

COMPONENT 2A

CRISP



Coral Reef InitiativeS for the Pacific
Initiatives Corail pour le Pacifique

Knowledge, management, rehabilitation and
beneficial use of coral ecosystems

WORKSHOP REPORT

COMPONENT 2A
ANNUAL GENERAL MEETING
CRIOBE - MOORÉA (FRENCH POLYNESIA)
2-5 April 2007



CRISP



Coral Reef InitiativeS for the Pacific
Initiatives Corail pour le Pacifique



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, USA), French overseas territories and Pacific Island developing countries.

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, monitoring and management of coral reef 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 extension of CRISP Programme activities
- 3B: Coordination, promotion and development of CRISP Programme

CRISP Coordinating Unit (CCU)
Programme manager : **Eric CLUA**
SPC - PoBox D5
98848 Noumea Cedex
New Caledonia
Tel : (687) 26 54 71
Email : ericc@spc.int
www.crispinline.net

Component leader :
René GALZIN
UMR 5244 CNRS-EPHE-UPVD
52 av. Paul Alduy
66 860 Perpignan
France
Tel : (33) 4 68 66 20 55
Fax : (33) 4 68 50 36 86
Email : galzin@univ-perp.fr

COMPONENT2A

Knowledge, monitoring and management of coral reef ecosystems

■ **PROJECT 2A-1 :**

Postlarvae (fish and crustacean) capture and culture for aquarium trade and restocking

■ **PROJECT 2A-2:**

Improvement of knowledge and capacity for a better management of reef ecosystems

■ **PROJECT 2A-3 :**

Synopsis and extension work on indicators for monitoring the health of coral ecosystems and developing a remote sensing tool

■ **PROJECT 2A-4 :**

Testing of novel information feedback methods for local communities and users of reef and lagoon resources

■ **PROJECT 2A-5 :**

Specific studies on i) the effects on the increase in atmospheric CO₂ on the health of coral formation and ii) the development of eco-tourism

Financement :



COMPONENT 2A

CRISP



Coral Reef Initiative for the South Pacific
Initiative Corail pour le Pacifique Sud

Knowledge, management, rehabilitation and
beneficial use of coral ecosystems

WORKSHOP REPORT

CRIOBE - MOOREA - FRENCH POLYNESIA 2-5 APRIL 2007



CRISP



Coral Reef Initiative for the South Pacific
Initiative Corail pour le Pacifique Sud



Le CRISP est un programme mis en œuvre dans le cadre de la politique développée par le Programme Régional Océanien pour l'Environnement afin de contribuer à la protection et la gestion durable des récifs coralliens des pays du Pacifique.

L'initiative pour la protection et la gestion des récifs coralliens dans le Pacifique (CRISP), portée par la France et préparée par l'AFD dans un cadre interministériel depuis 2002, a pour but de développer une vision pour l'avenir de ces milieux uniques et des peuples qui en dépendent, et de mettre en place des stratégies et des projets visant à préserver leur biodiversité et à développer dans le futur les services économiques et environnementaux qu'ils apportent tant au niveau local que global. Elle est conçue en outre comme un vecteur d'intégration entre états développés (Australie, Nouvelle-Zélande, Japon, USA), Collectivités françaises de l'Outre-Mer et pays en voie de développement du Pacifique.

Le CRISP est structuré en trois composantes comprenant respectivement divers projets :

- Composante 1 : Aires marines protégées et gestion côtière intégrée

- Projet 1A1 : Analyse écorégionale
- Projet 1A2 : Aires Marines Protégées
- Projet 1A3 : Renforcement institutionnel
- Projet 1A4 : Gestion intégrée des zones lagonaires et des bassins versants

- Composante 2 : Connaissance, gestion, restauration et valorisation des écosystèmes coralliens

- 2A : Connaissance, valorisation et gestion des écosystèmes coralliens
- 2B : Restauration récifale
- 2C : Valorisation des substances Actives Marines
- 2D : Mise en place d'une base de données régionale (Reefbase Pacifique)

- Composante 3 : Appui institutionnel et technique

- 3A : Capitalisation, valorisation et vulgarisation des acquis du programme CRISP
- 3B : Coordination, promotion et développement du programme CRISP

Cellule de Coordination CRISP
Chef de programme : **Eric CLUA**
CPS - BP D5
98848 Nouméa Cedex
Nouvelle-Calédonie
Tél : (687) 26 54 71
Email : ericc@spc.int
www.crisponline.net

Responsable de composante :
René GALZIN
UMR 5244 CNRS-EPHE-UPVD
52 av. Paul Alduy
66 860 Perpignan
France
Tel : (33) 4 68 66 20 55
Fax : (33) 4 68 50 36 86
galzin@univ-perp.fr

COMPOSANTE 2A

Connaissance, gestion et valorisation des écosystèmes coralliens

■ **PROJET 2A-1 :**

Capture et valorisation des postlarves (poissons et crustacés) de récif

■ **PROJET 2A-2:**

Amélioration de la connaissance et de la capacité de gestion des écosystèmes coralliens

■ **PROJET 2A-3 :**

Synthèse et vulgarisation d'indicateurs de suivi de la santé des écosystèmes coralliens et valorisation de l'outil télédétection

■ **PROJET 2A-4 :**

Test de méthodes novatrices de rétrocession de l'information à destination des populations locales et usagers des ressources récifo-lagonaires

■ **PROJET 2A-5 :**

Etudes spécifiques sur i) les effets de l'accroissement du CO2 atmosphérique sur la santé des édifices coralliens et sur ii) le développement de l'éco-tourisme.

Financement :



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WORKSHOP PROGRAM

Date : April 2007, 2nd-5th
Venue : CRIOBE, Moorea, French Polynesia

Day 0 - Sunday 1st of April: Leaders Meeting

2 – 5 pm: Meeting between the leaders
6 pm: Opening cocktails + Barbecue at Criobe

Day 1 - Monday 2nd of April: Presentation of the results

Moderator: Jocelyne Ferraris

Secretary of the day :

8.00 – 8.30: Opening ceremony –
Serge Planes, Director CRIOBE - Eric Clua, Head of CRISP project
Presentation of all the participants

8.30 – 9.00: René Galzin: Results of the C2A-1
“Capture and economic use of reef fish larvae”

9.00 - 10.00: Jocelyne Ferraris and Ed Lovell: Results of the C2A-2
“Improve knowledge and capacity for coral reef fishery management”

10.00- 10.30: *Coffee break*

10.30 – 12.00: Caroline Vieux, Jocelyne Ferraris and Ken MacKay:
Results of the C2A-3 *“Development of synoptic indicators and coral reef monitoring”*

12.00- 14.00 : *Lunch*

14.00 – 15.00: David Lecchini, Julie Petit and Bill Aalbersberg: Results of the C2A-4
“Knowledge transfer and institutional strengthening

15.00 – 16.00: René Galzin and Randy Thaman: Results of the C2A-5
“Specific research projects”

16.00 - 16.30 : *Coffee break*

16.30 – 17.30: Discussion

Day 2 Tuesday 3rd April: General Discussion

Moderator: Ken MacKay

Secretary of the day :

8.30 - 9.00 : Agenda of the day by the three leaders: J. Ferraris, Kenneth T MacKay and R. Galzin,

9.00 - 10.00 : Discussion

10.00 - 10.30 : Morning tea and coffee

10.30 - 12 .00 : Discussion

12.00 - 14.00 : Lunch

14.00 - 16.00 : Discussion

16.00 - 16.30 : Afternoon tea and coffee

Day 3 Wednesday 4th April: General Discussion

Moderator: René Galzin

Secretary of the day :

8.30 – 9.00: René Galzin: Presentation of the action plan for year 2 for the C2A-1

