KoSoPFF 2013 Seoul Symposium

The Governance and Conservation Measures for the Responsible Fisheries in the South Pacific Ocean

October 17, 2013, 13:00~18:00

전국은행연합회관 2층 국제회의실 | Korea Federation of Banks, Seoul, Korea

Co-Hosted by KMI 한국해양수산개발원 KOREA MARITIME INSTITUTE, USP THE UNIVERSITY OF THE SOUTH PACIFIC

Organized by KoSoPFF Korea-South Pacific Fisheries Forum

Sponsored by 해양수산부 MINISTRY OF OCEANS AND FISHERIES, 국립수산과학원 National Fisheries Research & Development Institute, FIRA 한국수산자원관리공단 KOREA FISHERIES RESOURCES AGENCY, KOFA 사단법인 한국원양산업협회 Korea Overseas Fisheries Association, FFA, CEMARE/UP

프로그램

개회식 — **사회 : 홍현표 실장 (KMI)**

등 록 (12:30~13:00)

13:00~13:10	**개회선언 및 개회사** 김성귀 (한국해양수산개발원 원장)
13:10~13:20	**기념사** 손재학 (해양수산부 차관)
13:20~13:30	**축 사** H.E. Bill Veri (주한 파푸아뉴기니 대사)
13:30~13:40	**KOSOPFF Report** "남태평양에서의 KOSOPFF 역할과 향후 발전방향" Joeli Veitayaki (KOSOPFF 공동의장)
13:40~14:00	**기조연설** "수산업의 친생태계 접근법에 기반한 거버넌스와 모니터링 체계" Premachandra Wattage (영국 포츠머스대 교수)

기념 촬영 / Coffee Break (14:00~14:30)

심포지엄 (14:30~16:00)

세션 1 남태평양에서의 수산거버넌스와 자원보존조치

14:30~14:45	**"남태평양 도서국의 수산거버넌스와 모니터링 시스템"** Esaroma Ledua 교수 (USP) & 홍현표 실장 (KMI)
14:45~15:00	**"태평양지역에서의 IUU 어업행위에 대한 MCS 대응방안"** Peter Graham 감시제도 담당관 (FFA)
15:00~15:15	**"남태평양해역에서의 책임있는 어업을 위한 한국의 역할 -국제옵서버 프로그램을 중심으로-"** 최석관 박사 (국립수산과학원)

세션 2 남태평양과의 국제협력 이슈

15:15~15:30	**"남태평양도서국의 수산분야 개발현황과 향후과제"** Patricia Jack-Jossien 조정관 (PNA)
15:30~15:45	**"자원관리와 양식개발에 있어서 남태평양 도서국과의 수산협력"** 박정숙 박사 (국립수산과학원)
15:45~16:00	**"남태평양지역과의 기상분야 협력 방안"** 유승협 사무관 (기상청)

Coffee Break (16:00~16:20)

종합토론 (16:20~17:30)

좌장 박성쾌 (부경대학교 교수)

패널 황선재 (수산자원관리공단 박사), 신현애 (원양산업협회 부장), 박병률 (경향신문 기자), Joeli Veitayaki (USP 교수), Premachandra Wattage (영국 포츠머스대 교수), 정명생 (한국해양수산개발원 수산본부장), 류재형 (해양수산부 국제협력총괄과장)

만 찬 (18:00~19:30) **16층 양식홀**

PROGRAM

Opening Ceremony	**Convener : H.P. Hong (Director, KMI)**
Registration (12:30~13:00)	
13:00~13:10	**Opening Address** Sung Gwi Kim (President of Korea Maritime Institute)
13:10~13:20	**Welcoming Remarks** Jae Hak Son (Vice Minister of Oceans and Fisheries)
13:20~13:30	**Congratulatory Speech** H.E. Bill Veri (Ambassador of Papua New Guinea in the Republic of Korea)
13:30~13:40	**KOSOPFF Report** "Roles and Responsibilities of KOSOPFF in the South Pacific Region" Joeli Veitayaki (Co-Chair, KOSOPFF)
13:40~14:00	**Keynote Speech** "Governance and Monitoring System for Ecosystem Based Fisheries Management" Premachandra Wattage (Professor, Univ. of Portsmouth)
Group Photo & Coffee Break (14:00~14:30)	
Presentation (14:30~16:00)	
Session 1 Governance and Conservation Measures in the South Pacific	
14:30~14:45	"Governance and Monitoring System in the South Pacific region" Esaroma Ledua (Professor, USP, Fiji) & Hyun Pyo Hong (Director, KMI)
14:45~15:00	"MCS Response to IUU Fishing in the Pacific Region" Peter Graham (Surveillance Officer, FFA)
15:00~15:15	"The Role of Korea for the Responsible Fisheries in the South Pacific Ocean Focus on International Observer Program" Seok Gwan Choi (NFRDI, Korea)
Session 2 Special Topics on International Cooperation with South Pacific	
15:15~15:30	"The Development Status and Future Issues of Fisheries Sector in the South Pacific Islands" Patricia Jack-Jossien (Vessel Day Scheme Manager, PNA)
15:30~15:45	"Possible Fisheries Cooperation with Pacific Island Countries with respect to Resource Management and Aquaculture Development" Jeong Sook Park (NFRDI, Korea)
15:45~16:00	"A Proposal of Cooperation in South Pacific Ocean using KMA Meteorological System" Sung Hyup You (Deputy Director, KMA, Korea)
Coffee Break (16:00~16:20)	
Panel Discussion (16:20~17:30)	
Chair S. K. Park (Professor, PKNU)	
Panels Seon Jae Hwang (FIRA), Hyun Ae Shin (KOFA), Byung Ryul Park (Kyunghyang Newspaper), Joeli Veitayaki (USP), Premachandra Wattage (Univ. of Portsmouth), Myung Saeng Joung (KMI), Jae Hyung Ryoo (MOF)	
Gala Dinner (18:00~19:30) 16F Westin Hall	

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Opening Ceremony

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Congratulatory Speech	H.E. Bill Veri (Ambassador of Papua New Guinea in the Republic of Korea)

개 회 사

김 성 귀 (한국해양수산개발원 원장)

안녕하십니까? 한국해양수산개발원의 원장 김성귀입니다.

오늘 저희 2013년도 한·남태평양수산포럼(KOSOPFF) 서울 심포지엄 행사에 참석해 주신 내외귀빈 여러분, 그리고 멀리서 이번 행사에 발표와 토론을 위해 서울을 찾아주신 남태평양의 수산전문가 여러분과 국내외 수산관계자 여러분들께 먼저 심심한 사의의 말씀을 드립니다. 특히 이 자리에 참석해 주신 조엘리 베이타야키(Joeli Veitayaki) KOSOPFF 공동의장님, 손재학 해양수산부 차관님, 빌베리(Bill Veri) 주한파푸아뉴기니 대사님, 필리모네 카우(Filimone Kau) 주한피지대사님께 깊은 감사의 말씀을 드리고자 합니다.

친애하는 내외귀빈 및 참석자 여러분 !

남태평양 지역은 전통적으로 수산자원이 매우 풍부하여 우리나라의 원양산업 뿐만 아니라 세계 다른 나라에게도 큰 기회를 주었습니다. 다랑어 자원분야에 대한 우리나라의 원양어획 의존도를 살펴보면, 2012년도를 기준으로 한국의 원양생산량은 53만 8천톤에서 다랑어자원은 29만 1천톤으로 그 차지하는 비중이 54%로 매우 높습니다. 또한 우리나라가 생산하는 전체 다랑어 생산량의 69.4%가량이 남태평양의 PNA 8개국의 배타적 경제수역에서 어획되고 있습니다. 따라서 남태평양 지역은 우리나라 원양산업과 전통적으로 매우 긴밀한 관계를 가지고 있습니다. 그러나 이렇게 중요한 남태평양의 수산자원은 과거와는 달리 현재 많이 고갈 되어가고 있는 것으로 알려져 있습니다. 이에 저희 KOSOPFF에서는 남태평양 해역에서의 지속가능한 수산업의 발전과 책임 있는 수산업을 위하여 수산 거버넌스와 자원보존조치에 대한 논의의 장을 오늘 이렇게 마련하게 된 것에 대하여 매우 뜻깊게 생각합니다.

KMI는 수산분야에서 한국 수산업의 글로벌화를 적극 지원하기 위해 다양한 분야의 지역특수연구들과 함께, 권역별 협력네트워크 체제를 구축해오고 있습니다. 2010년의 한·아프리카수산포럼(KORAFF)의 창립에 이어, 금년 10월 2일에는 아프리카 세네갈에서 제5차 KORAFF국제심포지엄을 성공적으로 개최하였고, 오늘은 한·남태평양수산포럼(KOSOPFF)를 서울에서 개최합니다. 모름지기 글로벌화와 국제협력 관계의 발전은 이와 같은 인적 네트

워크를 기반으로 시작될 것입니다. 이를 위해 저희 KMI가 적극 지원할 것입니다.

끝으로 남태평양 등 해외와 국내 각지에서 발표와 토론 차 서울을 찾아주신 관계자분들과 오늘 행사를 위해 많은 지원을 아끼지 않으신 많은 관계기관 여러분들께도 거듭 사의를 표하면서 개회사에 가름하고자 합니다. 감사합니다.

2013년 10월 17일

Opening Address

Sung Gwi Kim (President of Korea Maritime Institute)

Good Afternoon, Ladies and gentlemen! I'm Sung Gwi Kim, President of the Korea Maritime Institute (KMI). First of all, I would like to extend my heartfelt thanks to distinguished guests, fisheries experts from the South Pacific Islands and fisheries-related officials from home and abroad for participating in today's Korea-South Pacific Fisheries Forum in order to deliver presentations and exchange valuable opinions. In particular, I would like to express my sincere gratitude to Joeli Veitayaki KOSOPFF Co-Chairman, Jae Hak Son, Vice Minister for Ocean and Fisheries, H.E. Bill Veri Ambassador of PNG Embassy in Seoul, H.E. Filimone Kau Ambassador of Fiji Embassy in Seoul for taking time out of their busy schedules in order to take part in today's event for extending their support and showing deep interest.

Distinguished participants!

The South Pacific region has been rich in fisheries resources, providing big opportunities to not only Korea's overseas fisheries industry but also other global nations. Taking a look at the dependency of Korea's overseas fisheries on tuna resources, as of the year 2012, tuna resources accounted for 54% (291,000 tons) of Korea's total overseas fisheries production (538,000 tons). In addition, 69.4% of Korea's total tuna production comes from the EEZ of eight PNA nations in the South Pacific. Therefore, the South Pacific region has been closely related to Korea's overseas fisheries. It is reported that this important fisheries resouces is depleting now unlike in the past. Therefore, KMI is preparing for this important symposium to discuss about governance and fisheries resouces conservation measures for responsible fisheries in South Pacific regions. This event will be beneficial and meaningful in that regard.

In fisheries, the KMI has established a cooperation network by region and conducted a diversity of regionally specialized research in order to actively support the globalization of Korea's fishing industry. Following the establishment of KORAFF in 2010, the fifth KORAFF international symposium was held on October 2, 2013 in Senegal. And today we will have KOSOPFF symposium in Seoul. The development of globalization and cooperation will start based on such a human resources network. To this end, the KMI will fully support and promote the scheme.

In closing, I would like to thank you all participants from overseas including South Pacific and those who work so hard to support this event. Thank you.

October 17, 2013

기 념 사

손 재 학 (해양수산부 차관)

안녕하십니까?

존경하는 조엘리 베이타야키 한-남태평양 수산포럼(KOSOPFF) 공동의장님, 김성귀 한국해양수산개발원(KMI) 원장님, 빌 베리 주한 파퓨아뉴기니 대사님, 필리모네 카우 주한 피지 대사님,

저명한 연사들과 내외 귀빈,

그리고 신사 숙녀 여러분

한-남태평양 수산포럼(KOSOPFF)은 한국과 남태평양 도서국의 수산협력 증진을 목적으로 2011년 9월에 창립되어 대한민국과 남태평양 도서국간 수산협력 증진방안 모색을 주제로 서울에서 첫 번째 심포지움을 개최한 바 있습니다.

지난해에는 피지에서 수산자원의 생물다양성 보존을 주제로 성공적인 심포지움을 개최하였습니다.

그리고, 금년에는 다시 서울에서 책임 있는 수산업 관리 및 보존조치를 주제로 이 자리에 모였습니다.

한-남태평양 수산포럼(KOSOPFF)은 수산 자원국과 원양 어업국이 함께 세계적인 전문가와 석학들을 초청하여 진지한 토론의 장을 마련한 것으로서 참으로 바람직하고 의미있는 포럼이라고 생각합니다.

특히, 남태평양은 우리 원양산업 참치 어획량의 90% 이상이 이루어지는 해역으로 동 수역의 어족자원관리 및 보존조치는 대한민국의 주요 관심사이기도 합니다. 따라서 이 포럼이 더욱 의미가 있다고 하겠습니다.

내외 귀빈, 신사숙녀 여러분!

대한민국은 1950년대 전쟁의 폐허를 딛고 짧은 기간에 경제발전을 이룩하면서 세계 최고 수준의 조선, 해운, 항만 개발·운영, 수산양식 및 원양어업 등의 해양산업 인프라를 갖추게 되었습니다.

그래서 지금은 세계 1위의 조선 국가이며, 5위의 해운 강국이자, 13위 수산물 생산국으로 성장하였습니다.

그리고, 2013년은 이러한 대한민국의 해양수산 발전사에 있어서 매우 뜻 깊은 해입니다.

해양수산인 모두가 힘과 뜻을 모은데 힘입어 새 정부 출범과 함께 해양수산부가 5년만에 해양 종합행정부처로 부활했기 때문입니다.

대한민국 정부는 해양수산부 부활을 계기로 바다를 미래 성장과 번영의 핵심동력으로 가꾸어 나가고자 합니다. 이를 위해, 해양수산 분야에서 정보통신(ICT), 생명공학(BT), 환경(ET) 등 신기술을 융·복합한 첨단산업을 육성함으로써 해양과학기술(MT)을 기반으로 한 신 산업을 창출해 나갈 것입니다.

아울러, 전통 수산산업의 미래산업화 구현을 위해 신개념 양식생산시스템을 개발하고, 복합형 생산단지를 조성하며, 유통단계를 축소하고 총 생산량을 25% 증대하기 위한 수산업의 미래 산업화 또한 해양수산부 재출범의 중요한 목표이기도 합니다.

이러한 우리의 경험과 성과, 현재 진행 중인 노력은 바다를 통해 경제도약을 추진하는 남태평양 도서국과 동반 성장을 추진하는데도 큰 도움이 될 것이라 확신합니다.

내외 귀빈, 신사숙녀 여러분!

금번 한-남태평양 수산포럼은 수산자원국과 원양어업국이 상생 발전을 위한 지혜를 모으는 장이 될 것으로 믿으며, 동시에 대한민국과 남태평양 국가들이 새로운 협력의 틀을 모색하는 계기가 되기를 기대합니다.

다시 한 번 오늘 행사의 성공적인 개최를 위하여 노고를 아끼지 않으신 조직위원회와 발제자, 토론자, 한국해양수산개발원(KMI) 등의 모든 관계자 여러분께 깊은 감사와 격려의 말씀을 드립니다.

끝으로, 한-남태평양 수산포럼의 무궁한 발전과 참석하신 모든 분들의 건강과 행복을 기원하는 것으로 기념사에 갈음하고자 합니다.

감사합니다.

Welcoming Remarks

Jae Hak Son (Vice Minister of Oceans and Fisheries)

Good afternoon!

Honorable Mr. Joeli Veitayaki, co-chairman of KOSOPFF, Honorable Mr. Sung Gwi Kim, President of KMI, Honorable Mr. Bill Veri, Ambassador of Papua New Guinea to Korea, Distinguished speakers and guests, and ladies and gentlemen, Honorable Mr. Filimone Kau

The Korea-South Pacific Fisheries Forum (KOSOPFF) was inaugurated in September, 2011 with the aim of promoting fisheries cooperation between Korea and South Pacific island nations. The first KOSOPFF symposium was convened in Seoul under the theme of "**Exploring Ways to Improve Cooperation in the Fisheries Industry between Korea and the South Pacific island nations**".

