting legislation in the area of traditional knowledge protection, for instance Brazil, India and Vanuatu.



Droit de la protection et de l'utilisation durable de la biodiversité marine en Mélanésie.

Étude de cas : Fidji, Salomon, Vanuatu

(Projet CRISP – Composante 2C)

Pr. Jean-Pierre Beurier

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Université de Nantes

SUMMARY

Session 2: ABS Legislation in the Pacific

The Law of protection and reasonable use of marine biodiversity in Melanesia: the cases of Vanuatu, Fiji and Solomon Islands

The selected states of the juridical part of Component 2-C of CRISP Project are State-Islands that have a democratic western political system and a Melanesian culture. The juridical system is mixed with British common law rules and customary law regulations.

These three States recognize a «customary marine property» until the limit of the border reef. In the particular case of Fiji Islands, a concept of customary fishing zone is observed.

The sample-States are parties to many international conventions focusing on protection and use of marine biodiversity. They ratified the United Nations convention on the law of the sea (1982) and global respect its prescriptions. They are also parties to international and regional conventions concerning fisheries and have special bills on this topic.

Each of them have special recent bills concerning protection of the environment, but regulations are incomprehensive. The particular problem of marine environment protection is lacking. The endangered marine species are included only in the international trade regulation or fishing regulation only.

The protection of marine coastal zones is uncompleted and the marine protected areas system is rarely used.

Acknowledgment : we thank the CRISP and AFD (Agence Française de Développement) for funding this project.



Access and Benefit Sharing: Experiences from the Philippines, A Megadiverse Developing Country

Perry S. Ong

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of the Philippines

SUMMARY

Session 2: ABS Legislation in the Pacific

Access and Benefit Sharing: Views from the Philippines, A Mega-diverse Developing Country

The Philippines is one of 17 megadiversity countries in the world and a signatory to the Convention on Biological Diversity (CBD) in 1992. In 1995, it became the first country in the world to develop policies and regulations as well as to implement these with regards to Access and Benefit Sharing (ABS), one of the cornerstones of the CBD. This happened with the issuance of Executive Order 247 (EO 247) which became known as the Philippine Bioprospecting Law. It was implemented for six years and ultimately some of its more controversial provisions were either repealed or amended when a new legislation (the Wildlife Conservation Act) was passed which incorporated lessons learned from the implementation of the EO 247.

The EO 247 distinguished between Academic Research and Commercial Research and the appropriate agreements were designed and signed. Throughout its short lifespan, only one academic research agreement and one commercial research agreement were signed. Under the new Wildlife Act, only commercial research was identified as needing stringent requirements while academic research were treated separately but still regulated. To date, no commercial undertakings had been made under the new law. On the other hand, while academic research was treated differently, there were still requirements to secure collecting permits which were contingent on securing Prior Informed Consent (PIC) from the relevant stakeholders.

The experience of local and foreign academic researchers from the noncommercial sector in the Philippines on ABS and its impact on academic research will be highlighted, while other issues and concerns will also be discussed.



Le droit applicable à la bioprospection marine en Mélanésie : l'exemple des îles Fidji, Salomon et du Vanuatu

(Projet CRISP – Composante 2C)

Bleuenn Guilloux

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Faculté de droit et des sciences politiques
Université de Nantes

SUMMARY

Session 2: ABS Legislation in the Pacific

Legal aspects related to marine bioprospection in Melanesia: example of Fiji, Salomon and Vanuatu Islands

Our study within Component 2-C on marine active substances of the Coral Reef Initiative for the South Pacific focuses on the law which apply to marine bioprospecting in Fiji, Solomon Islands and Vanuatu. Marine Scientific Research (MSR) is subject to and unequal rules which are not necessary appropriate to this specific activity. The three States have adopted the United Nations Convention on the Law of the Sea (1982) without adapting its prescriptions to modern MSR.

Solomon Islands' Law on research (1982) deals with research in general. Fijian Marine Spaces Act (1978) regulates MSR only in the Economic Exclusive Zone. In Vanuatu, there is no specific law on the MSR. Vanuatu's Environmental Management and Conservation Act (2002) is composed inter alia of a part on bioprospection which can apply. Despite the good quality of their legislations, the MSR remains poorly identified in this Melanesian States. In practice, this activity is generally considered as a fishing activity or a preliminary exploitation of biological resources. This constitutes an impediment to research and development.