9.00 - 10.00: Jocelyne Ferraris and Ed Lovell:
Presentation of the action plan for year 2 for C2A-2

10.00- 10.30: *Coffee break*

10.30 – 12.00: Caroline Vieux, Jocelyne Ferraris and Ken MacKay:
Presentation of the action plan for year 2 for C2A-3”

12.00- 14.00 : *Lunch*

14.00 – 15.00: David Lecchini, Julie Petit and Bill Aalbersberg:
Presentation of the action plan for year 2 for C2A-4

15.00 – 16.00: René Galzin and Randy Thaman:
Presentation of the action plan for year 2 for C2A-5

16.00 - 16.30 : *Coffee break*

16.30 – 17.30: Discussion

18.30 : Tamara (Polynesian food) and Student’s polynesian show

Day 4 Thursday 5th April: General Discussion

Moderator: Jocelyne Ferraris, Kenneth MacKay and René Galzin,

Secretary of the day :

8.30: Agenda of the day by the three leaders: J. Ferraris, Kenneth T MacKay and R. Galzin

9.00 - 10.00 : Discussion

10.00 - 10.30 : Morning tea and coffee

10.30 - 12 .00 : Discussion

12.00 - 14.00 : Lunch

14.00 - 16.00 : Final Discussion
Final recommendation from Eric Clua, Head of the CRISP project

Liste des participants

	lundi	mardi	mercredi	jeudi	Vendredi	email
ALLBERSBERG Bill	1	1	1	1		aalbersberg@usp.ac.fj
BADIE moana		1				
BOVY Emmanuelle	1					emmanuel.bovy@agriculture.min.gov.pf
BRENIER Ambroise	1	1				ambroise.brenier@univ-perp.fr
BRIE Christophe	1					christophe.brie@mail.pf
CHANCERELLE Yannick	1					criobe@mail.pf
CLUA Eric	1	1	1	1	1	ericc@spc.int
DAVIES Neil	1		1	1		ndavies@moorea.berkeley.edu
DE VILLERS Paul	1	1	1	1		pacifik21@gmail.com
FAURE Corentine	1	1				boraecofish@mail.pf
FERRARIS Jocelyne	1	1	1	1	1	jocelyne.ferraris@ird.fr
FROGIER Tea	1					priscille.frogier@recherche.gov.pf
GALZIN René	1	1	1	1	1	galzin@univ-perp.fr
HERRENSCHMIDT J.B.	1	1		1	1	herren@noumea.ird.nc
LECCHINI David	1	1	1	1		lecchini@univ-perp.fr
LO Cedrick	1					cedrik.lo@perli.gov.pf
LOVELL Ed	1	1	1	1		lovell_e@usp.ac.fj
MAC KAY Kenneth	1	1	1	1	1	mackay_k@usp.ac.fj
MAIOTA Nicolas		1				
MALPOT Emanuel	1					emmanuel.malpot@mail.pf
MARTEL François					1	
MAURIN Robert	1					robert.maurin@netcourrier.com
PASCAL Nicolas	1	1	1			n.pascal@grupolar.com
PETIT Julie	1	1				julie.petit@univ-perp.fr
PLANES Serge	1					planes@univ-perp.fr
REMOISSENET Georges	1	1	1	1		georges.remoissenet@peche.gov.pf
SALLES Boris					1	
STAUB Francis	1	1	1	1	1	fstaub@icriforum.org
TCHEPIDJIAN Benoit	1	1				benoit.t@mail.pf
THAMAN Randy	1	1	1	1		thaman_r@usp.ac.fj
VAN LIERDE Elodie	1					
VIEUX Caroline	1	1	1	1	1	carolinev@sprep.org
Total	28	20	14	14	9	

2007 CRISP Supporting Committee (CSC) meeting in Moorea (French Polynesia) 2-5 April

- **Day 1 - Monday 2nd of April: Presentation of the results**

Moderator : Jocelyne Ferraris

Secretary of the session : Elodie Van Lierde

8.00 – 8.30: Opening ceremony - Serge Planes, Director CRIOBE - Eric Clua, Head of CRISP project - Presentation of all the participants

8.30 – 9.00: René Galzin: Results of the C2A-1
“Capture and economic use of reef fish larvae”

9.00 - 10.00: Jocelyne Ferraris and Ed Lovell: Results of the C2A-2
“Improve knowledge and capacity for coral reef fishery management”

10.00- 10.30: *Coffee break*

10.30 – 12.00: Caroline Vieux, Jocelyne Ferraris and Ken MacKay: Results of the C2A-3
“Development of synoptic indicators and coral reef monitoring”

12.00- 14.00 : *Lunch*

14.00 – 15.00: David Lecchini, Julie Petit and Bill Aalbersberg: Results of the C2A-4
“Knowledge transfer and institutional strengthening”

15.00 – 16.00: René Galzin and Randy Thaman: Results of the C2A-5
“Specific research projects”

16.00 - 16.30 : *Coffee break*

16.30 – 17.30: Discussion

1. Results of the C2A-1 “Capture and economic use of reef fish larvae” by René Galzin

➔ **Fundamental and apply research on larvae harvesting**

➔ **Basic research and extension work on larvae identification techniques**

Publication by CRISP of two books

- “Young Coral Reef Fish of Wallis Islands and Central Pacific”
- “Guide d’identification des larves de poissons de récif de Polynésie française »

➔ **Identify countries for knowledge transfer, identify sites in countries for harvesting operations**

CRISP 2A1 objectives and results - Ecocean responsibility

- 1- Collect the maximum of PL in Fiji to better understand abundance, diversity, and period of recruitment.

- 2- Identify collection site and fishing devices.
- 3- Transfert capacity building.
- 4- Growing fish for restocking activities
- 5- Restock a maximum of fish after few months growth
- 6- Make an economic studies of PCC profitability (Business plan)

CRISP 2A1 conclusions

- Abundance and diversity are low (35 PL/night/traps) considering Fijian reef health and diversity but not so bad for the “worth” place to collect and rear PL in Fiji (Suva) => We can expect better diversity and abundance in remote island.
- PCC was well accepted by local communities. We have transferred successfully the PCC knowledge to Fijian technicians.
- PCC is feasible in Fiji but not in Suva areas
- PCC is profitable? => Need more month before final conclusion

➔ **Adapt local insular legislation in order to make possible and facilitate the setting up of larvae export channels**

2. Presentation of the results (Year 1: 2006) UR-CoReUs, IRD by Jocelyne Ferraris

Projects and activities of component C2A

1. Fish larvae and juveniles.
2. Ecology, Biodiversity, Indicators, Socio-Economy, Computer tools.
3. Litterature, Remote sensing, Validation (test), Guide, articulation with GCRMN.
4. Regional DataBase, Communication, Restitution, Sensibilisation, Training, Student exchange.
5. CO2 and tourism.