Last year, the symposium was held in Fiji to score a great success under the theme of "**Biodiversity Conservation in Fishing Resources Management in the South Pacific Ocean**".

And this year, we have gathered here in Seoul once again to discuss "**the Governance and Conservation Measures for the Responsible Fisheries in the South Pacific Ocean**".

As you may know, fishing resource-rich nations and distant waters fisheries countries have worked together to invite world-class experts and renowned scholars for in-depth discussions. In this regard, I believe KOSOPFF is a desirable and significant platform.

In particular, given that the South Pacific Ocean is home to 90% of Korea's tuna caught

in distant waters, Korea has a great stake in the governance and conservation measures for the responsible fisheries in the Ocean. This fact makes the forum even more valuable.

Distinguished guests, and ladies and gentlemen,

As you are fully aware, the Republic of Korea has recovered from the ashes of the Korean War in the 1950s and achieved economic development such a short time. During the period, my country has been equipped with world-top infrastructure of maritime industries including shipbuilding, shipping, port construction & operation, fisheries & aquaculture, and distant waters fisheries industry.

As a result, Korea is now the world's number one shipbuilding and the world's number 5 shipping country. Moreover, the country also records the 13th largest fishery production in the world.

In the meantime, the year 2013 has a significant meaning to the history of Korea's maritime and fisheries development. Thanks to the combined efforts of all the stakeholders, the Ministry of Oceans and Fisheries(MOF) was reborn in 5 years as a governing body of maritime and fisheries affairs.

With its reestablishment, the Korean government will take this chance to develop our oceans as a major engine of future growth and prosperity. To this end, we will develop state-of-the-art industries based on Marine Technology by converging maritime and fisheries sectors with ICT, BT, ET and other new technologies.

* ICT: Information & Communication Technology / BT: Biotechnology / ET: Environment Technology

In addition, the rebirth of MOF has another critical objective, which is to turn traditional fisheries industry into future-oriented one. To fulfill this goal, the government will develop innovative production systems for aquaculture, create hybrid production complex* and cut distribution stages to increase total production output.

I am strongly confident that such experience, achievement and ongoing endeavors will make great contributions to pursuing shared growth with South Pacific Island countries whose economies aim to take a leap through the oceans.

Distinguished guests, and ladies and gentlemen,

I consider this year's forum will be a venue to collect wisdom for win-win development between fishing resource-rich nations and distant waters fishing nations. At the same time, I expect this event to be an opportunity to explore new framework of cooperation between Korea and South Pacific nations.

Once again, let me express my deep gratitude and encouragement to the organizing committee, speakers, discussants, members of KMI and all the stakeholders for their tireless efforts for making this event a great success.

Lastly, I wish KOSOPFF everlasting development and all the participants health and happiness.

Thank you very much.

* i.e. islands for aquaculture

Congratulatory Speech

H.E. Bill Veri (Ambassador of Papua New Guinea)

<Speech on Day>

Keynote Session

KOSOPFF Report "Roles and Responsibilities of KOSOPFF in the South Pacific Region"

Joeli Veitayaki (Co-Chair, KOSOPFF)

Keynote Speech "Governance and Monitoring System for Ecosystem Based Fisheries Management"

Premachandra Wattage (Professor, Univ. of Portsmouth)

Roles and Responsibilities of KOSOPFF in the South Pacific Region:
the consultative process to foster Korea-South Pacific partnerships

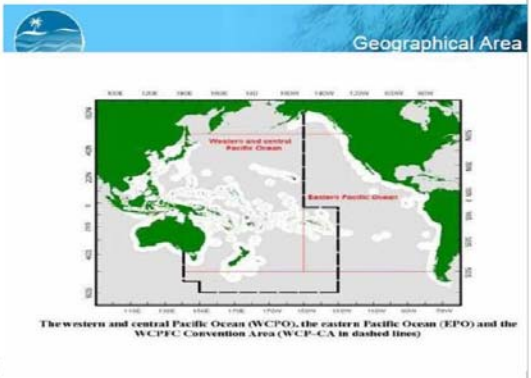
Joeli Veitayaki (Co-Chair, KOSOPFF)



WSSD Commitment from PSIDS

USP THE UNIVERSITY OF THE SOUTH PACIFIC

- Vision – 'achieving measurable sustainable development in the Pacific region and improving the quality of life for all'
- Objectives
  - secure and strengthen political support from international community for SD programmes and initiatives
  - promote new and existing partnerships beneficial to SD
  - secure and mobilise resources to build capacity for SD
  - present and future wellbeing depend on ocean



KOSOPFF Background

USP THE UNIVERSITY OF THE SOUTH PACIFIC

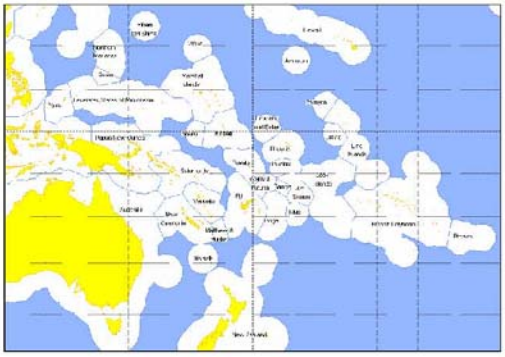
- Korea-South Pacific Fisheries Forum formed in 2011
- Collaboration with FFA, PNA, SPC, USP and the national governments
- Host a popular annual international symposium on fisheries cooperation between Korea and South Pacific Islands
- Foster Korea South Pacific collaboration and partnerships
- Hosted two symposiums, a group tour to Yeosu Expo, USP students student forum and fund a research paper on an assessment of the tuna fisheries in Fiji



Pacific Islands Regional Ocean Policy

USP THE UNIVERSITY OF THE SOUTH PACIFIC

- Vision - 'healthy ocean that sustains the livelihood and aspirations of Pacific Island communities'
- Goal - 'ensure future sustainable use of ocean and its resources'



Pacific Islands Regional Ocean Policy

USP THE UNIVERSITY OF THE SOUTH PACIFIC

Principle 1 - improving understanding of the ocean

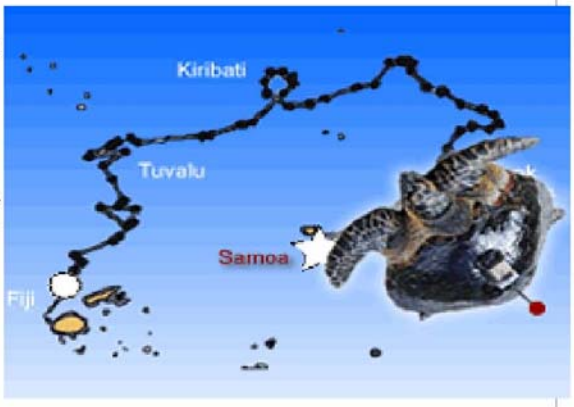
Principle 2 - sustainably developing and managing the use of ocean resources

Principle 3 - maintaining health of ocean

Principle 4 - promoting peaceful use of the sea

Principle 5 - improving ocean governance

Principle 6 - creating partnerships and cooperation



Pacific Plan

USP THE UNIVERSITY OF THE SOUTH PACIFIC

- Vision 'of a region of peace, harmony, security and economic prosperity'
- Goal enhance and stimulate economic growth, sustainable development, good governance and security for Pacific countries through regionalism
  - value cultural diversity
  - quality governance
  - sustainable use of resources
  - observance of democratic values
  - defense and promotion of human rights
  - partnerships sustained economic existence



Objectives

USP THE UNIVERSITY OF THE SOUTH PACIFIC

- Economic Growth
  - Increased sustainable trade and investment
  - Efficient infrastructure development and service delivery
  - Increased private sector participation and contribution
- Sustainable Development
  - Reduced poverty
  - Improved health
  - Improved education and training
  - Improved gender equality
  - Enhanced youth involvement
  - Increased participation in sports
  - Protected cultural values, identities and TK

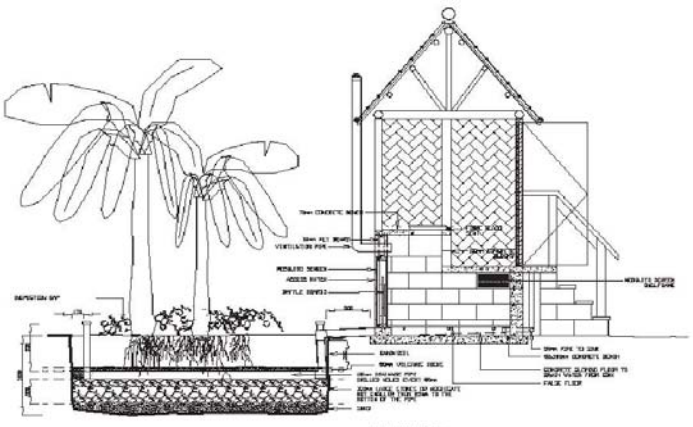


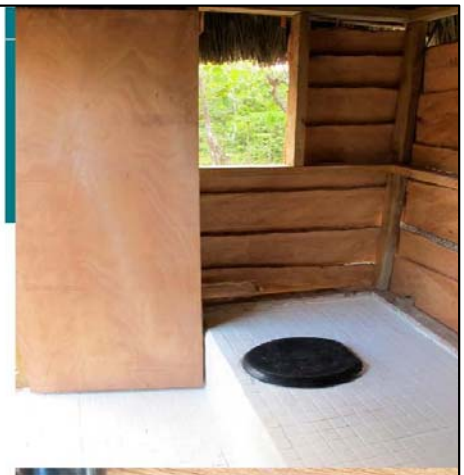
Objectives

USP
THE UNIVERSITY OF THE SOUTH PACIFIC

- Good Governance
  - Improved transparency, accountability, equity and efficiency in the management and use of resources
- Security
  - Improved political and social conditions for stability and safety











Pacific Oceanscape

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Strategic Priorities

–Jurisdictional Rights and Responsibilities

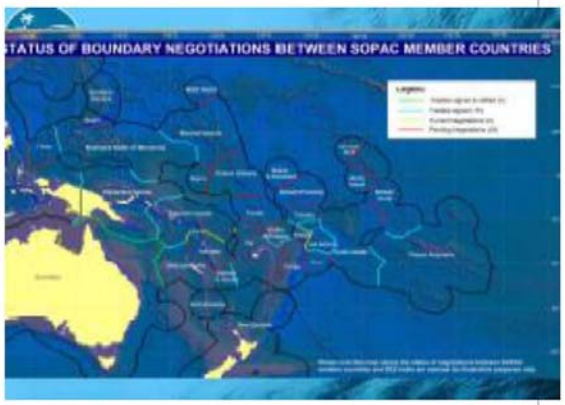
–Good Ocean Governance

–Sustainable development, management and conservation

–Listening, learning, liaising and leading

–Sustaining action

–Adapting to rapidly changing environment

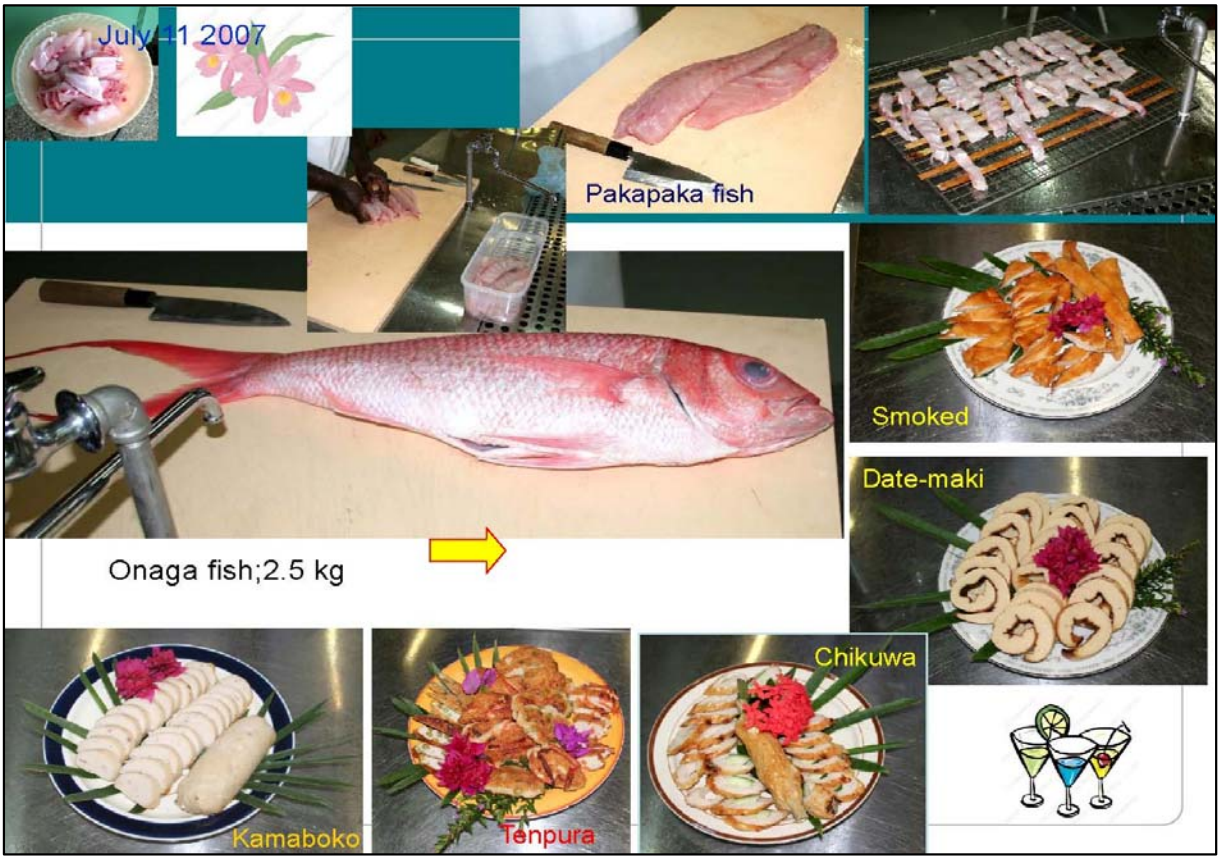


Issues to be addressed

USP THE UNIVERSITY OF THE SOUTH PACIFIC

- Accurately determine, negotiate and mark maritime zones
- Deter and minimise IUU
- Commit to tuna management obligations
- Improve processing to attract higher prices
- Enhance intra-regional trade
- Targeted capacity building
- Declare protected areas, reserves, sanctuaries in archipelagic waters and special areas – seamounts and reefs
- Promote mariculture; enhancement; restocking
- Form strategic partnerships with industry and institutions




July 11 2007
Pakapaka fish
Smoked
Date-maki
Onaga fish;2.5 kg
Chikuwa
Kamaboko
Tenpura