Patent Law is heterogeneous. Fijian Patents Act (1879) is outdated and does not always correspond to international standards. Unlike Fiji, Vanuatu is not a member State of the World Trade Organisation but paradoxically complies with its requirements in its Patents Act of 2003. Industrial Property Bill of Salomon Islands (2002) has still not been adopted by the Parliament. All these laws are "market oriented", which does not necessarily correspond to the reality of small island developing countries. The lack of capacity allocated to research and development still hampers innovation and investment, particularly in the biotechnology sector.

Acknowledgment : we thank the CRISP and AFD (Agence Française de Développement) for funding this project.



Access and Benefit Sharing in Non-Commercial Research

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PSI Tahiti, 6 March 2009

SUMMARY

Session 3: Research and ABS

Access and Benefit Sharing in Non-commercial Biodiversity Research

Two of the most contentious issues associated with the Convention on Biological Diversity (CBD) are the regulation of access to genetic resources and the equitable sharing of benefits associated with the use of those resources. The CBD has set a 2010 goal for creation of an International Regime for Access and Benefit Sharing (ABS) and a series of six meetings are scheduled for 2008-2010 with that goal in mind. There is great concern in the research community that the International Regime might make no distinction between commercial research (such as pharmaceutical bioprospecting) and non-commercial research (biotic surveys, inventories, ecological studies). This could lead to severe restrictions on access to biological specimens and could hamper international research collaborations.

The Consortium for the Barcode of Life (CBOL; www.barcoding.si.edu) held a week-long workshop on ABS in non-commercial research and has prepared reports that will be introduced into the negotiations of the International ABS Regime. These reports:

- Explore the distinctions between commercial and non-commercial research;
- Describe the benefits and benefit-sharing associated with non-commercial research;
- Consider the risks of lost benefits perceived by developing countries; and
- Outline voluntary compliance measures that could assess and mitigate these risks.

This half-day session will present summaries of the main issues associated with ABS and the development of the International ABS regime. A case study of a non-commercial research project in French Polynesia will be presented, in which the different perspectives of the diverse stakeholders will be explored:

- The researcher;
- The sponsoring university;
- A local government agency; and
- The local community.



University Research/Technology Transfer

IP Issues Associated with Genetic Resources and Natural Product Development

Pacific Science Intercongress, Tahiti
6 March 2009

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SUMMARY

Session 3: ABS Legislation in the Pacific

Intellectual Property Issues Associated with Genetic Resources and Natural Product Development

Research universities fulfill multiple roles in the innovation ecosystem. While they operate primarily in the early stages of discovery and innovation, universities are in the distinctive positions of collecting unique materials and data, bringing materials into the laboratory for further study, sharing research data and efforts with other researchers within the research laboratory and across borders in other countries, developing new discoveries that may eventually alleviate societal maladies, as well as transferring these discoveries to industrial partners who can bring them to market for the public benefit. In the course of fulfilling these roles, the university enters into research and license agreements that define the myriad relationships with the broad range of partners involved, from research sponsors, material providers, research collaborators and commercial licensees. Careful attention must be paid in particular to the intellectual property terms of the individual agreements as they often interrelate with one another.

Access to unique genetic resources provides an incentive for universities to conduct research and learn more about the basic properties of the material. Intellectual property rights provide an incentive for industry to invest the effort and resources into the lengthy and risky process of developing a healthcare product in the rare event of such a discovery. During the collection process, universities must respect and balance the needs and desires of the material provider remaining mindful of potential future applications of the material that are noted during the discovery process. However, high level discussions in the international arena may significantly impact the university's ability to forge these various relationships for a particular material or product.

This presentation will explore the multiple roles of the research university and the delicate balance of obtaining access to genetic resources and sharing benefits with the source community, while maintaining an incentive for potential commercial development of a healthcare product that can be utilized by the general public. Such arrangements could benefit developing countries as material providers as well as society which otherwise may not have had access to the material and the creation of new knowledge. Examples of benefit sharing arrangements with Pacific Rim countries will be discussed.

Acknowledgment : we thank the CRISP and AFD (Agence Française de Développement) for funding this project.