Projet 2A-2 : Improve knowledge and capacity for coral reef fishery management

-Activity 2A-21 : Indicators and capacities for fisheries management

1a- Continuation of « Procfish » (ecosystemic approach)

➔ DemEcoFish results in Tonga and Fidji: « Assessment of coral reef fisheries by a multidisciplinary panel of indicators: a comparative approach of twelve sites in two Pacific countries” J. Ferraris, M. Léopold, M. Kronen, M. Kulbicki & P. Labrosse (*Presentation at CRISP whorkshop in Suva April 2006 + Abstract for Pacific Science Congress, OKINAWA 12-18 juin 2007 + publication draft*)

1b – Socio-economy of fisheries

➔ Participative Management:

1) Surveys on 2 sites in New-Calédonia involved in a process of Sustainable Development : Voh-Koné-Poimbout (Mining project), Ouvéa (UNESCO World Heritage) (*2 field trip reports + 1 poster for Forum BIODÉC Biodiversité écosystèmes coralliens. Nouméa, Novembre 2006 + 1 restitution poster*) ④ presented by JB. **Herrenschmidt**

2) Study on participative management of coral ecosystems through Marine Protected Areas: Navakavu case study « Utilisation de la perception des pêcheurs dans la gestion participative des ressources : étude du cas de Navakavu, Fidji » A. Hubert (*Research project, Master 1, Agrocampus-Rennes, September 2006 to February 2007*)

3) Estimating the Total Economic Value of the Navakavu LMMA, Fiji: Project Overview
(proposal made by Tanya O'Garra)

1c – Fisheries indicators

➔ Workshop on methods in Suva (planned in April 2006)

- *workshop on socio-economic indicators*
- *training in UVC*
- methodological comparison between data collected on Muaivuso site: “Comparison of underwater survey techniques of reef fish monitoring”, M. Léopold (*Field trip report, 21 November – 2 December 2006 + 1 publication draft*) ④ presented by **D. Lecchini**

④ **Ecosystemic indicators:** “From local knowledge to management of a coral reef ecosystem: application to a mining development project in New Caledonia”, Chabanet et al. (Presentation at CRISP workshop in Suva April 2006 + communication to Asia Pacific Coral Reef Symposium, June 18 – 24, 2006, Hong Kong) ④ cf. Poster BIODÉC de Guillemot et al.

➔ Community-based monitoring : « Community-based monitoring of coral reef fish resources in two contrasted islands of French Polynesia”. A. Brenier , J. Ferraris , R. Galzin (Abstract for Pacific Science Congress, OKINAWA 12-18 juin 2007) ④ presented by **A. Brenier**

➔ Bio-economic modelling : data monitoring (catch, effort, size) in Tikehau atoll to model the lagoon fishery with ISISFISH (Field trip report 13/02/2006 - 3/03/2006) ④ presented by **N. Pascal**

- Activity 2A-22 : Biodiversity

- Checklist of reef fish in South Pacific

➔ Research project:

- « Relation entre diversité fonctionnelle et diversité spécifique dans les écosystèmes coralliens », Anne-Lise Roblin-Brieu (*Master II, UPVD Perpignan*)
- « La densité et la biomasse sont-elles liées à la richesse spécifique? Exemple des poissons coralliens dans le Pacifique insulaire », David Beaune (*Master II, UPVD Perpignan*)

➔ Regional approach:

- list of major reef fish species found in South Pacific along : vernacular names and basic information on biology and ecology.
- Links between biogeography and management of reef fishes, a New Caledonian and Pacific region perspective”. Kulbicki M. (*Presentation at CRISP workshop in Suva April 2006, communication Forum BIODÉC Biodiversité écosystèmes coralliens. Nouméa - Nouvelle Calédonie- Novembre 2006*)

- Activity 2A-23 : Computer tools

➔ Meta-Data Base on reef resources and their habitat: « Elaboration d’une Base de Méta-Données du Système d’Information Fisheye/SI », G. Bouvet (*Technical Report*)

- ➔ GIS: Apport des systèmes d'information géographique pour une gestion spatialisée des écosystèmes coralliens. Cas de la pêche au crabe de palétuvier dans la zone de Voh (Nouvelle-Calédonie). J. Bailleul (*Research project, Master II Lille*)

Projet 2A-3 : Synthesis and dispersion of synoptic indicators and evaluation of remote sensing as a tool for coral reef health indicators (by Jocelyne Ferraris)

3) “Coral reef monitoring activities in Polynesia Mana Node” by Caroline Vieux

Status of monitoring in Polynesia Mana countries at the end of 2005

- French Polynesia, Wallis and Futuna, Cook islands

- Coral and fish surveys
- community monitoring conducted through the Reef Check programme in French Polynesia

- Kiribati

- coral monitoring program, data collection performed by the Fisheries, analysis by PM coordinator

- Niue

- coral monitoring program, data collection and analysis performed by PM coordinator with Fisheries

- Tokelau

- Coral monitoring since 2005 exclusively reliant to the PM coordinator visit.

- Tonga

No monitoring

Needs in 2006

- Training for local staff in coral and fish survey
- Equipment
- Training in data analysis
- Funds to conduct the surveys

Activities in 2006 - Early 2007

- In country training in Niue, data collection and analysis for fisheries staff (4 people)
- Monitoring in Kiribati performed by the fisheries and analysis by PM coordinator
- Training workshop in Moorea early March

Plans for 2007

- Presentation of coral reef monitoring results from Kiribati at PSC 21
- In-country assistance in Tonga
- Involvement in doing baseline surveys for Mpas in Tokelau
- Writing of the Polynesia Mana chapter for “Status of coral reefs of the world”.
- Modify the PM coordination unit

4) 2A31b : “Study the potential of remote sensing in large & small scale mapping for defining indicators of natural & human disturbance for coral reef monitoring Fiji & Kiribati” by Ken MacKay

- Undergraduate student—CRISP & Fiji Fisheries
- Australian PhD student—
 - Series maps incorporating field data & remote sensing for 3 study areas
 - Currently analyzing accuracy of maps
 - Link to IRD Millennium mapping program

2A31c : Test a range of reef health indicators in various countries

- temperature loggers Fiji & Rotuma, Solomon Islands & Samoa
- coral coring—Fiji link to Solomon Island activities

2A31d : Preliminary (2005) and then final (2006) production of a guide to the state of coral reefs & their exploitation in the South Pacific

- 2004 Status of Reef Report nearing completion funded by Canada- C-SPOD but some CRISP inputs.

2A32 : GCRMN

- a) appraisal of human & material resources for implementing monitoring on the state of health of reefs & exploitation
- b) assist with setting up a regional reef monitoring network (IMR--SW Pacific GCRMN Node

GCRMN SW Pacific Node

- Node established & active
- Visits & discussions with all coordinators
- 2 newsletters
- 2 Workshops—Fiji & Solomon Islands
- Planning Major activity—Status of Coral Reefs 2007
- ITMEMS --Presentation , networking and attendance at GCRMN meetings
- Establishment at USP (Feb 2007) major database & information centre for coral reefs servicing the SW Pacific node GCRMN
 - 4 staff
 - 1 Database
 - 1 ReefBase & GCRMN coordinator
 - 1 reefBase library technician
 - 1 WorldFish Reefbase Coordinator

2A41 : Establish databank & data processing for the South Pacific GCRMN

Awaiting data base- COREMO & ReefBase funding

5) Activity 2A-31 : Synoptic indicators by Jocelyne Ferraris

1a- Litterature

➔ Biodiversity indicators: Bibliography references

1b – Test of indicators

- ➔ Methods (sampling design, indicators panel): “Impact of an Expected Anthropogenic Disturbance in New Caledonia (South Pacific): which Methods should be used to Monitor Reef Fish Communities?” Guillemot N., Chabanet P., Pelletier D., Langlois T., Léopold M. (*Abstract for Pacific Science Congress, OKINAWA 12-18 juin 2007*)
- ➔ Underwater Visual Census:
 - 1) “Indicateurs de suivi des ressources halieutiques: Evaluation de la fiabilité des comptages de poissons en surface – Îlot Maître, Nouvelle-Calédonie”, M. Léopold (*Field trip report, 2-12 May 2006*)
 - 2) “Suivi des Aires marines Protégées de Moorea: mise en place d’un protocole de suivi impliquant des volontaires”, Emmanuelli E. (*Research project Master II, EPHE-Un of Florida*)
 - 3) “Assessing the initial state of fish assemblage to adapt monitoring protocol for managers in a network of coral reef Marine Protected Areas – Moorea, French Polynesia”, Emmanuelli E., Ferraris J; Lison de Loma T & Galzin R. (*Abstract for European MPA symposium, Murcia, September 2007*)