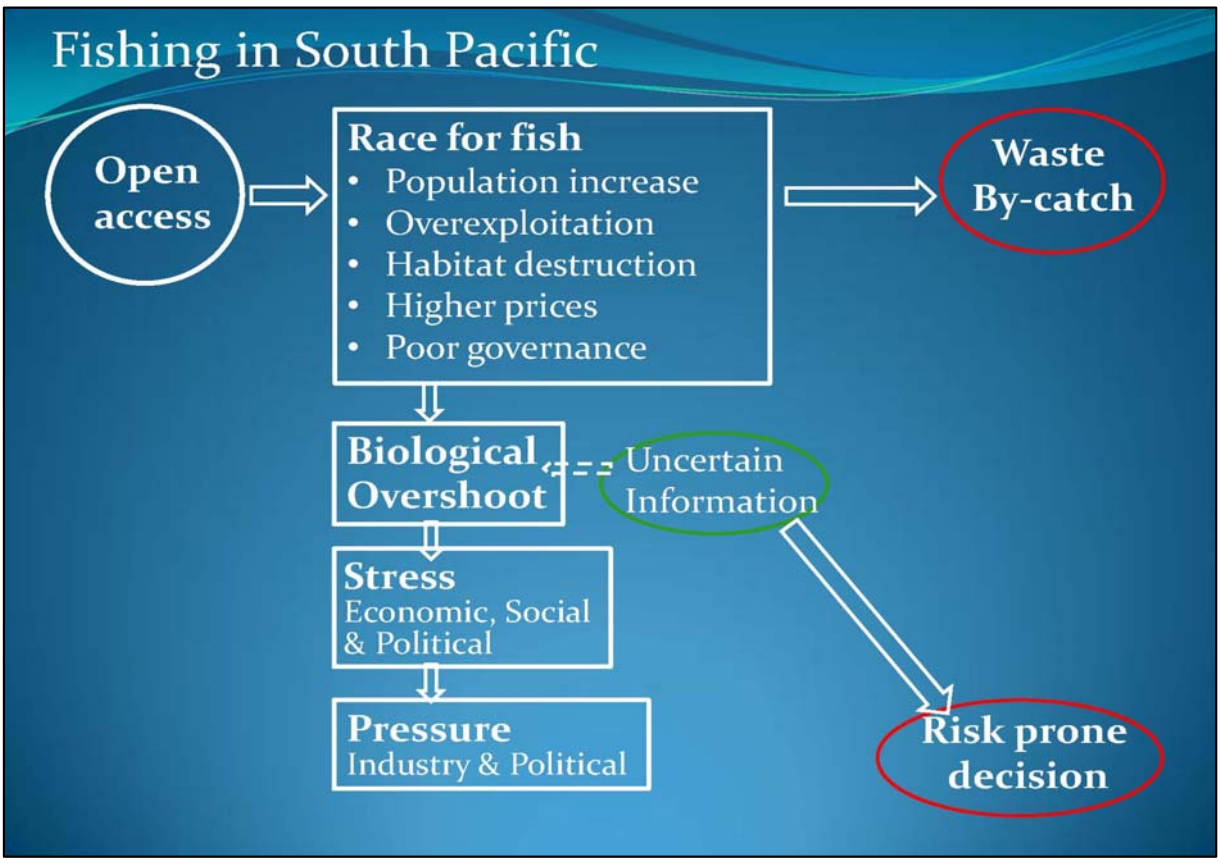
Governance and Monitoring System for Ecosystem Based Fisheries Management

Premachandra Wattage (Professor, Univ. of Portsmouth)



Outline of the presentation

- Fishing in South Pacific
- What is EBFM? The definition.
- Conditions for implementation of EBFM.
- Scientific and governance challenges.
- Experience of monitoring ecosystem approaches (EU).
- Relevance of EBFM in South Pacific.
- Conclusions.



Why do we have these problems?

- **Marine fisheries** are one of the **remaining examples** of **human endeavour** involving the **direct exploitation** of wild animal populations.
- Fisheries are **dependent** on the productivity of the ecosystem.
- Fisheries have an **effect** on, and are **affected** by, the supporting ecosystem of the target species.
- It, therefore, follows that **prudent** and **responsible** fisheries management should take account of the **profound** interactions between **fisheries** and their **supporting ecosystem**.
- In this context **governance & monitoring** system plays a vital role.

Prem Wattage, CEMARE, UoP, UK 4

What is EBFM?

- The phrase '**Ecosystem Approach**' was first coined in the early **80s**, but found formal acceptance at the **Earth Summit** in Rio in **1992** where it became an **underpinning concept** of the Convention on Biological Diversity (**CBD**).
- Later it was described as: *'a **strategy** for the **integrated management** of land, water and living resources that promotes **conservation** and **sustainable use** in an **equitable** way.'*
- In the fisheries context, a variety of **interpretations** of the ecosystem-based approach have been developed.

Prem Wattage, CEMARE, UoP, UK 5

What is EBFM?

- For example, the FAO Fisheries Atlas, in its section on '***Basic Principles of Ecosystem Management***', states:

  "The **overarching principles** of EBFM.....*aim to ensure that, despite variability, uncertainty and likely natural changes in the ecosystem, the* ***capacity*** *of the aquatic ecosystems to* ***produce*** *food, revenues, employment and, more generally, other essential services and* ***livelihood****, is* ***maintained*** *indefinitely for the* ***benefit*** *of the* ***present*** *and* ***future generations*****.....***to cater both for* ***human*** *as well as* ***ecosystem*** *well-being".*
- This implies ***conservation*** of ecosystem **structures**, **processes** and interactions through **sustainable use**.
- This implies consideration of a *range of frequently* ***conflicting objectives*** and *the needed consensus may not be achievable* ***without equitable distribution*** *of benefits.*

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The definition

- It is useful in demonstrating that EBFM is **not** about **managing** or **manipulating** ecosystem **processes**, something that is clearly beyond our abilities.
- Rather, EBFM is concerned with ensuring that fishery **management decisions** do not **adversely affect** the ecosystem **function** and **productivity**, so that **harvesting of target stocks** (and resultant economic benefits) is sustainable in the long-term.
- **Traditional** systems of management, which
  - have tended to **focus** on **individual** stocks or species,
  - **have not achieved** this objective and consequently the economic activity that the **ecosystem supports** has become compromised.

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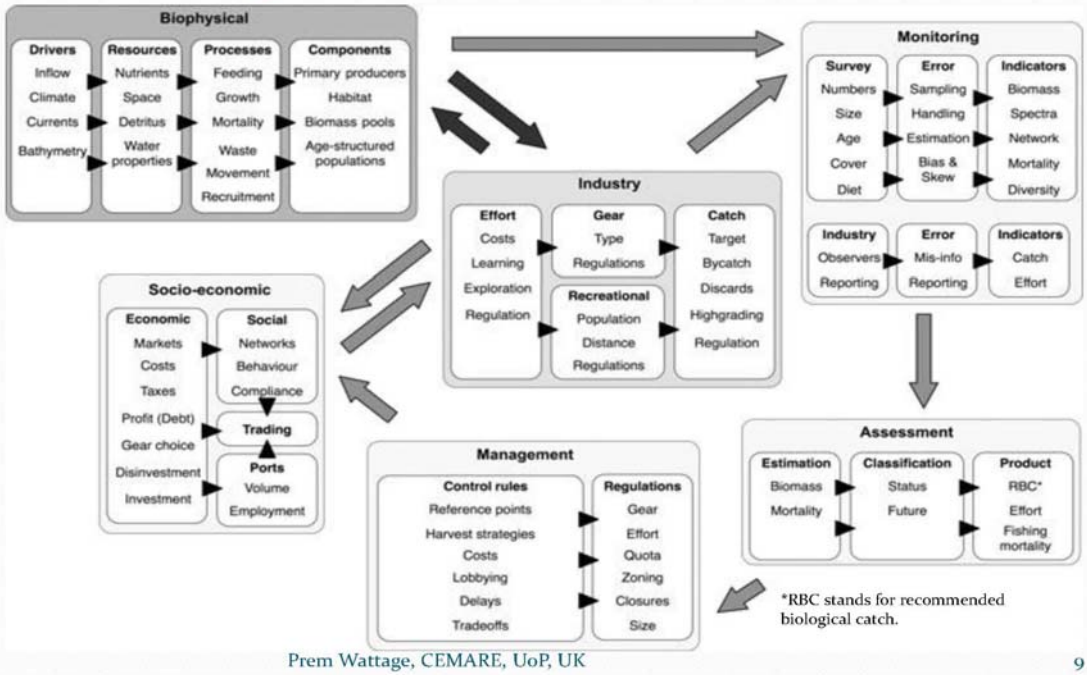
Conditions for implementation of EBFM are:

- more **holistic** than single-species approaches by specifically considering **indirect effects** on **habitats** and **food webs**,
- **protecting** species that are incidentally **captured** and **killed** during fishing operations,
- acting to maintain **valued ecosystem** goods and services, and
- identifying potential **conflicting** management objectives and **explicitly** considering **tradeoffs** among them.

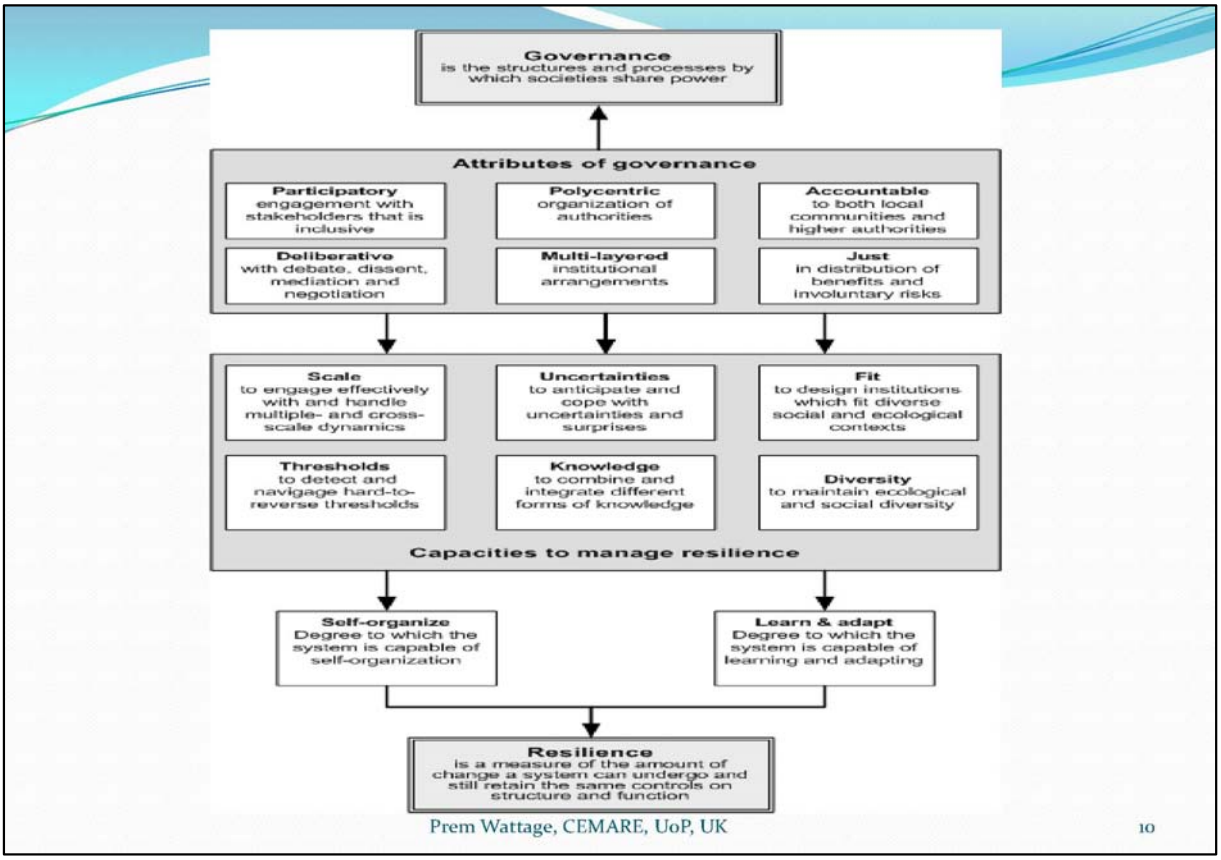
Thus, the **scope** of EBFM encompasses **natural** and **social** systems and **ideally** considers coupling between **the two.**

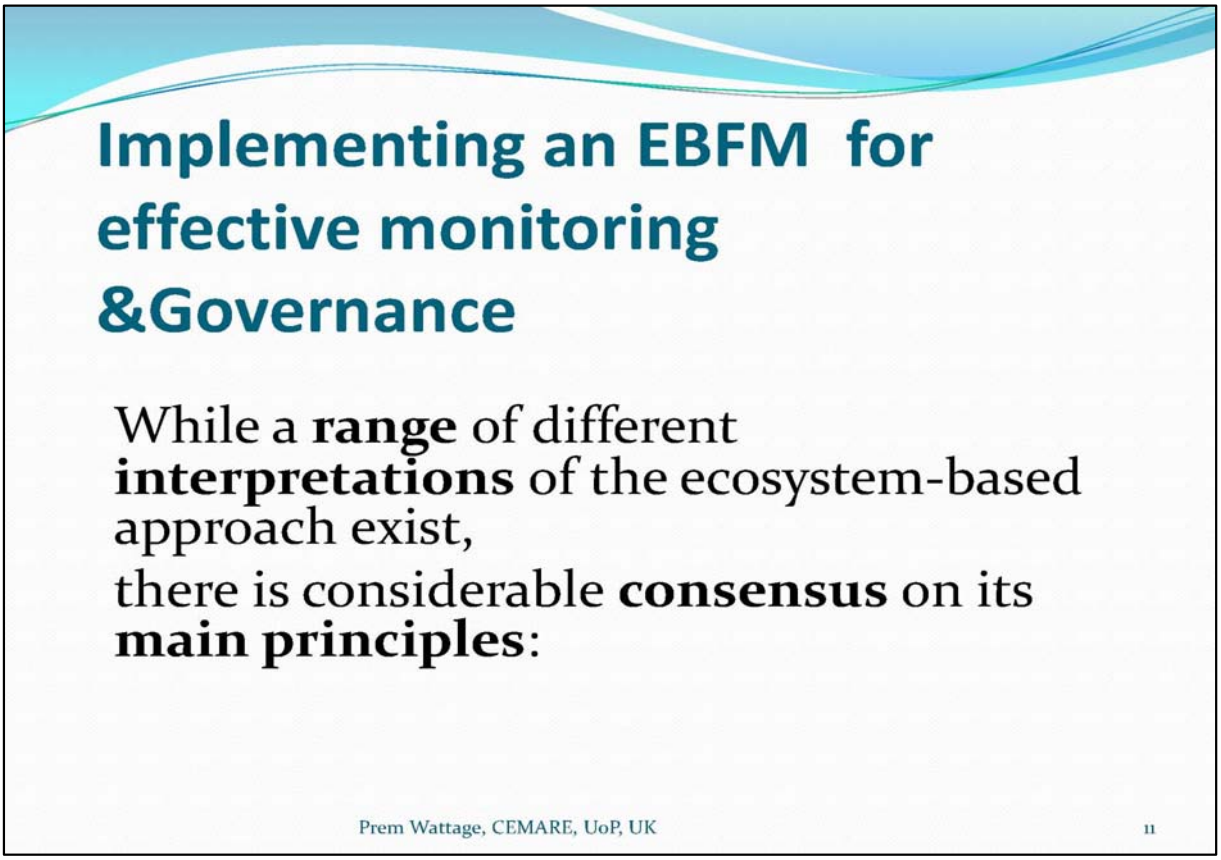
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Schematic diagram of the connections, components and major processes included in the Atlantis modelling framework.



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Governance
is the structures and processes by which societies share power
Attributes of governance
Participatory
engagement with stakeholders that is inclusive
Polycentric
organization of authorities
Accountable
to both local communities and higher authorities
Deliberative
with debate, dissent, mediation and negotiation
Multi-layered
institutional arrangements
Just
in distribution of benefits and involuntary risks
Scale
to engage effectively with and handle multiple- and cross-scale dynamics
Uncertainties
to anticipate and cope with uncertainties and surprises
Fit
to design institutions which fit diverse social and ecological contexts
Thresholds
to detect and navigage hard-to-reverse thresholds
Knowledge
to combine and integrate different forms of knowledge
Diversity
to maintain ecological and social diversity
Capacities to manage resilience
Self-organize
Degree to which the system is capable of self-organization
Learn & adapt
Degree to which the system is capable of learning and adapting
Resilience
is a measure of the amount of change a system can undergo and still retain the same controls on structure and function
Prem Wattage, CEMARE, UoP, UK
10


Implementing an EBFM for effective monitoring &Governance
While a range of different interpretations of the ecosystem-based approach exist,
there is considerable consensus on its main principles:
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11

Ecosystem identification

- Ecosystems appropriate for **fisheries** management will have to be defined on the basis of the main **physical, biological**, and **human-dependency relationships**. In European (or elsewhere) waters, it is likely to be appropriate to **identify** a **nested series** of ecosystems; at **regional**, **national** and **district** scales.
- Objectives for fisheries management should have regard to local and national needs, and management should be **decentralised** to the maximum extent possible
- A **nested structure** for fisheries management could include:
  - fairly large-scale Regional Seas (e.g. the North Sea), for which **integrated management plans** would be developed by Regional Advisory Councils (RACs) and
  - serve as the basis for **centralised** decision-taking. **Over time**, the responsibility of RACs could develop to take on more of the decision-making role.
  - these large regions could be **subdivided** nationally, and locally, where the local districts could serve as the basis for **devolved** management of **inshore waters**.