ABS ASPECTS OF THE MOOREA BIOCODE PROJECT *CASE STUDY - FRENCH POLYNESIA*



Sabine Brels

Legal analyst, R.B Gump research station (UCB)

SUMMARY

Session 4: Case Study

ABS aspects of the Moorea Biocode Project

The Moorea Biocode Project (MBP) is a scientific research program intended to make the exhaustive inventory of the genetic resources of Moorea island in French Polynesia using the new “Barcoding” approach. This project aims at complying with the obligations of the Convention of Biological Diversity (CBD) regarding the access to genetic resources and the fair and equitable sharing of the benefits arising out of their utilization (ABS).

In 1992, CBD recognized the “sovereign rights of States over their natural resources ” with the obligation for them to regulate ABS obligations . According to its 2004 Autonomous Status , French Polynesia has the jurisdiction over its genetic resources but there is no ABS legislation in force even if a draft text is in suspense since 2006. France is not showing the way to its overseas territories without having adopted itself any ABS legislation implementing CBD provisions .

In the frame of the Biocode Project, the CBD recognized rights of French Polynesia and of “indigenous and local communities” over genetic resources are respected through cooperative agreements concluded between French Polynesia and a community based organization with the University of California Berkeley (UCB), administratively responsible for the Gump research Station in Moorea. In addition, a Memorandum of Understanding (MOU) is under discussion between the members of the “Biocode Consortium” and French Polynesia to facilitate the transfer and traceability of genetic resources ensuring the free sharing of the Project’s results in making them publicly available. This MOU is intended to pave the way for providing a future model of Material Transfer Agreement (MTA) for the non-commercial research on biodiversity and help French Polynesia to build its own ABS politics with the objective of facilitating scientific research for biodiversity conservation purposes.



Annex 2j: ABS Workshop List of Participants

LIST OF PARTICIPANTS			
First name	SURNAME	Institution and/or (Field of interest)	City, Country
Julius	AGBOOLA	(Marine bio-geo-chemistry)	Hokkaido, Japan
Ali	ALMOURABIT	ICSN-CNRS (Chemistry)	Gif/Yvette, France
Warwick	ANDERSON	University of Melbourne	Melbourne, Australia
Kathie	BAILEY-MATHAE	National Academy of Sciences	USA
Francis	BALETA	University of Philippines	Philippines
Rusty	BRAINARD	(Coral reef ecosystems)	Hawaii
Sabine	BRELS	UCB, Gump	Moorea, French Polynesia
Peter	BUCHANAN	Landcare Research	New Zealand
Burk	BURNETT	PSA	USA
Jean-François	BUTEAUD	UPF (Botany)	Papeete, French Polynesia
Visheshni	CHANDRA	USP (MSc Student)	Suva, Fiji
Eric	CLUA	CRISP	Noumea, New Caledonia
Neil	DAVIES	UCB, Gump	Moorea, French Polynesia
Cécile	DEBITUS	IRD (Chemistry)	Papeete, French Polynesia
Percy	DIANA	University of British Columbia	Canada
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Marc	FABRESSE	NGO (Agronomy)	Papeete, French Polynesia
François	FERAL	Université de Perpignan (Agronomy)	Perpignan, France
Tea	FROGIER	Ministère de l'Enseignement supérieur et de la Recherche	Papeete, French Polynesia
Emmanuelle	GINDRE	Ministère de l'Environnement	Papeete, French Polynesia
Barbara	GLOWCZEWSKI	Laboratoire d'Anthropologie sociale	Paris, France
Judy	GRINDELL	Database - GBIF (Science communication)	New Zealand
Bluenn	GUILLOUX	Université de Nantes (Law)	Nantes, France
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Len	HIRSCH	Smithsonian Institution	USA
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Fred	JACQ	(Ecology)	Papeete, French Polynesia
Pierre	JACQUET	AFD (Economics)	Paris, France
Chris	KITALONG	University of New York	New York, USA
Ro'i	LAÏSA	Université de Bordeaux (Economics)	Bordeaux, France
Carol	LENTFER	University of Queensland (Paleo-environment/Social sciences)	Brisbane, Australia
Nancy	LEWIS	East-West Center	Hawaii, USA
Basil	MARASINGHE	(Chemistry)	Port Moresby, PNG
Caroll	MARTINEZ	Comité français de l'UICN	Paris, France
Thierry	MENESSON	Institut Agronomique Calédonien	Noumea, New Caledonia
Jean-Yves	MEYER	Ministère de l'Enseignement supérieur et de la Recherche	Papeete, French Polynesia
Paula	MEYER	Ministère de l'Environnement	Papeete, French Polynesia
Chris	MEYER	Smithsonian Institution	USA
Kaya	MOHSEN	EPHE, Laboratoire Ecosystèmes Aquatiques Tropicaux et Méditerranéens	Perpignan, France
Christian	MORETTI	IRD (Chemistry)	Papeete, French Polynesia
Ong	PERRY	University of Philippines (Biology)	Philippines
André	PHAM	UPF (Marine biology)	Papeete, French Polynesia
Stéphane	PRIGENT	(Biodiversity/Genetics)	Taiwan
Diane	RAGONE	National Tropical Botanical Garden	New Zealand
Phila	RAHARIVELOMANANA	UPF (Chemistry)	Papeete, French Polynesia