6) C2A – 4 « Knowledge transfert and institutional strengthening » by David Lecchini

C2A -10 : EPHE-IRD-USP → Regional database to create a common database including all type of data

C2A – 11 : IRD-USP → Communication to develop a DVD + booklet for schools

FILM of 26 minutes with 10 modules about coral ecosystem

1. Polype = animal who create the coral reefs
2. Environmental factors for the life of coral
3. Biodiversity in coral ecosystems
4. Exemple : Biodiversity in fish taxa
5. Reproduction in coral ecosystems
6. How to eat in coral reefs
7. Coral reefs = essential biotope for the biodiversity
8. Natural and Human Threats on coral biodiversity
9. Toward a sustainable coral ecosystems
10. Legends on coral reefs

=> The DVD will be finished in 2007 (responsible Pascale Chabanet – IRD)

C2A – 12 : EPHE-IRD-USP → Training courses to set up a UVC training in Fiji

Evaluation of locally-based monitoring ability to detect changes in reef fish abundance in a marine protected area (Viti Levu Island, Fiji)

This study was part of a workshop on underwater survey techniques of reef fish monitoring held in Suva, Fiji in November 2006.

It was organized by B. Aalbersberg, D. Kaur, E. Lovell, C. Morris, L. Tamata, R. Simpson, J. Comsley, R. Vave from **USP** for their assistance in planning and conducting the survey; H. Sykes for **Reef Check** material, F. Isimeli from the **Mamanuca Environmental Society**, and H. Rossini from **Coral Cay Conservation** for fish visual census, M. Leopold and D. Lecchini (**IRD**). We are also grateful to fishers and villagers from **yavusa Navakavu and Muaivuso village** for their welcome and participation in the field work.

The present study compared four monitoring methods based on **underwater visual census (UVC)** of reef fish to explore the **effectiveness of a community-managed marine reserve** in Navakavu (Fiji).

Three participatory methods were conducted by 1) **snorkellers from the community using vernacular names for fish**, 2) **non resident volunteers using the Reef Check target list of fish for the Indo-Pacific**, and 3) **non resident volunteers using the Coral Cays list**. These approaches were checked against a more comprehensive **method conducted by scientists** identifying fish at the species level.

The **four methods were compared in terms of accuracy, precision, and ability to highlight changes in fish abundance between protected and non-protected areas**. All methods indicated a major difference in the overall density of fish between protected and non-protected areas.

Conclusion => All methods indicated a **major difference in the overall density** of fish between protected and non-protected areas. The community-based approach used relevant fish indicators but lead to **strong overestimations and highly imprecise estimations of abundance for each recorded taxon**

This resulted in an optimistic misinterpretation of the effectiveness of Navakavu no-take zone for fish resources.

Our results suggested that **calibration of community-based UVC against scientific UVC is mandatory**. More effective harvest-based indicators are needed to involve local users in the evaluation of the performance of marine protected areas on fish resources

C2A – 13 : EPHE-IRD-USP → Student exchange

7) “World fish center reefbase project” by Julie Petit

- Coral Reef resources in the World are in danger of destruction → Exploitation, degradation of habitat
- Sophisticated methods to quantify the deterioration of coral reefs → Not available or understood
- A larger body of information has been compiled in technical reports → Limited distribution

World Fish Center

- An nonprofit organization
- Establish as an International Center in 1977
- Became a research center of the CGIAR in 1992
- In total : 16 research centers
- Mission: promoting sustainable agricultural development based on environmentally management of natural resources
- The World Fish Center specialize in living aquatic resources

ReefBase mission

- To improve sharing and use of data information
- Knowledge in support of research and management of coral reef resources

ReefBase Vision

To be the first place where scientists, managers, other professionals, as well as the wider public go for relevant data, information, publications, photos, and maps related to coral reefs

Subject of ReefBase

- Communities and Livelihoods : its focus on socioeconomic information
- Reef Fisheries : access structured and management-relevant information on reef fisheries
- Reef Monitoring : information and maps on coral reef monitoring programs

Objectives of Reefbase

- Develop a relational database and information system for structured information on Coral Reefs and their resources
- Provide key information to support decision-making by fisheries and environmental managers in developing countries
- Collaborate with other national, regional, and international databases
-

8) Improved Knowledge and Capacity for coral reef Fisheries Management C2A-2 by Randy Thaman

Project 1: Capture & the economic use of reef fish larvae

Project 2 : Improve knowledge and capacity for coral reef fishery management

Project 3. Development of Synoptic Indicators

Biogeochemical records of historical impacts on coral reefs using *Porites* coral cores

- Objective of the coral geochemistry using *Porites* colonies.
 - Distinct annual density bands
 - Continuous growth
 - Luminescence lines
 - Coastal land use impacts
- Chronology-geochemical records
 - density bands
 - luminescence
- Sediment and flood volumes
 - Trace metals
 - Isotopes

CRISP Component 2A: Knowledge, management, rehabilitation and beneficial use of coral ecosystems

"Status of coral reefs and use of their resources"

Workshop

2nd - 5th April 2007, CRIOBE, Moorea, French Polynesia

Organized by René Galzin, EPHE

Summary of Day 2: General Discussion

Agenda:

8:30 – 9:00: Agenda of the day by the three leaders: R. Galzin, J. Ferraris and Kenneth T MacKay

9:00 – 10:00: Discussion (including sciences, students, integration/collaboration, production/outputs, and perspectives)

- C2A-1: René Galzin

10.00 – 10:30: Morning tea

10:30 – 12:30 - Discussions

- C2A-2: Jocelyne Ferraris
- C2A-5: Randy Thaman

12:30 – 14:00 - Lunch

14:00 – 16:00 - Discussions

- C2A-3: Caroline Vieux
- C2A-4: Bill Aalbersberg

16:00 – 16:30 – Break

16:30 – 17:30 - Conclusion

Project 1 - Harvesting reef fish larvae and developing their economic potential

Both Fiji and French Polynesia presented the pro and con of Larval Recruitment and Research larval identification within their own sites/country and some of the participants asked about the real benefits of restocking.

Also, from the discussion, it was noted that there is a real need for more cooperation, for production of outputs, and for comparison of tools. It was noted that French Polynesia has a good expertise on that subject. Participants point out also that information sharing is really needed and useful.

It was also mentioned that an improvement of the tools for more success in collecting fish larvae for aquarium trade is needed. Also an identification of targeted species will be useful, and it was noted that the catch of endemic species was appreciate in the aquarium market (Hawaii was cited as a good example).

French Polynesia presented that they had very good programmes and results for the giant clams. French Polynesia thinks it is a good programme for the South Pacific and they would like to do something with CRISP if possible.

There were a lot of questions on the real economics value at the present time since most of the species caught are not the one needed. There was a feeling from some participants (USP) that too much money may be invested for poor results. For example, in Fiji there are problems with eutrophization and decline of herbivore. Thus, intervention of that may be better use of the money. MPA could be more appropriate some time. Polynesia point out that MPA could also be expensive to set-up and take a lot of time.

Restocking should also explore for the benefits that it could bring to tourism (hotels), since it looks like that hotels are ready to fund projects. In fact, in Frenc Polynsia it is working fine, and it is needed.

To summarize, Fiji and French Polynesia have 2 different approaches. FP has a good success and expertise in restocking and Fiji in setting-up MPAs.

Also, the setting-up of coral garden, with local restocking and with the involvement of hotels, fishermen should move forward.

It was also mention that a project was being developed to attract targeted species (high value species) using pheromone.

collaboration

It was decide to look more at him JICA program in Vanuatu (4 millions projects) and see if collaboration with CRISP would be possible.