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Ecosystems should be managed for their long-term benefits

- Management should be directed towards **restoring fish stocks** to levels capable of delivering **optimal** yields over the long-term without compromising other species or habitats.
- It should also aim to **support** the **maintenance** of **ecological processes**, and the other **products** and **benefits**, including **biodiversity**, provided by the ecosystem.

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Incentives should be realigned to support the aims of the ecosystem based approach

- There needs to be a **re-direction** of **incentives** and **financial support** mechanisms from those aimed at increasing fishing **efficiency** to ones which **promote** the **restoration of fish stocks** to **optimal levels** of yield, and
- This should support **responsible** fishing practices in **sensitive** marine areas, e.g. **reducing** the by-catch of target and non-target species.

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Information necessary to implement the ecosystem-based approach should be made available

- Managing ecosystems effectively, requires **knowing** how they **function**, and on being **able** to predict with some **reliability**, their productive **capacity** and the consequences of management actions (bio-economic models).
- **Programmes of data collection** will need to be **continued, developed** and **refined** to provide this information.
- The **resultant information** should be made readily accessible to fisheries managers and other users of the sea.

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*Where information is insufficient '**adaptive management and precautionary**' approaches should be followed*

- Notwithstanding the need to develop a strong information base, for the **foreseeable future management decisions** will have to be taken on the basis of partial information.
- **Adaptive management** is a process whereby the best decisions are made on the information available, where the **outcome** of these decisions is **monitored**, and where management decisions are **altered** if the **outcome** falls short of what was intended.
- If there is a reasonable likelihood that an activity will **cause harm** to fish stocks or the marine environment, the **Precautionary Principle** should be applied and measures taken to **exert** effective control over that activity.

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Management & governance challenges in SP.

- Offshore fisheries
  - Regional cooperation among other SP island countries
  - Positive outcomes and effective control over the use of resource
  - To achieve a high degree of corporation with the private sector
- Coastal fisheries
  - More emphasis be placed on preserving existing benefits relating to food security
- Aquaculture
  - Require a shift in emphasis of government interventions
  - Formulate and implementing policies and procedures to reduce risks and safeguard biodiversity.

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An ecosystem approach to fisheries in EU

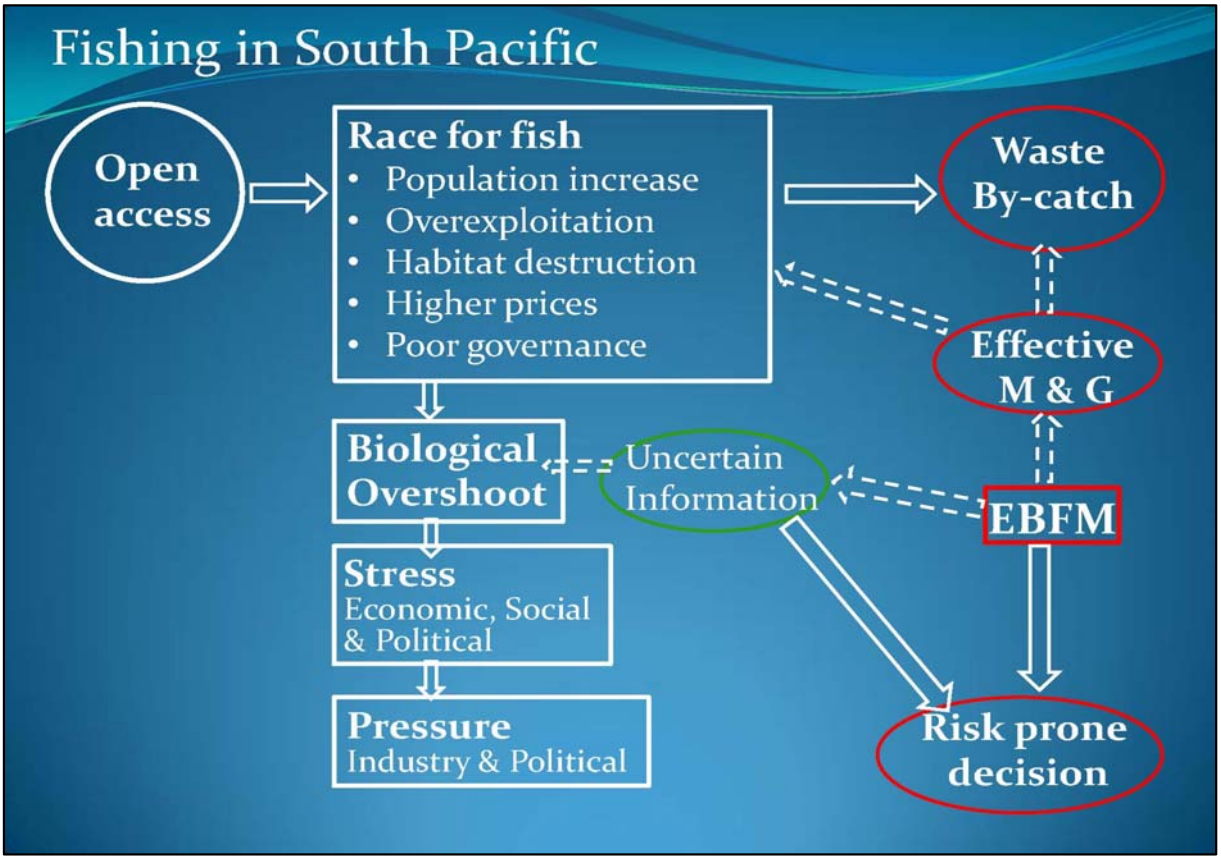
- European countries are committed to adopting an ecosystem approach in fishery. These commitments are expected to influence the reform of the Common Fisheries Policy (CFP) and thus progress towards implementing an EBFM.
- Major **impediments** to adopting an EBFM in the current CFP are:
  - the low **specificity** and **incompatibility** of environmental, social and economic objectives,
  - no **agreed guidance** on the priority to be given to objectives when trade-offs have to be made,
  - a decision-making system that is strongly influenced by **short-term national interests**, and
  - low societal and political will to pay the high short-term costs of making the **transition** to **sustainability**. Notwithstanding, a high-level policy framework to support the ecosystem approach and EBFM, along with many of the tools needed to support an operational system, is now emerging.

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An ecosystem approach to fisheries in EU

- The rate of progress towards an **operational** EBFM following CFP reform will be influenced by
  - the requirement for a reformed management system to help achieve **good environmental status** for ecosystem **components** and **attributes**, in support of European policy for the marine environment (principally the Marine Strategy Framework Directive).
  - However,
    - the willingness and capacity of member states to **meet high short-term transition costs**,
    - the extent of their **support** for transferring tactical decision-making to regional bodies and
    - their views on **acceptable transition rates** are likely to have more influence on progress towards meeting the objectives of an EBFM.

Prem Wattage, CEMARE, UoP, UK 19



Conclusions

- A fully **comprehensive** ecosystem-based approach would require us to take account of all
  - the **interactions the target fish stock** has with predators, competitors and prey species;
  - the **effects** of **weather** and **climate**; the **interactions** between **fish** and **habitat**;
  - the **effects** of **fishing** on **species** and **habitat**; and so on.
- Clearly, such **complete understanding** of ecosystems is unlikely to be achieved, and there is a need for **pragmatism**.
- We should be clear that ecosystem-based management is **not** an **instant replacement** for traditional fisheries management - rather it should be seen as an **evolution** of the existing systems.
- Therefore, progress towards the goal is likely to be made in an **incremental** way rather than overnight.

Prem Wattage, CEMARE, UoP, UK 21

Conclusions

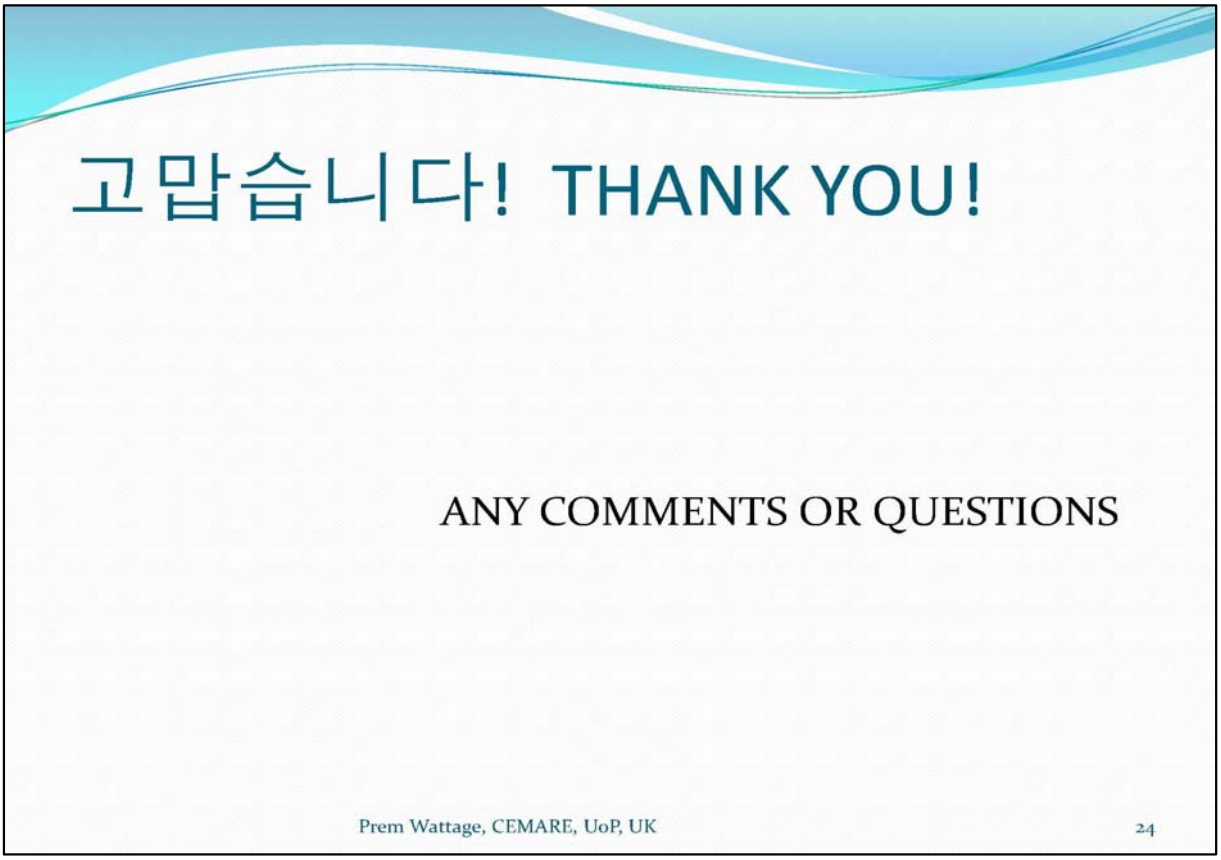
- It is possible to identify the **steps** towards, and desirable **characteristics** of, ecosystem-based fisheries management, including:
  - the **identification** of the relevant ecosystems, and their **boundaries** and **characteristics**;
  - the **agreement** of management objectives for each ecosystem. These should **encompass** wider **ecosystem factors** and **not** just the target stock, and **all stakeholder groups** should be **involved** in their development;
  - **long-term** management **objectives** should be developed as well as short to medium-term objectives;
  - the establishment of **sustainability indicators** (including reference points, targets and limits) and the accompanying monitoring;

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Conclusions

- It is possible..(Cont):
  - a **decentralised regional approach** to fisheries management in waters should be **adopted** enabling management **measures** to be taken that are appropriate to biologically distinct areas. These could include **technical measures**, **spatial management** (including closed areas), **effort-related controls** and systems of **access rights**;
  - their should be better **tailoring of research and information** provision to support the ecosystem approach, **including** better **knowledge of ecosystem interactions**, and of **fishing-related impacts**, and also improved **monitoring by-catch** and discards to include **information** of non-commercial by-catch;
  - application of **Adaptive Management** and the **Precautionary** Principle **given** the degree of **uncertainty** and **dynamics** of the ecosystem;
  - an effective **enforcement** capability.
  - Furthermore, fisheries management should **not be seen** in isolation from the **wider** management of the marine environment. Over time, fisheries management will need to become much better **integrated with other sectors** of marine management.

Prem Wattage, CEMARE, UoP, UK 23


고맙습니다! THANK YOU!
ANY COMMENTS OR QUESTIONS
Prem Wattage, CEMARE, UoP, UK
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Presentation

Session 1

Governance and Conservation measures in the South Pacific

"Governance and Monitoring System in the South Pacific region"

Esaroma Ledua (Professor, USP, Fiji) & Hyun Pyo Hong (Director, KMI)

"MCS Response to IUU Fishing in the Pacific Region"

Peter Graham (Surveillance Officer, FFA)

"The Role of Korea for the Responsible Fisheries in the South Pacific Ocean Focus on International Observer Program"

Seok Gwan Choi (NFRDI, Korea)

Governance and Monitoring System in the South Pacific region

Esaroma Ledua (Professor, USP, Fiji) & Hyun Pyo Hong (Director, KMI)

Abstract

Fishery governance in the South Pacific region is complex and has international, regional, sub-regional and national dimensions. At regional level, the Pacific leaders meeting in Tonga in 1999 endorsed the implementation of the United Nations Convention on the Law of the Sea (UNCLOS). The benefits and relevance of UNCLOS of 10th December 1982 to Small Island Developing States (SIDS) in the region, relating to the governance of conservation and management of highly migratory and straddling fish stocks, is substantial. UNCLOS provide the legal platform allowing individual States in the region to effectively govern the utilization, research and conservation of living and non-living resources within their Exclusive Economic Zone (EEZ). It also allows States to cooperate and establish regional and sub-regional bodies with a view of ensuring the conservation and optimum utilization of highly migratory species throughout the whole migratory range.

The Pacific leaders meeting in Tonga in 1999 also adopted the recommendation that a regional ocean policy be developed. The draft ocean policy produced by the regional Marine Sector Working Group (MSWG) of the Council of Regional Organization of the Pacific (CROP) was subsequently endorsed by the 33rd Pacific Islands Forum in 2002. One of the themes of the regional ocean policy is to achieve responsible ocean governance. The five key guiding principles of the regional ocean policy includes: improving understanding of the ocean; sustainably developing and managing the use of marine resources; maintaining the health of the ocean; promoting the peaceful use of the ocean and creating partnerships and promoting cooperation. The regional ocean policy promotes regional cooperation, improved governance at national level and good stewardship in terms of active engagement by communities in caring for the oceans. Through regional cooperation, the Western Central Pacific Fisheries Commission (WCPFC) was established to govern the activities of stakeholders and to ensure the long-term conservation and sustainable use, in particular for human food consumption of highly migratory fish stocks in the western central Pacific Ocean for present and future generations.

Fishery governance in the region comprises institutional and legally binding rules such as State laws and policies, international treaties and conventions such as the 1982 Nauru Agreement concerning cooperation in the management of fisheries of common interest; 1989 Wellington Conventions prohibiting the use of drift net; 1992 Palau arrangement on the management of purse-seine fishery; 1992 Niue Treaty on cooperation in surveillance and law enforcement in the South Pacific region and the convention on the conservation and management of highly migratory fish in the Western Central Pacific Fisheries Commission (WCPFC) that was adopted in 2000. Fishery governance in the region strives to establish norms that ensure efficient competitiveness inside the sector and equitable access to resources. It is multi-scale, covering long-term strategic planning as well as short term operational management and local fisheries and whole ecosystem approach. More environmentally conscious, precautionary and participative forms of fishery governance are emerging from the UNCED process such as integrated approach towards the protection of oceans, rationale use and development of living resources and the protection of highly migratory and straddling stocks throughout the whole migratory range. There are three sub regional fishery governance bodies namely the Forum Fisheries Agency (FFA), Party to the Nauru Agreement (PNA) and Te Vaka Moana (TVM).