LIST OF PARTICIPANTS			
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Valérie	REBOUD	AFD (Economics)	Paris, France
George	RODERICK	University of California, Department of Environmental Science Policy and Management	Berkeley, USA
Bourdeix	ROLAND	CNRS (Coconut trees)	Montpellier, France
Bruno	SAURA	UPF (Law/Economics)	Papeete, French Polynesia
David	SCHINDEL	Consortium Barcode of life	USA
Andrea	SEELLENFREUND	Escuela de Antropolgia	Santiago, Chile
Danling	TANG	(Remote Sensing/Marine Ecology/Environment)	Guangzhou, China
Hinano	TEAVAI-MURPHY	Te Pu Atitia Association	Moorea, French Polynesia
Janna	TOM	(Transfer of technology)	USA
Paul	UHLIR	National Academy of Sciences	USA

Origin of participants	
Australia	2
Canada	1
Chile	1
China	1
Fiji	2
France	11
French Polynesia	14
Guam	1
Hawaii	1
Japan	1
New Caledonia	2
New Zealand	3
Papua New Guinea	1
Philippines	2
Taiwan	1
USA	10



PARTICIPATION OF THE CRISP TO PSI 2009

SUMMARY

PSI 2009 was a major event for the CRISP programme who dedicated 20 000 Euros from the French Pacific Fund (SPP) to the manifestation. France, French Polynesia, and the Pacific Science Association organized this 11th Pacific Science Intercongress in conjunction with the 2nd Symposium on French Research in the Pacific, on the theme: « Pacific countries and their ocean facing local and global changes ». A theme that logically called for a strong CRISP participation.

Acknowledged by the French President Nicolas Sarkozy, the CRISP programme took this great opportunity to present some of its achievements.

The CRISP Coordinating Unit in Noumea allocated special grants to eight scientists presenting their work during poster or oral presentations, mainly during the first session on « Ecosystems, Biodiversity and Sustainable Development ».

Extra funding was also provided to five other collaborators for their participation to a special CRISP side-event, organized through component 2C on Bioprospection. The organisation of this workshop on « Access and Bene-

fit Sharing (ABS) of Genetic resources in the Pacific » was primarily funded by CRISP, in association with IRD, UC Berkeley Gump Station and the Smithsonian Institution via the Consortium for the Barcode of Life.

Special financial help was also allocated to Tamatoa Bambridge (CNRS) for the organisation of a workshop on Governance titled « Management of marine resources and habitats (lagoons and coral reefs) in Polynesia: between legitimacy and efficiency » that took place at the CRILOBE headquarters in Moorea.

Lastly, CRISP coordinator Eric Clua took part in the workshop organized by Pr. Bernard Salvat (EPHE) and Randy Thaman (USP) on « Cooperation in Science and Education in the Pacific ».

The inter-congress main covered topics were:

1. Ecosystems, Biodiversity and Sustainable Development
2. Climate Change and Ocean Acidification
3. Health Challenges in the Pacific : Infectious diseases, Non-communicable diseases and the Health workforce
4. Culture and Politics : The Stakes of Modernity
5. Governance and the Economy : Future challenges for the Pacific