Integration with other component: coral replanting (ref restoration project). A pilot site in Samoa is plan (coral garden).

Partnership with hotel on ICM

Project 2 – Improving knowledge about coral ecosystems and the capacity to manage them

The following 3 presentation were made:

1. Presentation by Ambroise
2. Presentation by Nicolas Pascal (a bio-economic approach to assess the implantation of small size protected area and fishery management strategy using ISIS-Fish model: the case of Tikehau (French Polynesia) commercial fisheries

3. Presentation by J.B. Herrendshmidt: Through community-based fisheries management in Ouvea (*iaai*)

USP would like to use the work (especially the tools) of J.B. Herrenshmidt.

The idea of the participation of C2A at the next meeting of the component 1 was raised, but it was decided that it was too early at this stage, but a close collaboration between the components is needed, especially in site selection.

Lack of communication:

A big lack of communication was identified at the early stage of the project (for example, emails were staying without replies...). In some way, USP felt disrespected. Also, a better choice of some students could have been done with closer collaboration. Or some students were sent to USP with no clear working plans and objectives. All the participants admitted part of their responsibilities, and will seek better, closer cooperation in the future. Also, it was asked to establish a better restitution, circulation of the results once the projects/thesis are completed.

However, the problem is past and now USP are identified a key focal point (nominated by the dean) and this is Kenneth T MacKay is the official contact.

Project 3 - Formulating composite indicators and monitoring coral reefs

2A31 (action a): literature

At the last meeting in Suva, people were identified to work on the synthesis for indicators on coral reef health. However, participants were wondering if it is still needed?

It was mentioned that The SocMon meeting to be held in May has done most of this work already. Thus, CRISP should participate in the SocMon meeting and a person from IRD should go.

The project manager also reminded that the CRISP agreed to test on site the results (indicators) of the SocMon. Thus, the cooperation with NOAA SocMon initiative and CRISP is very important,

Decision: It was decided that IRD will think about participating the SocMon meeting in Suva (4-5 May 2007). Also IRD was asked to look at LMMA process and the SCP one.

2A31 (action C): Remote sensing

Two atlases have been published. One for the French Polynesia (no funding from CRISP) and the second one (partly funded by CRISP) for PGN. The atlas of the Pacific is beginning now and will be available online.

Fiji expressed an interest in GIS and wonder how it could access the Fiji want to access the IRD millennium assessment project.

Action:

Fiji will contact again the IRD millennium assessment project for data

It was also noted that CRISP money was used to hired a GIS officer for 3 years at the SPREP.

2A31 (action D): guide

Hopefully the 2004 will be launch soon. The status of the reef for the Pacific 2008 will be produce and well disseminate. It is a consolidated report from the compilation given to given to Clive Wilkinson for the Status of the Reef 2008. GCRMN will be asked to acknowledge the CRIPS project.

Project 4 – Skills and knowledge transfer and capacity building

2A41 – databank and Regional database

More discussions are needed on the definition of the field for the database and its purpose (of the database). A small meeting with different existing database managers may be appropriate (to look at the purpose of other database). Also, the work should coincide with the the GCRMN is doing?

It was also remind to the participants that the COREMO should be operational mid- 2007. COREMO is not a database per say but a tool to allow the homogenization of data collecting with different methods. Also, COREMO has Fisheries indicators.

COREMO needs more development and CRISP will allow the extension for the South Pacific.

Question:

Is it still relevant for IRD to work on the database?
--

2A42 - Communication

A CD for New-Caledonia is being developed and should be release in 2007 (in French).

It was noted that the LMMA produce a community biological marine monitoring training video (only in English but it would be very easy to dub it in French). A socio-economic video is planned to be released and it would be discuss during the SocMon meeting. These videos were not funded on CRISP money.

2A43 – Training courses

A monitoring training course took place in November 2006. 6 people from 5 countries were trained (Cook, Tonga, Tokelau, Kiribati and Wallis and Futuna).

2A44 – Student exchanges

In December 2006, a meeting with French, Japan and Australia was held. One of the output of the meeting was discussion on the creation of a network of universities around the Pacific rim (to allow a better student exchanged).

It was note that the initiative was a good approach but before moving forward, the need and purpose of this network of universities should be explore more since there a lot of already networks and most of them are not very effective. A bilateral relation may be more appropriate.

USP, IRD and EPHE are very happy with the current work relation, and IRD is encouraging the participation of USP student to come to IRD (since grants for PHD foreign students are available).

Action:

USP will explore and try to find master francophone students for exchange with IRD

Action:

It was noted that an up-to-date list of students is needed.

Project 5 – Specific studies: i) Effects of atmospheric carbon increase on reef evolution and ii) Contribution to development of ecotourism.

2A51 – CO2

A student (in Perpignan) produced a report on CO2 (What is happening with the CO2 in the pacific regarding the increase of the temperature). The report is currently under review by specialists. A final discussion will be held in Perpignan in May, before the final publication of the report.

2A52 - tourism

The discussion on ecotourism was held on Monday.

Discussion on indicators

A discussion on the definition, choice, sampling methods, interpretation, reference values and purpose of indicators for coral reef health monitoring was held among the participants. The purpose of the discussion was to agree on a common definition and common indicators for the programme since indicators are needed for several activities (activities 9, 11, 13, 16, 18).

Participants agreed that indicators are needed (for guidance for people, and provide them easy indicator to monitor, also indicators need to be easy to use in the Pacific) but the CRISP programme does not need to reinvent the wheel since there are already several programmes, methodology the use indicators.

In order to move forward and to have a clear vision on indicators, the participants agreed on:

Actions:

Review existing indicators and literatures. For example, a paper reviewing existing GCRMN indicators will be presented at the next PSC.

Review the "NOAA How is Your MPA Doing? A Guidebook of Natural and Social Indicators for Evaluating Marine Protected Area Management Effectiveness (<http://www.effectivempa.noaa.gov/welcome.html>) and on the The Healthy Reefs for Healthy People Initiative ([http://www.healthyreefs.org/./about us.html](http://www.healthyreefs.org/./about_us.html))
Use the upcoming socMon meeting

Miscellaneous

List of document for the CRISP programme manager:

- Recommendations for CSC meeting
- Action plan for 2007
- synthesis of anticipated partnerships

Reporting

The procedure for the planning and reporting is:

1. At the beginning of the year, a template should be sent to the programme manager with the first reporting: project, description, indicators, outputs....
2. An action plan for the 2 semesters

Also, the CRISP programme manager reminded the category for the "products":

- Technical report
- Scientific publication
- Mission report
- Communication tools

A summary of the document sent will also be appreciated.

Consolidated report

The second consolidated report will be available the next week in French and at the end of April in English.

21st Pacific Science Congress

It was reminded to the participants, that the CRISP coordinating unit will provide 850 euros for the participation of the 21st Pacific Science Congress. Around 15 abstracts from the CRISP members have been submitted.

CRISP will chair the session in fisheries management. It was also reminded to the participants that participating at the 21st Pacific Science Congress was not a high priority anymore. Moreover, the next PSC may be held in French Polynesia in 2009.

WORKPLAN AND PERSPECTIVES FOR 2007

2A11 RESEARCH LAVAL RECRUITMENT

- David Lecchini. Work on settlement on larvae (French Polynesia, New Caledonia, Fiji)
- Work on invertebrates larvae (French Polynesia, Wallis and Futuna)
- PhD of Julien Grignon, and Arpana Pratap Msc. Fiji
- PhD of Laure Carassou New Caledonia
- PhD of Camille Mellin New Caledonia
- Scientific publications (10 years of Fish larvae collection in FP, 2 years of Fish larvae collection in Fidji, comparatives studies of collecting tools, Okinawa meeting, etc....)
- Genetic studies in Perpignan by Shital Swarup

Dicussions/

Joelyne: what we want to do for 1st semester?