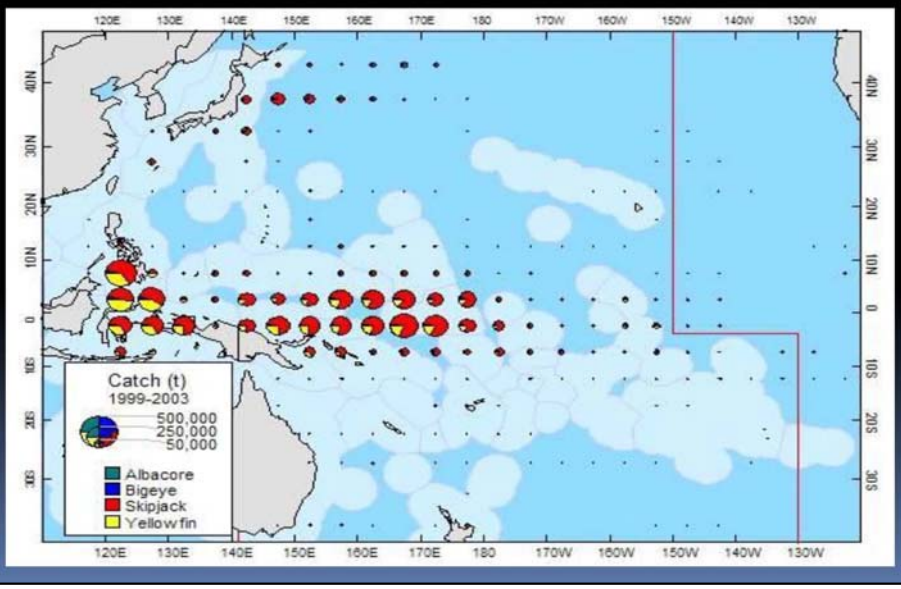
National laws play a pivotal role in the context of sub-regional, regional and international instruments (i.e., agreements, laws, or voluntary instruments). At national level, the conservation, management and development of fisheries resources within individual State Exclusive Economic Zones is controlled under national management framework such as the National Tuna Management Plan, Fisheries Act and Management Policies. The success of Regional treaties and agreements rely heavily on ratification by individual States. Regional treaties and arrangements have established a series of Minimum Terms and Conditions (MTCs) to enhance management monitoring systems and procedures, most notably, the Vessel Days Scheme (VDS) which establishes Total Allowable Effort and Party Allowable Effort to limit fishing effort to 2004 levels. However, implementation of national laws points to mixed results, with Total Allowable Effort exceeded by 18% in 2011 and archipelagic waters (PNG, Solomon Islands and Fiji) still exempted from the VDS. Monitoring, control and surveillance in the region is coordinated by FFA and surveillance technology such as VMS, MTU and ALC are installed on vessels to enhance compliance.

GOVERNANCE AND MONITORING SYSTEMS IN THE SOUTH PACIFIC

by Esaroma Ledua

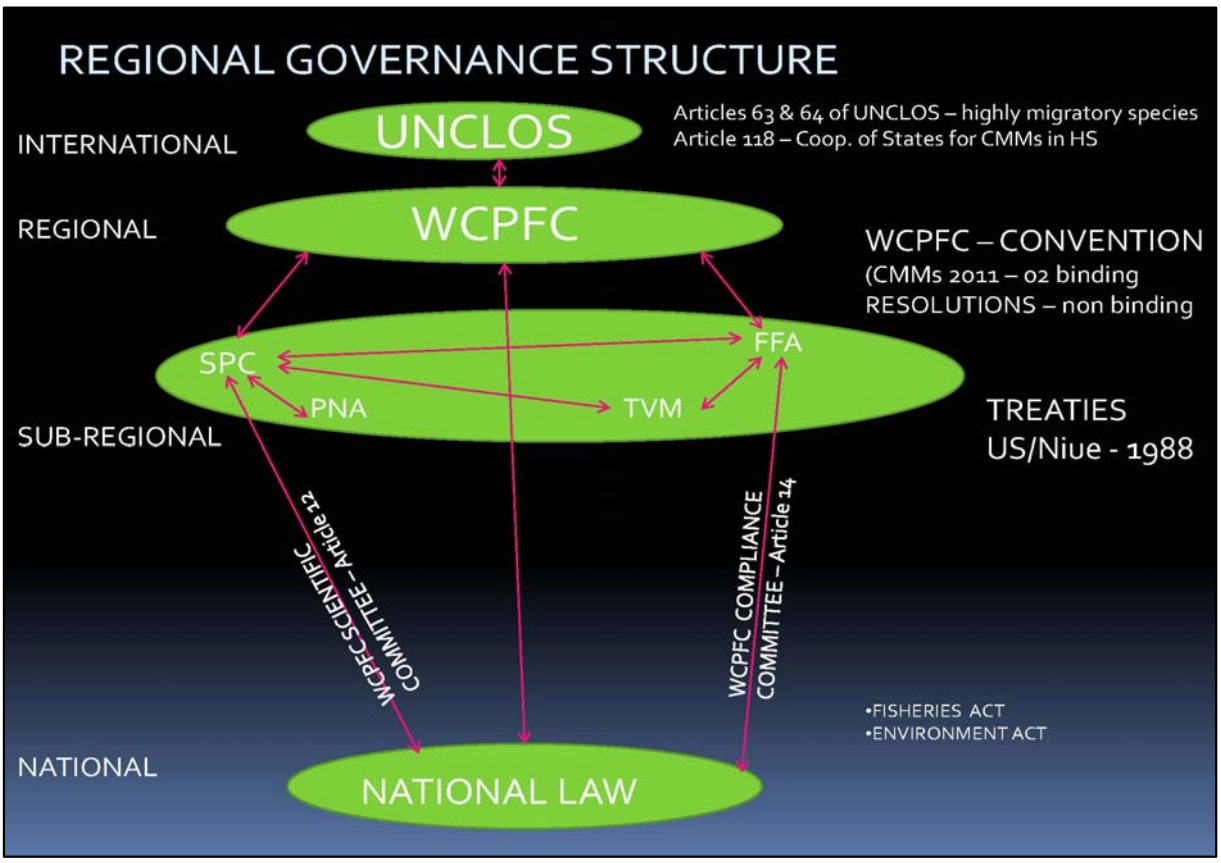
- Fishery Governance in the Pacific is multi-level
- Multi-dimensional
- Governance comprises the institutional and legal framework that must ensure that fisheries and aquaculture play the role that society considers adequate. (FAO, 1998).
- Governance must establish norms that ensure efficient competitiveness insider the sector and equitable access to resources.

EEZ Boundaries of Member States in the South Pacific -WCPFC Region



3.0 INFLUENCE OF INTERNATIONAL INSTRUMENTS ON REGIONAL GOVERNANCE

- International laws has created some differences in political authority claimed by State and actual practice at national, regional and global level
- UNCLOS 1982
- UNCED 1992, Agenda 21, Chapter 17
- FAO Code of Conduct for Responsible Fisheries (1995)
- UNFSA
- FAO Agreement – Promoting Compliance (1993)



5.0 Regional Ocean Policy - Themes

- Improve governance of the coasts and oceans
- Improve understanding of the ocean
- Sustainably developing and managing the use of ocean resources
- Maintaining the health of the ocean
- Promoting the peaceful use of the ocean
- Creating partnerships and promoting cooperation

6.0 REGIONAL INSTRUMENTS

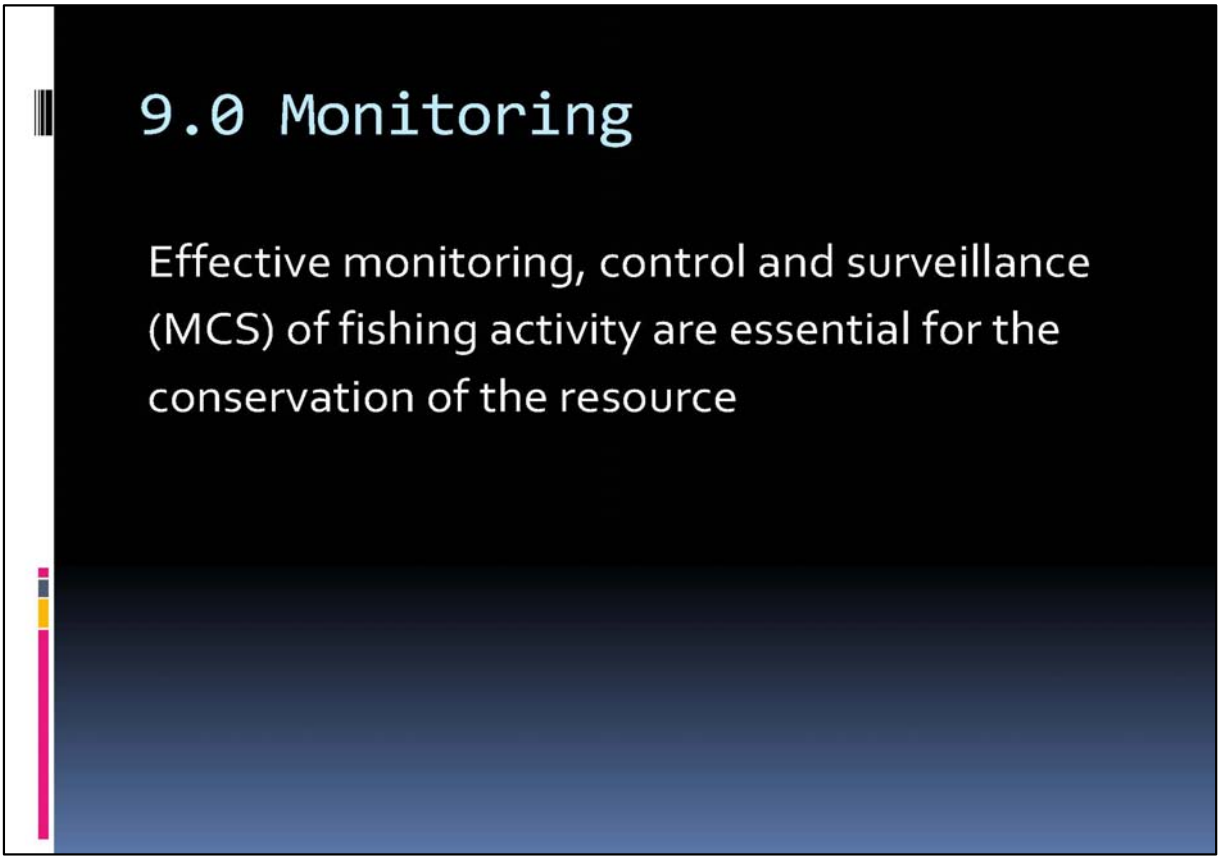
- 1982 Nauru Agreement - management of fisheries of common interest;
- 1989 Wellington Conventions prohibiting the use of drift net;
- 1992 Palau arrangement on the management of purse-seine fishery;
- 1992 Niue Treaty on cooperation in surveillance and law enforcement
- Convention on the conservation and management of highly migratory fish in the Western Central Pacific Fisheries Commission (WCPFC) that was adopted in 2000.

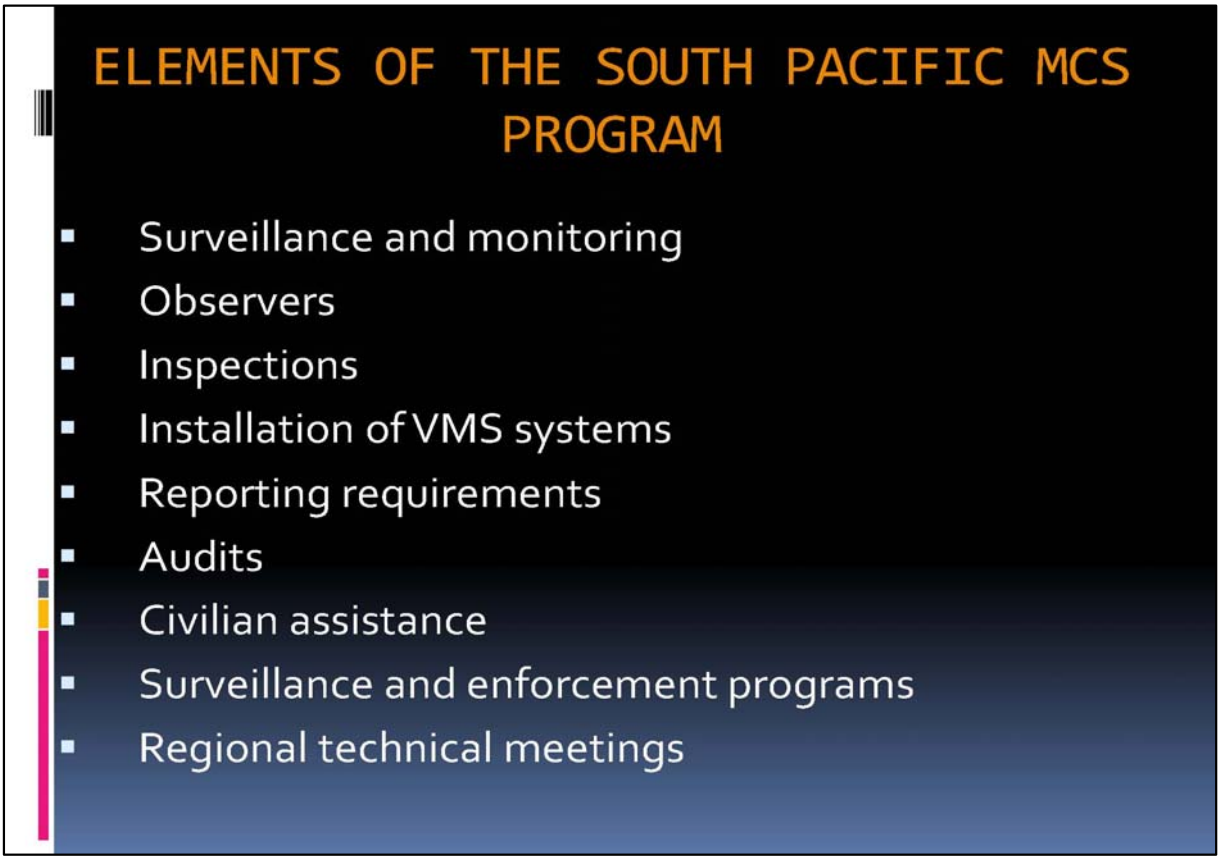
7.0 REGIONAL FISHERIES GOVERNANCE

- Embraces inter-disciplinary social, economic, environmental as well as legal and institutional elements that must be combined in an effective strategy for the management and protection of the marine resources of the South Pacific.

8.0 Governance –Regional Cooperation

- South Pacific - Many countries in a small space
- Many shared living marine resources
- Important oceanographic, ecological linkages
- Important for to social and economic well-being
- Important for political stability
- Critical for management of trans-boundary living marine resources


9.0 Monitoring
Effective monitoring, control and surveillance (MCS) of fishing activity are essential for the conservation of the resource


ELEMENTS OF THE SOUTH PACIFIC MCS PROGRAM
Surveillance and monitoring
Observers
Inspections
Installation of VMS systems
Reporting requirements
Audits
Civilian assistance
Surveillance and enforcement programs
Regional technical meetings

11.0 FORMS OF MCS COOPERATION

- Data exchange systems
- VMS systems
- Aerial surveillance
- Patrol boat operations by vessels, personnel from another country
- Regional Observer Programme
- Regionally agreed sanctions

12.0 Governance Challenges

- **1.0 Abuse of exemptions** given to fishing vessels - purse seiners is a problem that needs to be rectified.
- In February 2012, the International Seafood Sustainability Foundation (ISSF) - WCPFC to take a more aggressive approach in efforts to implement conservation management measures that protect tuna stocks and the region's greater marine environment.
- ISSF stated that the seasonal closures of the purse seine FAD fishery currently in place are insufficient to reduce the fishing mortality of big-eye tuna in the short term.