Eric said to do it for the 2nd semester

Jocelyne: what kind of activities for Laure and Camille inside the CRISP? René will complement the informations.

Jocelyne: what is Shital going to work on?

René: Tim asked Shital to have a technical genetic approach.

2A12 RESEARCH LARVAL IDENTIFICATION TECHNICIS

Collection of pictures:

- French Polynesia, Remoissenet
- New Caledonia, Ponton
- Wallis and Futuna, Junker
- Philippines and others, Lecaillon
- Fiji, Grignon

Discussions/

The purpose of this activity is to have a book at the end of the programme with many pictures for the whole Pacific.

No production for 2007 but just on-going picture collection.

Neil: Biocode programme will help with pictures and larvae identification .

2A13a IDENTIFY COUNTRIES FOR KNOWLEDGE TRANSFER.

2A13b IDENTIFY SITES IN-COUNTRY FOR HARVESTING OPERATIONS.

- Collection in Fiji until Dec 2007 but was initially planned until May.
- Restocking in Fiji until Dec 2007.

Discussions/

René: Julien is late, a request for funds has been made to French embassy and accepted. This grant will enable Julien to continue the collection until the end of 2007.

Kenneth: restocking has to be done after Dec 2007.

René: why Julien has not started restocking?

Kenneth: Tim Pickering said the restocking phase has not been well-planned so far and that's the reason why it hasn't started.

René: Julien arrived in oct. 2005 and had to write a research application. In Apr. 2006, he gave the first presentation for his PhD and he was given recommendations. After that Julien took another year to write a new proposal. René does not understand why it is taking such a long time.

Kenneth: Shirleen will go to IRD and she may need additional funds to stay longer.

René: it is ok for the funding from Dominique Ponton's side, but

Jocelyne: Ponton told her he needed additional funds.

It is planned for July 2007.

Kenneth: money allocated to Arpana to collect post-larves is not part of the CRISP but the results will be shared. The plancton collection of larvae is a complement of larvae collection.

2A14 LEGISLATION

- develop an review on draft regulations for Fidji by Dec 2007.
- Discuss with Aquarium Industry & Fiji Fisheries.
- Obtain draft French Polynesia legislation by Dec 2007.

Partnerships

Component 1 (MPA seeding)

Component 2B (restoration)

Component 3

2A21a CONTINUATION OF PROCFISH

- ➔ DemEcoFish results in Tonga and Fidji: « Assessment of coral reef fisheries by a multidisciplinary panel of indicators: a comparative approach of twelve sites in two Pacific countries" J. Ferraris, M. Léopold, M. Kronen, M. Kulbicki & P. Labrosse
Communication at Pacific Science Congress, OKINAWA 12-18 juin 2007 (+6)

Publication (+12)

- ④ *Other ? Field trip in Vanuatu? (+12)*

Discussions/

Bill: ProcFish protocol is too complicated

Jocelyne: need to go together and decide about a list of indicators.

Kenneth: who are the IRD team going to work with in Vanuatu? GCRMN coordinator at Fisheries, PeaceCorps.

Jocelyne: they are considering all the other partners and the other methods.

Bill: work need to be country-driven, enhance local ability, LMMA network needs help.

Bill worked in the water quality,(paper test=cheap), is it possible to apply this to monitoring activity, find indicators according to the money available.

What would be best practice of reef health? Validate inexpensive methods as much as we can.

Caroline: role of SPREP to facilitate the work in Vanuatu.

2A21b SOCIO-ECONOMY

IRD

- **Site Participative Management:**

of Ouvea (UNESCO World Heritage)

Publication by Herrenschmidt, Leopold & Thaman (+?)

Integration of knowledge and data on a GIS for management (+12)

- Study on participative management of coral ecosystems through Marine Protected Areas: Navakavu case study

Translation in english of the Research project of A. Hubert (+6)

- Estimating the Total Economic Value of the Navakavu LMMA, Fiji: Project Overview
Work made by Tanya O'Garra (+12)

USP

- **Conduct workshop on Catch per Unit Effort.** Data collection techniques including training of community members to integrate socioeconomic factors in fisheries management.

- **Provide support resources** for collection of Catch per Unit Effort data in local communities.

- **Establish data analysis,** handling and reporting protocols for Catch per Unit Effort data.

- **Economic assessment of coral reefs and MPA effectiveness:**

- 1) Conduct workshop to develop agreed methodology.

- 2) Field work to trial, assess and refine methodology.

Discussions/

Bill: need to use the school children method at a few sites to compare with the CPUe.

Bill: participants of the workshop on CPUE are the head of the monitoring teams for each of the 30 communities involved in Community Based Management.

Bill: workshop on economics partly based on Tanya's work. Assessing the total economic value of sites with MPA and without, to measure the economic effect of MPA. Workshop planned by the middle of the year, done in connection with John Parks (How is your MPA doing?) venue.

2A21c FISHERIES INDICATORS

IRD

- **methodological comparison between data collected on Muaivuso site:**
"Comparison of underwater survey techniques of reef fish monitoring", M. Léopold, D. Lecchini et Al.
Publication (2) prepared by 1- IRD and 2- USP (+6)
- **Ecosystemic indicators:** Guillemot, N., P. Chabanet, D. Pelletier, T. Langlois & M. Léopold. 2007. Impact of an Expected Anthropogenic Disturbance in New Caledonia (South Pacific): which methods should be used to monitor reef fish communities?
Communication at Pacific Science Congress, OKINAWA 12-18 juin 2007) (+6)
- **Community-based monitoring :** « Community-based monitoring of coral reef fish resources in two contrasted islands of French Polynesia". A. Brenier , J. Ferraris , R. Galzin
Communication at Pacific Science Congress, OKINAWA 12-18 juin 2007) (+6)
Vulgarization (+12) C2A4
- **Bio-economic modelling :** case study of Tikehau atoll (N. Pascal)
Restititon of the first results during field trip 10-13 April 2007 (+6)
First results of the modelling the lagoon fishery with ISISFISH (+12)
(invertebrates fisheries, H. Jimenez PhD) - Field trip in Vanuatu? (+12)

USP

- Communication on the description of the Fishery of Rotuma at PSC21 in Okinawa.
- Progress report

2A22 BIODIVERSITY

- Complete analysis and databasing of finfish studies
- Put proposal to French Embassy for comparative studies in Wallis and Futuna to interface with Rotuma and other W. Polynesian studies
- 5 Master thesis studies on:
 - Conservation Status of Biodiversity of Kiritimati Atoll (A. Ioran)
 - Conservation Status and Cultural Ecology of Finfishes Resources of Beqa Island, Fiji (S. Kuruyawa)
 - Conservation Status and Cultural Ecology of Shellfish Resources of Gau Island, Fiji (A. Rokomate)
 - Ecology, Conservation Status and Ethnobiology of Parrotfishes in the Fiji Islands (T. Fong)

Scientific Outputs :

- 5 fishlists/dictionaries for Fiji (T. Fong, R. Thaman)
- Fishlist/dictionary of W. Polynesia (R. Thaman, T. Fong)
- Fishlist of Tikehau and E. Polynesia (R. Thaman, R. Galzan, N. Maihota)
- 2 papers PSC in Okinawa (R. Thaman – Vernacular Finfish Taxonomies and Ethnobiology of the Pacific Islands; T. Fong – Conservation Status and Ethnobiology of Parrot Fishes in Fiji)
- Book on Food Fishes of the Fiji Islands (R. Thaman, T. Fong, J. Seeto)
- 2 MAs (A. Ioran, S. Kuruyawa)

Discussions/

Jocelyne: what about the CRISP logo in the above studies mostly not funded by CRISP?

Randy: CRISP has been facilitating even if it's not the major donor, the logo can be added with others.

Jocelyne: what kind of comparison between Rotuma and Wallis and Futuna?

Bill: comparison of biodiversity, fish names but need to ask Wallis and Futuna first.

Partnerships: IRD, USP, CRIOBE, GUMP station, Univ. of Denmark

2A23 COMPUTER TOOLS

- UVC training DVD
- REACT product, to enter fish and habitat data, product not finished...need to see the difference with CoReMo
- CD Rom to build a metadatabase

- SISFISH Modelling

Contribution to the design of new marine protected areas using the Isis-Fish bioeconomic model (Pascal N. Et Al)

Communication at Murcia MPA symposium September 2007) (+12)

Partnerships

IFREMER

Reunion University

Component 1

2A31a LITERATURE

- Presentation of a framework analyzing the bibliography on indicators (+6)
- Bibliography analysis (IRD) (+12)

2A31b REMOTE SENSING

- Australian PhD student—
 - Further analysis of maps
 - Accuracy
 - Area
 - Cost effectiveness
 - Fiji Meeting with users (Aug)
- Undergraduate project—Integrating Traditional Knowledge & GIS
- MSc –Spatial Modeling of Reef Fish Communities—French Student funding???
 - Variables physical
 - Coral zonation
 - Human pop density
 - Fishing pressure
- Kiribati ??? possibly in conjunction with USP PhD
- GIS data capability & integration with LMMA
- Integration & Value Added to IRD work (Millennium Project etc)

Discussions/

Jocelyne: who are the users in the Fiji meeting?

Bill: they are looking at 3 sites, Muaivuso, Suva lagoon and Kadavu, users go from community to FLMMA network

Kenneth: a MSc will be incorporating traditional knowledge in GIS

Kenneth: proposal for a thesis to do spatial modelling a reef fisheries, taking existing data sets. Purpose: Estimate and predict spatial pattern of fishes.

It's a French student and there is a need of 3000 euros for registration fees.

Jocelyne: she has money for collaboration.

Kenneth: Kiribati involvement? Original workplan included Kiribati. Is it necessary to work in Kiribati?

Eric: it is not compulsory.

2A31c TEST OF INDICATORS

IRD

- **Video:**
 - comparaison between video transects and field transects
 - comparaison between baited and non baited video
 - video fix point grid
 - use of stereo systems

Field Trip reports (+12)

Video-based observation techniques for monitoring fish and habitat in Marine Protected Areas. Pelletier et Al.

Communication at European MPA symposium, Murcia, September 2007 (+12)

- **Underwater Visual Census:**

Evaluation de la fiabilité des comptages de poissons en surface – Îlot Maître Nouvelle-Calédonie”, M. Léopold

Publication (+12)

“Assessing the initial state of fish assemblage to adapt monitoring protocol for managers in a network of coral reef Marine Protected Areas – Moorea, French Polynesia”, Emmanuelli E., Ferraris J; Lison de Loma T & Galzin R.

Communication for European MPA symposium, Murcia, September 2007 (+12)

USP

- Expand logger program, collect, download & analyze data
 - Reinstall loggers in critical sites for bleaching event
- Continue coral coring & analysis to identify critical indicators (non CRISP funds)

2A31d GUIDE

- 2004 Status of Reef Report May completed
- 2007 Status of Reef Report
 - Notify coordinators
 - Report outline
 - Facilitation in surveys & acquiring resources for study
 - Coordinate Fiji Survey including identification of critical indicators to study 2007-08 anticipated bleaching

2A32 NETWORK MONITORING

Polynesia Mana

- Communication by Taratau Kirata (Kiribati national coordinator) at PSC21 in Okinawa on coral reef evolution between 2004 and 2006, June 2007.
- In-country assistance in Tonga (by Dec 2007)
- Writing of the Polynesia Mana chapter for “Status of Coral Reefs of the World:2007” (by dec 2007)

SouthWest Pacific

- Support for 2007 Status of Reef Reports
 - Assist Regional Coordinators in planning entering data --June -Oct
 - Fund surveys and reporting in Fiji
 - Assist coordinators in preparing status off Coral reefs Oct-Dec
- Expand Temperature logger program in Network
- Training in database Solomon Islands, Vanuatu.

Partnerships

IFREMER

Reunion University

Component 1

University of Queensland

2A41 DATABANK+REGIONAL DATABASE

USP

- Database & information centre for coral reefs servicing the SW Pacific node GCRMN established 4 staff
 - 1 Database
 - 1 ReefBase & GCRMN coordinator
 - 1 reefBase library technician
 - 1 WorldFish Reefbase Coordinator
- Awaiting data base- COREMO
- Compile, enter and assist in entering data
- Monitoring Network South West Pacific Node
- Paper for PSC 21 ---Are we Measuring the Correct Parameters in Coral Reef Monitoring? Lessons from the Global Coral Reef Monitoring Network South West Pacific Node, Kenneth T MacKay, Priti Singh and Helen Sykes.

IRD

- 2007 => Problem : type of data, software, people involve to collect all the data, to be homogeneous between different data recorded. Do we delete this activity??

2A42 COMMUNICATION

USP

- LMMA lesson-learned to be translated, 3000 euros
- Socio-eco video training for Pacific Island Communities, 6000 euros. It is scripted and has to be included in the SocMon process.

IRD

- **DVD for 2007 in progress**

FILM of 26 minutes with 10 modules about coral ecosystem

1. Polype = animal who create the coral reefs
2. Environmental factors for the life of coral
3. Biodiversity in coral ecosystems
4. Exemple : Biodiversity in fish taxa
5. Reproduction in coral ecosystems
6. How to eat in coral reefs
7. Coral reefs = essential biotope for the biodiversity
8. Natural and Human Threats on coral biodiversity
9. Toward a sustainable coral ecosystems
10. Legends on coral reefs

=> The DVD will be finished in 2007 (responsible Pascale Chabanet – IRD)

Discussion/

Peter: relevance of LMMA video for French countries. Possibility to adapt the video, add footages.

Eric: The objective is to edit a CRISP video including LMMA video footages, items from French territories, World Heritage, etc... to be ready for the IYOR 2008

Caroline: relevance of a DVD with New Caledonia footages for other Pacific Island Countries.

2A43 TRAINING COURSES

USP

- Regional training Solomon Islands & Vanuatu (May-June) by SWPacific node.

IRD

- New workshop IRD/USP in the last semester of 2007 about fish identification and size estimation (1 week)
- Seminar about coral reef ecosystems with IRD scientists from New Caledonia (1 week)

Discussions/

Bill: we need to test the hypothesis of IRD about over-estimation of fish abundance in other sites before communicating widely on the results.

Bill: as for the seminar, USP needs to identify gaps that could be filled by IRD expertise. IRD can be part of a postgraduate course, organized by USP and that would provide academic credit for the attending students.

Kenneth: Laurent's work fish migration using radio tags would be interesting as a course subject.

Bill: good to train people who are in the job

2A44 STUDENT EXCHANGE

USP

- USP student to IRD larval fish—otoliths

IRD

- At least 2 student exchanges

Fiji partners have been waiting for opportunities to send student in FP but did not happen. They are still figuring out how to spend the money.

Bill: definition of what a student exchange is. It cannot be a French student going to a French overseas territories or countries.

Partnerships:

MPA component

LMMA network

2A51 CO2

- MsC student in Perpignan. The study has been circulated among international specialist. A workshop will be organized and an International Committee will amend the work and a report will be circulated by the end of the year.