13.0 Challenges

- **2.0 Observer compliance**: WCPFC's observer program is not yet properly developed to ensure compliance (ISSF, 2012) ;
- Granting of exemptions to management measures allow FADs to be used in some areas even during the closure period.
- ISSF urges WCPFC members to put in place a total ban on the purse seine fishery and give high priority to the development of reference points and harvest control rules.
- ISSF statement - nations must also act to better regulate, monitor and report transshipments in EEZs and work towards reducing the number of fishing vessels to a level that is commensurate with the productivity of the fisheries.

Challenges

- **3.0 Abuse of Certification and Eco-labeling**.
- All purse seine vessels fishing in the PNA sub-region are MSC certified and are granted exemptions and allowed to use FADs in some areas even during the closure period.
- **4.0 Lack of quality data and high levels of uncertainties. T**he type of stock assessment tools used affects the effectiveness of the regional management regime.
- ISSF (2012) stated that the WCPFC's observer program is not yet properly developed to ensure compliance. If ISS assessment is accurate, it could be deduced that the quality of data collected by observers is questionable in terms of accuracy.

Challenges

- **5.0 Abuse of sovereign rights.** Overcapacity is another issue that continued to be brought up to the WCPFC Convention every year and difficult to manage because of sovereign rights exercised by member States.
- **6.0 Special recognition given to SIDS** under the Convention to develop tuna resources to support shore based processing facilities provide windows for abuse.

Challenges

- **The abuse of rights granted to coastal States to determine Total Allowable Catch in the absence of sound scientific data**. Since our scientists are not able to calculate national biomass and MSY, coastal States continue to set TAC that encourages more developments.
- **Weak governance and non-compliance.** Non compliance to specified catch quotas has negative impacts on the sustainable management of tuna in the region. ISSF (2012) stated that the WCPFC observer programme is not yet properly developed to ensure compliance.


17.0 Compatibility
Lack of compatibility of national and regional management objectives and measures
contribute to overcapacity and
overfishing.
Compatibility of national legislation to regional and international management objectives and measures relies entirely on coastal States.
When the objectives of individual States are different, the effectiveness of regional management arrangements is at risk.
Success of our regional living resource management arrangements heavily depended on the unification of objectives of member States and compatibility of international, regional, sub-regional and national policies.

MCS Response to IUU Fishing in the Pacific Region

Peter Graham (Surveillance Officer, FFA)

Abstract

As global overfishing and overcapacity continue to increase pressure on the region, FFA members have endeavored to strengthen institutional and governance capabilities to effectively implement all the MCS components that are necessary to protect, manage and benefit from their oceanic fisheries. Achieving these would mean enhanced coordinated whole-of-government approaches capable of working across various departments and regulatory areas due to the complicated and convoluted nature of many of the management challenges.

The achievement of FFA members' regional goals for their oceanic fisheries would depend heavily on the effective implementation by national governments of a comprehensive range of management and associated MCS measures, recognising the diversity of national and sub-regional circumstances and priorities.

Robust systems for the collection, processing, secure storage and exchange of information were seen as essential to an effective, integrated MCS regime and necessary to support fisheries management. The need to improve the coverage and quality of information to underpin future risk assessments and improve MCS implementation across the region was also seen as a priority. With this mind, and Pacific Islands Forum Leaders committing themselves and their governments "to the development ….of a comprehensive regional monitoring, control and surveillance strategy", such was the adoption of the Regional Monitoring Control and Surveillance Strategy (RMCSS) in May 2010. The RMCSS is expected to be responsive to the changing priorities of the countries and tuna fisheries as a whole. It acknowledges the diversity and range of MCS risks and responses as well as "interconnectivity" of actions and outcomes. It recognises that there are wider linkages than simply fisheries MCS with opportunities for national inter-agency and international cooperation with common thematic areas such as customs, defense, environment (e.g. – pollution), immigration and quarantine.

With the RMCSS in place, FFA has assisted its' members with enhancing the skills and knowledge through expert advice and capacity building training. FFA's Legal Unit has assisted with strengthening National legislation to enable and ensure that they meet current demands of the WCPFC and FFA regional and subregional Arrangements and Agreements, and regular review of FFA Regional Harmonised Minimum Terms and Conditions (HMTCs) for licensing of foreign fishing vessels. Since their introduction and adoption, the FFA Regional HMTCs have boosted regional fisheries cooperation amongst FFA Members' with all fishing vessels licensed by any of them, first needing to be in good standing on the FFA Register of Fishing Vessels thereby being monitored at all times by the FFA VMS, and that that non-compliant behaviour by any of those licensed fishing vessel could result in 'blacklisting'/withdrawal of the 'Good Standing'. This inter-linked mechanism has enabled the effective adoption of region-wide Minimum Terms and Conditions of Access that are applicable to all foreign fishing in the region. Many FFA Members have also adopted such HMTCs for their domestic/local vessels too. Today, even though the WCPFC also has a

Register of Fishing Vessels, especially given that most WCPO fishing takes place in FFA Members' EEZs, it is the FFA Register of Fishing Vessels combined with the FFA VMS, that provides the most important regional sanction to control fishing vessels.
Further enhancing of skills is through FFA facilitated Dockside Boarding Inspection and Prosecutions Trainings; Fisheries Evidence and Investigation Course; Fisheries Licensing Officers Course; Basic and Advanced VMS Course; and hosting of regular MCS/VMS Fellowships at the FFA Secretariat Headquarters.

A new Multi-lateral NTSA was adopted in late 2012, and provides for closer cooperation amongst the FFA Members with increased opportunities for data sharing, and 'cross-vesting' of resources including surveillance platforms and personnel and allows for involvement of the RFSC in 'non-fisheries' related activities. This avenue of potential expansion into the realms of wider intelligence, smuggling, fraud and general law enforcement is presently being developed. Each FFA-led regional surveillance operation includes participation from the Pacific Trans-national Crime Network and throughout the year the RFSC engages with agencies such as national Police Forces, Search and Rescue authorities, Customs, Immigration and Quarantine agencies, etc. in order to support international cooperation towards combatting fisheries crime. The new multi-lateral NTSA also encourages further partnerships between law enforcement authorities of member countries, providing technical assistance, mutual assistance in training, exchange of MCS staff, exchange of equipment, joint operations, and cooperative enforcement across national borders.

Weaknesses in data management and MCS co-ordination were seen as obstacles to effective implementation of MCS obligations at the national level. Enhanced information sharing and analysis would improve MCS performance (e.g. by better targeting surveillance and response assets). The enhancement of information management systems, including the establishment of 'compliance analysis engines' at the national levels and a Regional Information Management Facility at the regional level has improved information management systems supported by improved analytical capability at both levels.

FFA development of the RIMF aims to have data only ever entered once; data is entered as close to the source of collection as possible; all data entered is complete and correct; data is regularly checked for quality; data is accessible at any place, at any time, on any type of device (to authorised users); data is as close to real time as possible; data should be rated by its timeliness and value, and then given priority according to this rating; only data that helps the organisation to deliver its core objectives is collected; the database is always independent from the user interface (one database, many ways to access it); security of information access is always a main priority; Member country requirements for data access and changes to the system should be accommodated as quickly as possible (being responsive to feedback); end users in member countries should be part of the development and testing procedure for any information system that is developed (giving users what they want); and Information available to authorized users when and where they need it.

The near future will see the roll-out of a web-based Information Management System which will allow the same level of scrutiny to be applied in each National Headquarters, using the same tools as are available in the RFSC and equipping the FFA Members to make decisions independent of the RFSC. FFA and SPC have been working with members to develop national Fisheries Information Management Systems (IMS) which integrate with SPC systems and the Regional Information Management Facility (RIMF) managed by FFA as envisioned in the Regional MCS Strategy. The system is being developed in a modular

fashion so that member countries can choose which applications are relevant to their information requirements and have their version of the system customised as required. The fisheries information management system will incorporate applications such as observer programme management (OPM), violations and prosecutions (VAP), the regional register of vessels, licensing, TUFMAN, TUFMAN-MCS, export certification (CDS), offloading, transhipment, VDS, VMS, and a regional fisheries information data warehouse. A truly integrated national IMS with SPC and FFA systems would requires all members, SPC and FFA to host on a common cloud based system.

Since late 2012, the Regional Surveillance Picture (RSP) has drawn on data feeds from three sources; the FFAs own Vessel Monitoring System (VMS), the Western and Central Pacific Fisheries Commission VMS and the Automatic Identification System (AIS). This Common Operating Picture is displayed over the Google Earth backdrop and being a web-based system enables the RSP to be broadcast to FFA members' national, and surveillance providers Headquarters, 365 days a year.

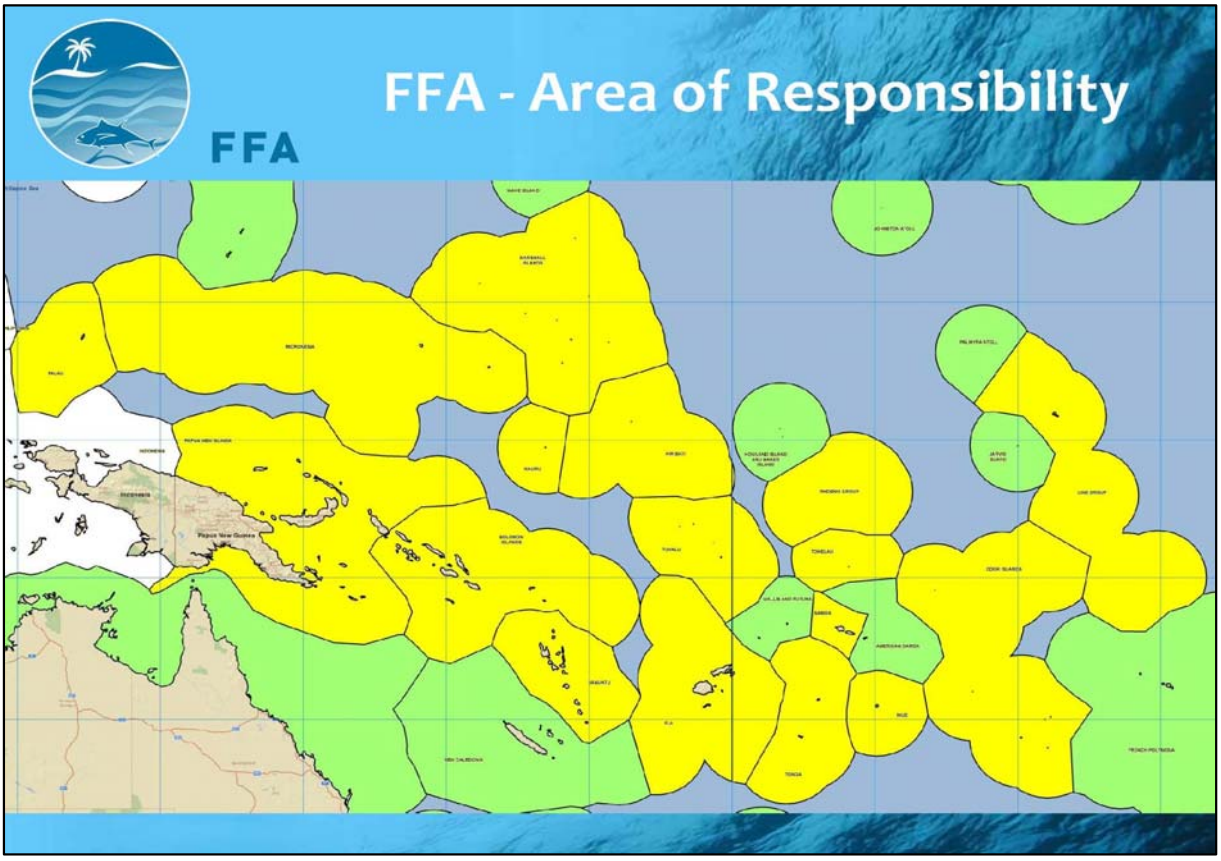
It is now seen as a major contributor to the RSP, allowing Members and the FFA's Regional Fisheries Surveillance Centre (RFSC), continuous access to WCPFC 100NM 'buffer' data (data extending 100NM from the EEZ boundary out into the adjacent high seas). In addition, it also allows the RFSC, and Members participating in specific regional MCS operations, access to all WCPFC data for the region declared as the Area of Operation.

VMSs and AIS provide good situational awareness and the utilisation of Google Earth as a display tool delivers a low cost means of providing the 'threat' picture tool to the FFA Members' National Headquarters. Continuous development of a growing suite of automated tools to aid MCS, such as transhipment and bunkering detection function, add to the RFSCs capability.

Presently the majority of analysis conducted on fisheries intelligence data in the RFSC is manual, using the perceived 'risk of conducting IUU' as a measure. Each vessel is analyzed assigned a Compliance Index (CI) rating which is reflected in a simplistic traffic-light scheme on the RSP, green being the lowest perceived risk vessels, amber (orange) showing those with a higher risk and red displayed for those either suspected of, or having been observed, conducting IUU fishing.


FFA
PACIFIC ISLANDS FORUM FISHERIES AGENCY
"MCS response to IUU fishing in the Pacific Region"


FFA
MCS - Scope
Area of Responsibility
Monitoring Control & Surveillance (MCS) Initiatives
Multilateral Niue Treaty Subsidiary Agreement (NTSA)
Regional Information Management Facility (RIMF)
Information Management System (IMS)
Regional Fisheries Surveillance Centre (RFSC)


FFA
FFA - Area of Responsibility


FFA
MCS Initiatives
• Implementation of the new multi-lateral Niue Treaty Subsidiary Agreement (NTSA)
• Facilitate institutional strengthening & capacity building within FFA Member countries
• Adoption of a fisheries Information Management System (IMS)
• Continued roll-out & development of the Regional Information Management Facility (RIMF)

FFA

MCS Initiatives continued…

- Advancements within the Regional Fisheries Surveillance Centre (RFSC)
- Adoption of new technologies (AIS, on-board video surveillance, e-logs and reporting, Delorme Inreach SE (2-way comms for Observers)

FFA

Capacity building

- Strengthening of FFA Members' legislation
- Dockside Boarding Inspection & Prosecutions
- Fisheries Evidence & Investigations
- Basic & Advanced VMS
- Fisheries Licensing Officers
- MCS/VMS Fellowship - Attachments


FFA
NTSA - Concepts
Overall concept: closer cooperation in:
exchange of fisheries law enforcement data and use of fisheries data for broader law enforcement purposes
cross-vesting of enforcement powers
Concepts to enable cooperation: The NTSA establishes two concepts to capture these forms of cooperation:
cooperative surveillance and enforcement operations
fisheries data and intelligence


FFA
NTSA – Administrative Roles
Administrative roles: To implement these concepts and support the cooperation between Parties, the NTSA creates two administrative roles:
National Authorities (nominated by each Party)
Administrator (the Forum Fisheries Agency (FFA))

NTSA - Methodology

FFA

- **Methods for providing authority and information:** Since there is a broad range of authority and information that needs to be provided under the NTSA, Parties must:
- provide the authority and information necessary for the conduct of cooperative surveillance and enforcement operations by depositing **notifications** with the Administrator (FFA), using the forms in Annex C
- provide the minimum standard of **fisheries data and intelligence** listed in Annex A on a routine basis

NTSA - Information

FFA

- **Storing and accessing information:** To store and make available the information and authority provided, the NTSA:
  - creates the **Niue Treaty Information System** to store and make available notifications
  - requires that fisheries data and intelligence be stored, managed and made available in the **Regional Information Management Facility (RIMF)** centred on the Regional Fisheries Surveillance Centre (RFSC)

NTSA - Cooperation

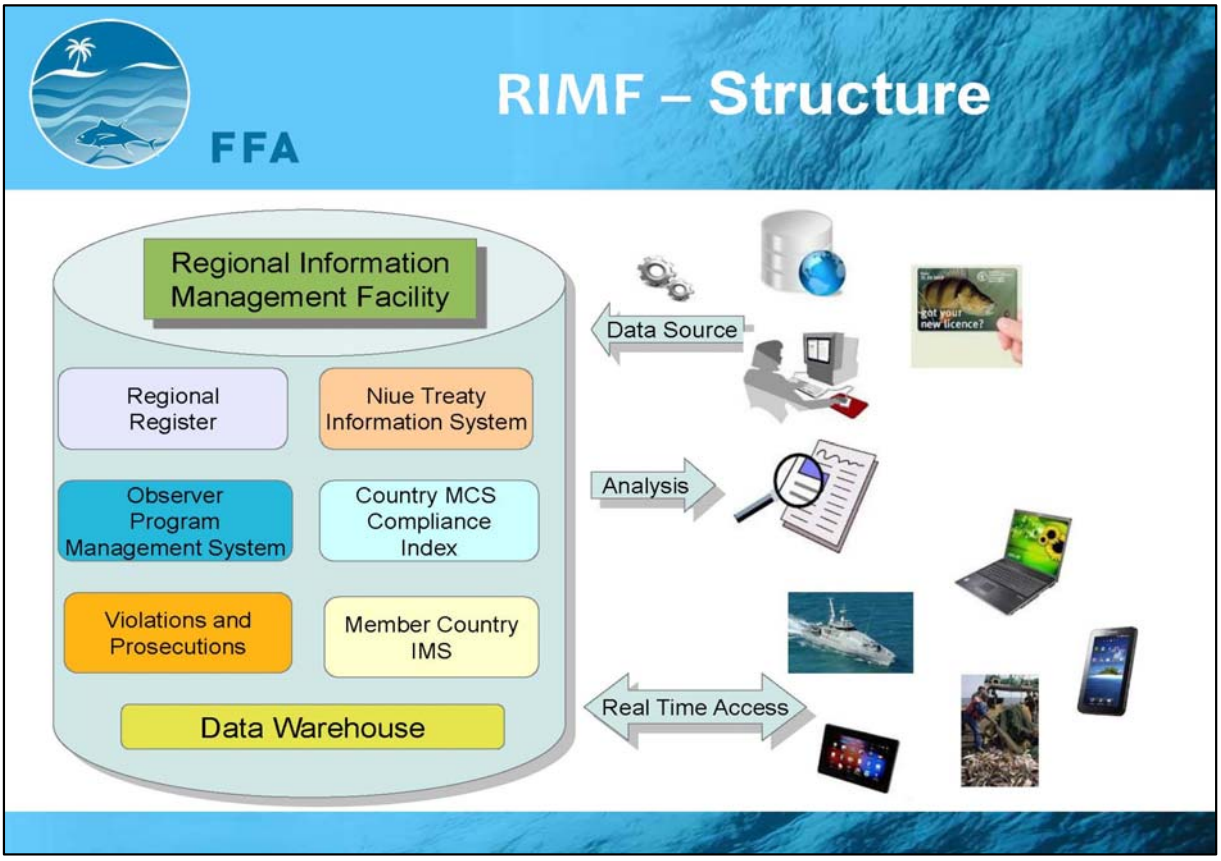
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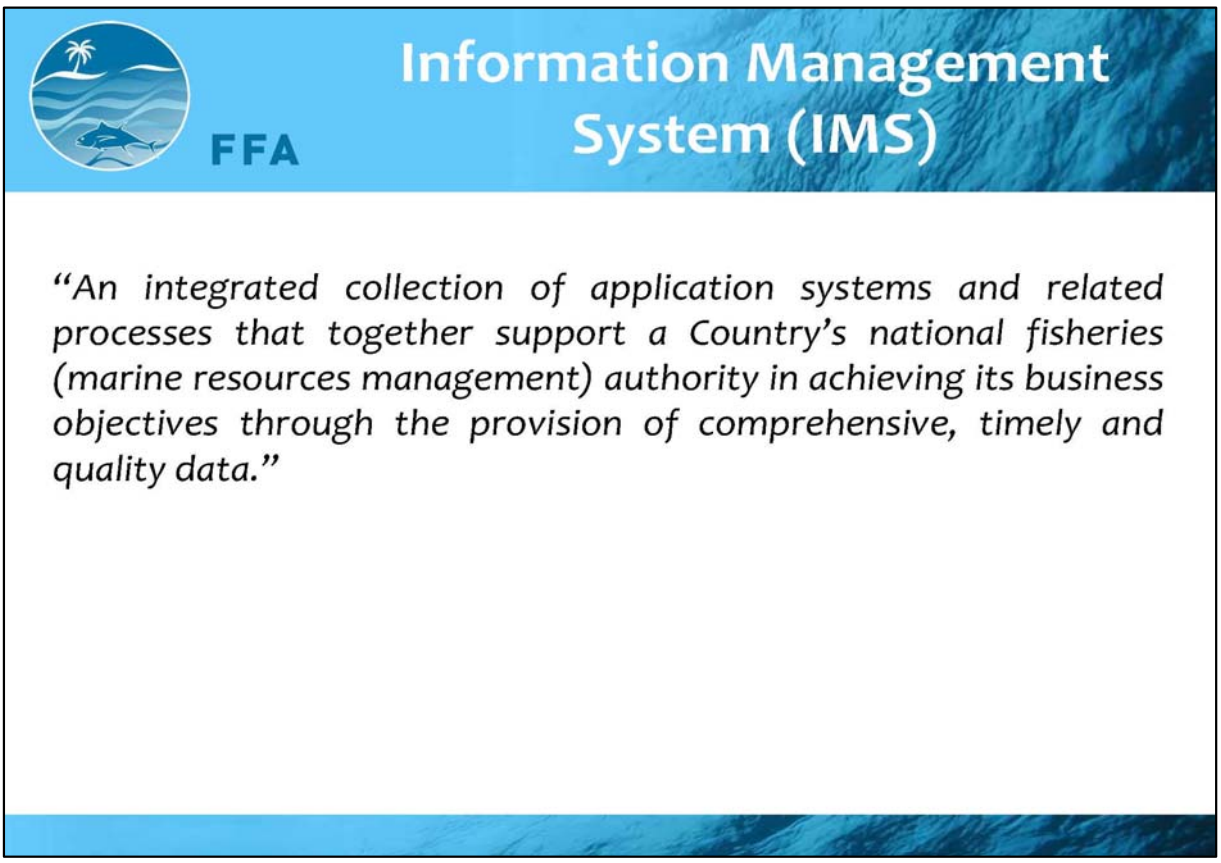
- **Cooperation with non-Parties:** provides for individual or collective cooperation with non-Parties, including by extending the application of the NTSA or developing side arrangements with respect to:
  - providing information and authority
  - engaging in cooperative surveillance and enforcement operations
  - sharing fisheries data and intelligence

Regional Information Management Facility (RIMF)

FFA

- RIMF concept has developed to be an integrated component of Information Management System
- Grown to expand beyond just MCS data
- Revised structure – an overarching regional data warehouse of fisheries management information/data


FFA
RIMF – Structure
Regional Information Management Facility
Regional Register
Niue Treaty Information System
Observer Program Management System
Country MCS Compliance Index
Violations and Prosecutions
Member Country IMS
Data Warehouse
Data Source
Analysis
Real Time Access


FFA
Information Management System (IMS)
"An integrated collection of application systems and related processes that together support a Country's national fisheries (marine resources management) authority in achieving its business objectives through the provision of comprehensive, timely and quality data."

IMS – Applications

- Observer Program management
- Violations and Prosecutions (VAP)
- FFA regional Register of Fishing Vessels – 'FFA Good Standing'
- Licensing
- VMS / VDS
- Port Inspections
- CDS – offloading / transhipment

IMS – Data Maxims

- Data is only ever entered once
- Data entered as close to the source of collection as possible
- All data entered is complete and correct
- Data is regularly checked for quality
- Data is accessible at any place at any time on any type of device as required
- Data is as real time as required

IMS – Data Maxims (Contd)

FFA

- Only data that helps the organization to deliver its' core objectives is collected
- The database is always independent from the user interface
- Security of information access is always a core deliverable
- National end-users drive system development and testing

Regional Fisheries Surveillance Centre - Focus

FFA

- Conduct 3 pass analysis of VMS data
- Provide the analysed surveillance picture to the members and surveillance providers
- Alert members of potential illegal activities in their EEZ or adjacent High Seas
- Coordinate surveillance providers MCS effort (QUAD & members) across the region
- Compliment members own MCS efforts

FFA

Compliance Index

Compliance Index	Risk Level	Criteria
-5 (Non-Compliant) Large Red Cross	Conducting IUU	1. Vessel not on the FFA Good Standing Register and/or is unlicenced and visually observed fishing in EEZ; or 2. Vessel not on WCPFC Register of Fishing Vessels and visually observed fishing in High Seas; or 3. Vessel visually observed to be transshipping illegally; or 4. Vessel visually observed to be in contravention of WCPFC conservation measures.
-4 Large Red Marker	Very High Risk of conducting IUU	1. Vessel is not on the FFA Good Standing Register and/or is unlicenced to fish in current EEZ and does not appear to be just transiting; or 2. Vessel on FFA VOI List and/or WCPFC/Greenpeace Blacklist for IUU; or 3. Vessel is same position as Carrier vessel outside of a recognized port limit; or 4. No observer onboard (Purse Seine vessels only)
-3 Large Orange Marker	High Risk of conducting IUU	1. Vessel is in the High Seas and not licenced; or 2. Vessel in EEZ to which it is not licenced but considered to be in transit; or 3. Vessel in EEZ and licence has recently expired; 4. Adverse Inspection or Observer Report within last 12 months
-2 Medium Light Green Marker	Medium Risk of conducting IUU	1. Vessel is in the High Seas, has a licence(s) but not to those EEZ's which are adjacent; 2. Vessel licensed for EEZ in which it is operating but infringements identified in Inspection or Observer Reports within last 12 months
-1 Small Light Green Marker	Low Risk of conducting IUU	1. Vessel is in the High Seas and licenced to those EEZ's which are adjacent; 2. Vessel licenced for EEZ in which it is operating and others, and Inspection report in last 12 months with only minor infringements
0 (Fully Compliant) Small Dark Green Marker	Very Low Risk of conducting IUU	1. Vessel licensed for current and adjacent EEZ's; and Observer onboard; or 2. Inspection report in last 12 months found vessel fully compliant.

FFA

MCS Data - Analysis

- MCS Data used in analysis process includes:
  - Vessel Monitoring System (VMS);
  - Licensing information;
  - FFA Register of Fishing Vessels;
  - Observer Reports;
  - Port Inspections;
  - Boarding Reports;
  - Vessel Log Sheets;
  - VOI Logs and IUU lists.

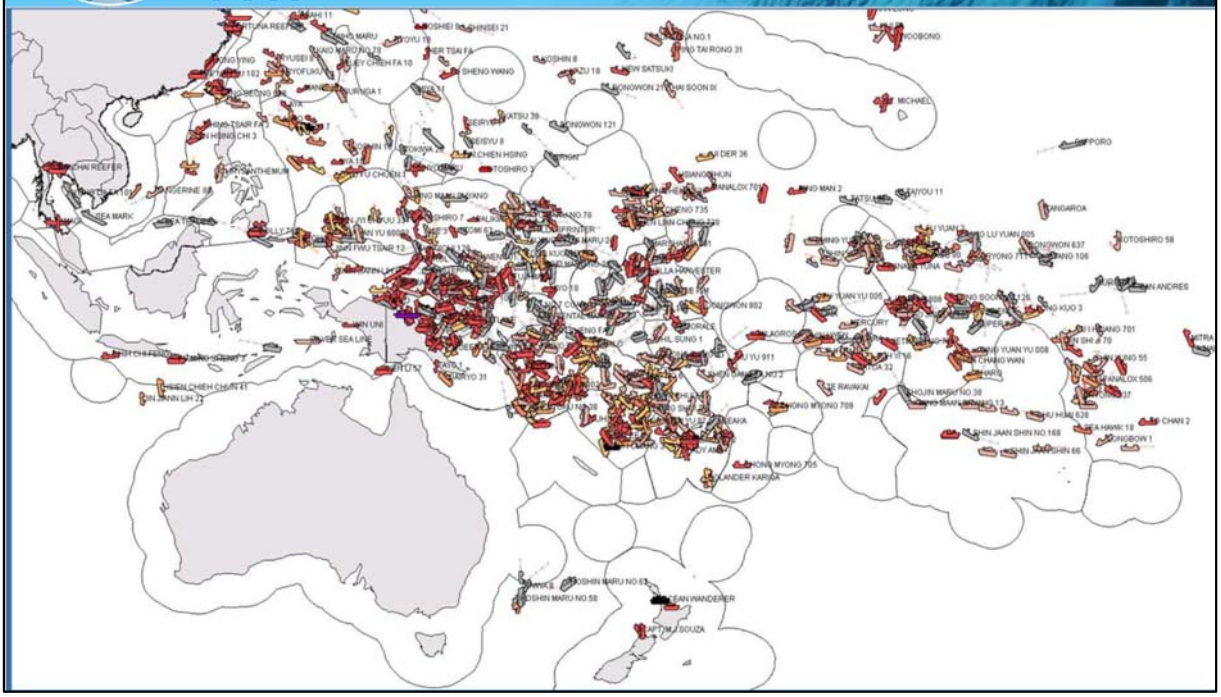
Regional Fisheries Surveillance Centre – Focus (contd)