2A52 TOURISM

- finalize coral reef certification scheme
- training of trainers for hotel worker awareness
- coral reef interpretation for village tours/resorts
- Explore exportation to French Polynesia and maybe New Caledonia

Discussions/

Bill: Fiji Hotels are supportive of the Green Globe certification.

Peter: it is worth trying this kind of certification in French Polynesia.

Partnerships:

**Ministry of Tourism and Environment in French Polynesia,
Component 1D**

ex-SPTO (South Pacific Tourism Organization): to be made aware and hopefully supportive.

Day 4 Thursday 5th April: General Discussion
Moderator: Jocelyne Ferraris, Kenneth MacKay and René Galzin,
Secretary of the session : Adrien DELVAL

7.15 - 7.30 : Agenda of the day by the three leader: R. Galzin, J. Ferraris and
Kenneth T MacKay

7.30 - 8.00 : Reading of the two documents
Document of Jocelyne Ferraris : **Sum up of 2006 results**
Document of Caroline Vieux : Action plan and Synthesis of anticipated
partnerships for 2007

7.30 - 9.30 : 1/ Discussion of the two documents
Sum up of 2006 results
Modifications and suggestions taken in account by Jocelyne Ferraris and made directly on her
powerpoint presentation.
Action plan and Synthesis of anticipated partnerships for 2007
Modifications directly made on the document by Caroline Vieux.
2/ Others points to discuss

- a- Next International conferences with Crisp interest
 - Socio-economic indicators workshop (May 2007)

IRD must be present or at least send some presentations

- Okinawa (June 2007)

15 CRISP people present there, of whom 12 people from the Reef Fisheries.
18 presentation in total, of which 12 from the CRISP.

- Crisp Townsville seminar (2nd to 7th of Sept 2007)

50-60 people. Half from the South Pacific countries + CRISP French or USP experts.
Goal: harmonization and development of regional action for sustainable development of coral
reef and related ecosystems for long term benefit.

Themes:

- Theme 1: MPA
- Theme 2: ICM
- Theme 3: Sustainable industries
- Theme 4: Governance (Integrating Traditional Management)

1 person from Component 2A has to make a case study and a presentation there.
The meeting takes everything in account (in terms of paying the trip, the stay...)

- Spreng Conf Nature Cons (end Oct 2007)

In Papua New Guinea. Regional conference on conservation topics. Every 4 years.
Countries report their activities regarding the past action plan and present a new one for the
next 4 years.

Critical meeting for CRISP as it could influence or be a part of this action plan. Moreover it is
regional, CRISP could at least do a side event.

In term of conservation, it could be interesting to try to involve the communities that are not
necessarily in hot spots of biodiversity.

70 -80 people expected to attend the conference.

- Fort Lauderdale (July 2008)

ICRS meeting.

Eric is trying to find money to send people there. It would be interesting to have young
CRISP scientists do their presentations there

- b- Date of the 2008 workshop in Noumea

Better in the early 2008. Dates suggested: 4th - 8th of February. But need confirmation.
Suggestion: invite local fishermen from South Pacific to the workshop.

c- New Crisp 1 calendar

Calendar divided in 6semesters from January 2006 to December 2008.

December 2008 is the last date to engage money. So in December 2008, give back the last report and say that there is no money anymore.

At each beginning of the year, 300 000 euros are received.

USP will send its financial report in July 2007 and will run out of money in June 2008.

d- Improvement of C2A component coordination?

Major problem of communication between the 3 heads of the different institutions: IRD (Jocelyne Ferraris), EPHE (René Galzin), USP (Kenneth MacKay).

Each Head need also to make a plan for the semester to prevent cross over and send it to one another. After they each decide to send it or not to other people, teams...

It would be good also to have a list of the management people and the people working in CRISP in each of the 3 institutions, and their function. It's going to help knowing who do what.

USP and IRD offer to make Visio conference.

e- Improvement of CRISP1 programme coordination and implementation

-Improvement of the reporting procedure

OK

-Others ideas

It would be helpful for Eric Clua if the scientists could tell what can be put online and what cannot.

Collaboration with Jean Brice Herrens Schmidt (ICM) in Fiji → closer collaboration between USP and ICM.

For MPAs, on process for creation in Vanuatu, Fiji (2 sites), Cook Island.

f- CRISP 2

good contact with the delegate of EU and may still support the CRISP program. CRISP get money from ACP countries and French Territories. For CRISP2 the French will give a higher support.

CRISP has to become a Pacific initiative with Pacific tools, and then it needs to integrate regional program like ProcFish, SPC.

If there is a CRISP 2 it should involve a coastal fishery management.

Before starting CRISP2, USP, IRD and EPHE need a preparation time to present a common application and proposal.

CRISP 2: 10 millions euros.

9h30 - 10.00 : Morning tea and coffee

10.00 - 12 .00 : Final Discussion

Final recommendation from Eric Clua, Head of the CRISP project

- 1) EPHE – IRD –USP are starting to work together, they have themes and their work are getting closer but they still have gaps.
- 2) CRISP goals: Scientists with the money make tools and thereby publish papers but the aim of these tools is to help the local community. CRISP need more field results, applications.
- 3) More cooperation between the different components (2 and 1).

END of the meeting component C2A

Les récifs se portent bien

De notre correspondant
Jeannot Rey

Depuis le début de la semaine, une dizaine de chercheurs attachés au "Crisp" (Initiative Corail pour le Pacifique Sud) sont en séminaire en vue d'effectuer un bilan après un an et demi d'études sur l'état de santé de l'écosystème corallien de la région. Trois instituts sont à la tête de ce programme, le CNRS (Centre national de recherche scientifique) représenté par René Galzin, l'Université du Sud Pacifique (Fidji) par Ken MacKay et l'IRD

(Institut régional pour le développement) par Jocelyne Ferraris.

Un bilan des observations pour l'année 2006 est au programme, ainsi que les actions à mettre en place pour 2007. Selon René Galzin, porte-parole pour La Dépêche, les récifs du Pacifique Sud se portent bien, malgré que certaines îles, notamment en Indonésie et aux Philippines, souffrent de l'activité humaine, dont la surpêche et l'érosion des côtes, conséquences d'une forte densité de la population.

"Un récif corallien a ceci d'im-

portant qu'il est un écosystème favorable à l'explosion de la biodiversité. Par ailleurs, il couvre le littoral côtier de 110 pays au monde, avec pour premier rôle de protéger les îles" souligne René Galzin.

La France présente dans trois océans

Le projet Crisp est né il y a cinq ans, par une mission d'expertise dans le Pacifique Sud, à la demande des autorités françaises qui souhaitent exporter un savoir-faire acquis au niveau de

la recherche fondamentale et appliquée, vers les Pays du Pacifique Sud.

Ce programme reçoit ses sources de financement de la France métropolitaine et de la Communauté européenne, ainsi que de quelques ONG. Rappelons que de par ses pays et territoires d'Outre-mer, la France est le seul pays au monde à avoir sous sa responsabilité des récifs coralliens dans les trois océans : Atlantique avec les Antilles, Pacifique Sud avec Wallis et Futuna, et la Polynésie française, et l'Océan Indien avec la Réunion. ■



Tout savoir sur l'état de santé de nos récifs, élément déterminant pour le développement de la biodiversité.



Les chercheurs du Crisp (Initiative Corail pour le Pacifique Sud) effectuent un bilan sur la santé des récifs coralliens de la région Pacifique Sud.

Herrenschmidt J.B	Davies N.....MacKay K	Pascal N	Allbersberg B	Lecchini D
Ferraris J	Petit J	Galzin R	Vieux C	Lovell E
				Thaman R



Parmi les chercheurs en séminaire à Moorea, les représentants de l'Université du Pacifique (Fidji), dont Ken MacKay.