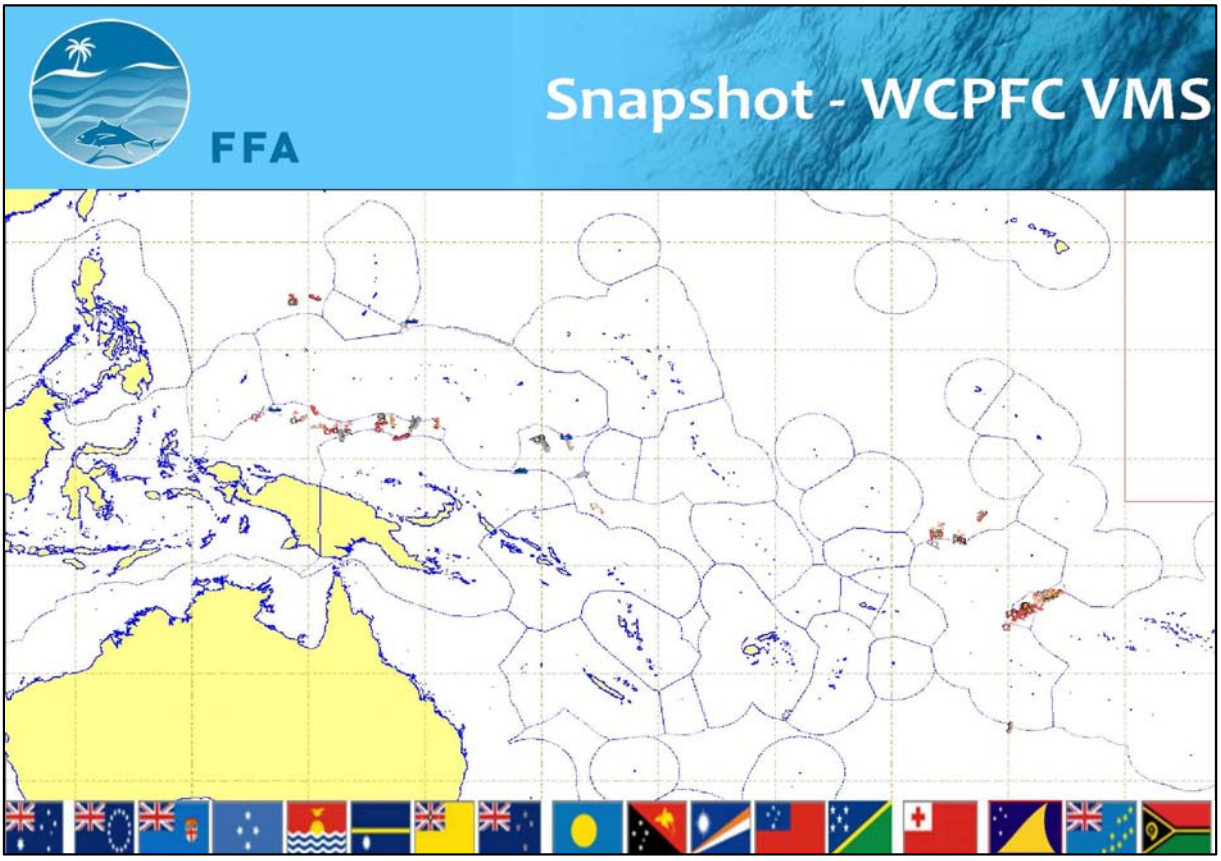
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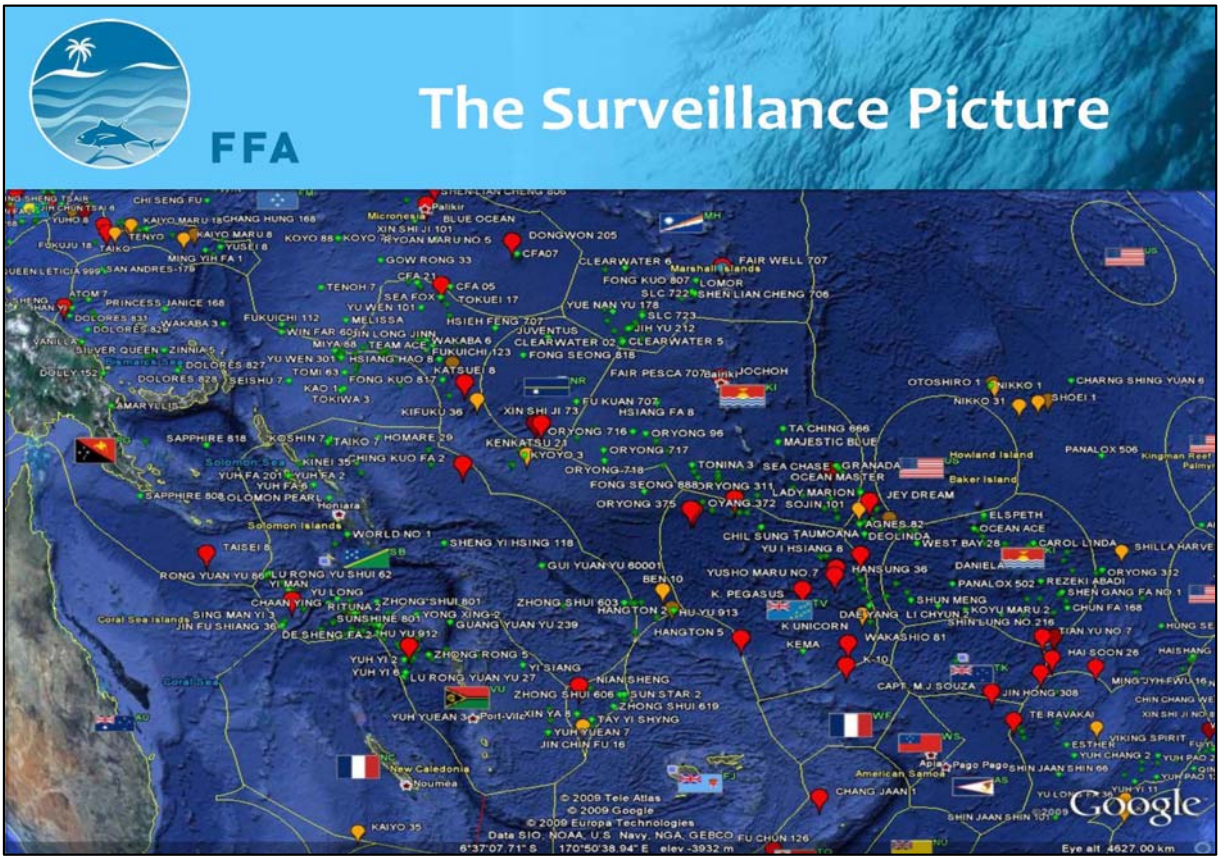
- Analyse supplied Contact Reports and provide feedback
- Assist FFA Legal Unit in providing evidence to support prosecutions
- Coordinate and host the JCC for 4 multi-lateral MCS operations
- FFA first point of contact regarding MCS matters

Snapshot – FFA VMS

FFA




FFA
Snapshot - WCPFC VMS


FFA
The Surveillance Picture
© 2009 Tele Atlas
© 2009 Google
© 2009 Europa Technologies
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Google


FFA
RFSC – The Future
• Roll four annual Regional MCS Operations into a continuous program of operations 365 days a year
• Automated analysis of all available data through the Regional Information Management Facility (RIMF) at the RFSC (+ human capacity)
• Integration of 100nm adjacent High Seas 'buffer' data into the Surveillance Picture for all FFA members.
• Exploring new technologies to better target IUU activities in the region –AIS, e-logs & reports, Delorme Inreach SE etc


FFA
MCS Challenges
• Detecting & managing High Seas activities which impact on FFA members (such as bunkering & transhipment)
• Continual improvement of MCS services to FFA members
• 'Buy-in' by Surveillance providers into the services and capabilities the RFSC provides.


FFA
QUESTIONS ?

The Role of Korea for the Responsible Fisheries in the South Pacific Ocean Focus on International Observer Program

Seok Gwan Choi (NFRDI, Korea)

Abstracts

Korean Observer program for distant water fisheries started in May 2002 by Ministry of Oceans and Fisheries(MOF)(old Ministry of Marine Affairs and Fisheries, MOMAF). National Fisheries Research & Development Institute (NFRDI) took in charge of observer recruitment and training. NFRDI have implemented the observer program and carried out observer training since 2004. There will be introduced about the contents of the rules regarding the observer program, the performance of Korean observer program, the observer member and activity, the observer data collection in longline tuna fisheries, the debriefing, the financial matters, and utilization of the observer data.

The member of Korean observer is now 20 men, observer trainer is 11 men and 2 women. Korean observers are surveying on board of distant water fishing vessels operating in the area of WCPFC, CCAMLR, IOTC, ICCAT, CCSBT, SEAFO, SPRFMO, NPFC, SIOFA, and FAO41. The collected data and report from korean observer are submitted to the international fisheries organization for fisheries stock assessment and MOF for fisheries policy by NFRDI.

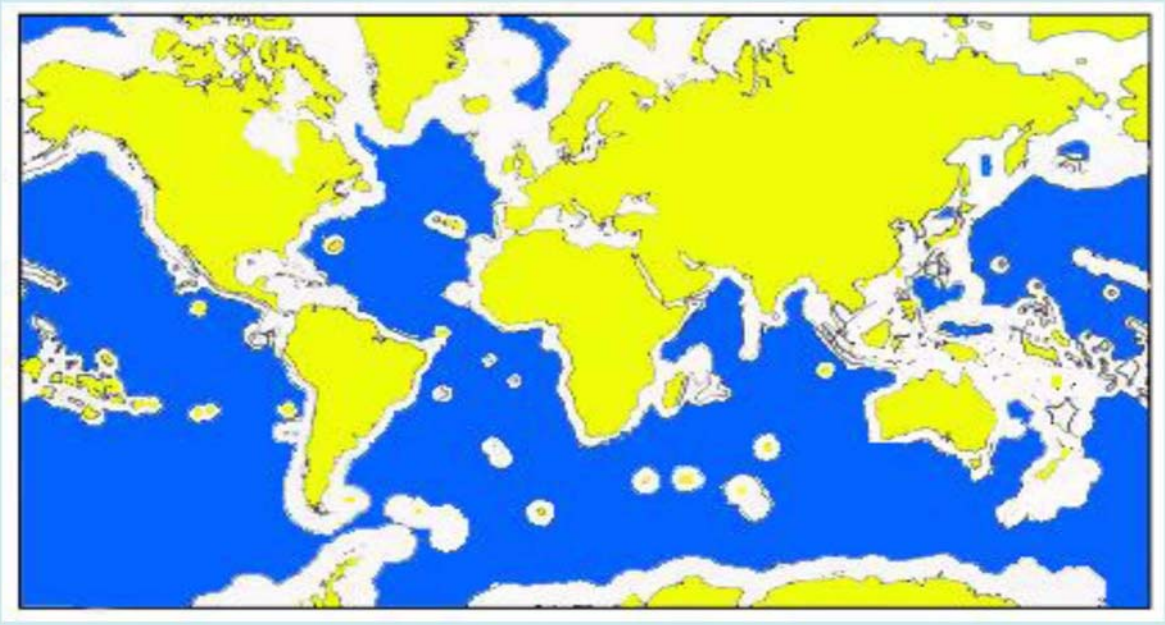
The Role of Korea for the Responsible Fisheries in the South Pacific Ocean focus on international observer program

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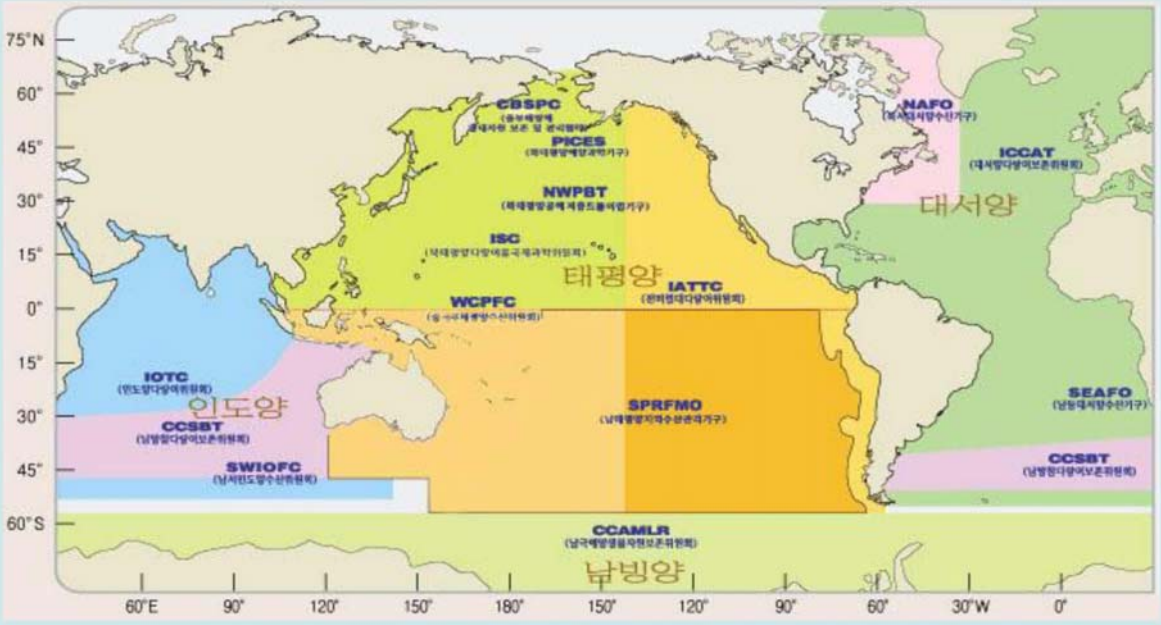
Fisheries Resources Management Division
National Fisheries Research & Development Institute(NFRDI)

Fisheries trend in the World

High Sea and Exclusive Economic Zone (EEZ) in the world



Map of RFMO in the World



Management Structure of RFMO



Commision
Decision Catch limit & Conservation Measure

Implementation-Compliance Comm.
-Confirm to comply the CM

Science Comm.
- Advice Stock status
- Research plan

Administration-Finance Comm.
- Discussion the finance



Expert meeting
- Discuss Main Issue

Working group Meeting
- Stock assessment

Collection of DATA
- Catch vessel data
- Observer data
- Research survey data

Need of Observer training by RFMO

RFMO	Coverage of observer(%)	No. of Fishing vessel	Observer (person)
WCPFC	5	111	5
CCSBT	10	19	2
IOTC	5	21	1
ICCAT	5~10	24	2
IATTC	-	-	ROP
CCAMLR	100	5	5
SEAFO	100	2(+∝)	2(+∝)
NPFC	100	2	2
SPRFMO	10~100	2	1
FAO41	100	20	20
계	5~100	206+∝	40+∝

Overview of Korean Observer Programs for Distant-Water Fisheries

Distant-water Fisheries of Korea



Vessels for Korean Distant Water Fisheries in 2011

Commercial Fisheries	Total	Pacific	Atlantic	Indian
Tuna LL	149	126	16	7
Tuna PS	30	28	2	-
Demesal fishes trawl	107	39	64	4
Squids jigging	31	-	31	-
Saury stick-held dig net	17(16)	15(14)	2(2)	-
Single line hook	11	-	11	-
Trap pot and bottom LL	11	2	8	1
Bottom LL	3	2	1	-
Total	359	212	135	12

( ) : vessels both squids jigging and saury stick-held dig net

Contents

1. Rules Regarding the Observer Programs
2. Performance of Korean Observer Program
3. Observer member and Activity
4. Observer data collection
5. Debriefing
6. Utilization of the observer data

1. Rules Regarding the Observer Programs

- Observer Program Project for distant water fisheries was approval by the Ministry of Marine Affairs and Fisheries (MOMAF) in May 2002 and MOMAF had carried out the project during 2002~2003, but National Fisheries Research and Development Institute (NFRDI) took in charge of observer training.
- Observer Program Project of MOMAF moved to NFRDI in 2004
- NFRDI have implemented the observer program and carried out observer training since 2004.

2. Performance of Korean Observer Program

2-1. Observer Recruiting by year

Year	Examination	Qualifications for Application	Examination Organization	Observer Picked out
2002	Interview	B.S. degree in natural science (Aged 23~55)	NFRDI	5(M 5)
2004		〃		5(M 4, F 1)
2006		(Aged 21~45)		4(M 3, F 1)
2007		〃		5(M 5)
2008		〃		1(M 1)
2009		〃		4(M 3, F 1)
2010		(Aged 21~55)		8(M 7, F 1)
2011		〃		5(M 4, F 1)
2012		〃		7(M 6, F 1)
2013		(Over age 21)		11(M 11)

• Recruitment method : Public offering through internet.

2-2. Observer Training

- Trainee -

- 2002 : Observer trainee (5) recruited and training on tuna longline fisheries in Pacific Islands Regional Office (PIRO) of NOAA located at Hawaii during 3 weeks.
- 2004~2013 : Observer(2~9) recruited and training on tuna longline & Purse seine, bottom longline, demersal trawl and other fisheries in NFRDI during 3 weeks.

* NFRDI have been in charge of the observer program and carried out the training seminars since 2004

2-2. Observer Training (continued)

- Trainer members-

Subject	No. Trainer	Organiza-tion	Position
Tuna fisheries (LL, PS)	4	NFRDI	Fisheries scientist
Demersal fisheries (Trawl)	3	〃	〃
Small pelagic Fisheries (Jigging, Stick-held dignet)	2	〃	〃
On-the sea Safety	2	Institute of Maritime and Fisheries Technology	Professional &Technician

2-2. Training of Trainer(continued)

- 4 observer trainer(2003) and 1 observer trainer(2004) attended the tuna longliner observer education program of PIRO, NOAA in Hawaii for training in observer data analysis and data debriefing during 1 week.
- 2 observer trainer(2005) attended the observer education program of IATTC for observer data standards review during 1 week.
- 1 observer trainer(2006) attended the observer education program of Alaska Fisheries Science Center for Bottom trawl fishery in North Pacific during 3 weeks.

2-3. Observer Training Contents

- Contents of training for scientific observer :
  - catch and catch effort, species identification
  - survey on incidental catch
  - body size and weight,
  - biological sampling (specimen, otolith etc)
  - Protective species (marine mammals, sea bird, sea turtle etc) obs.
  - Education on the sea safety (1 week training)
- Contents of training for surveillant observer :
  - including the methods for collection of information on fisheries management
  - education of Conversion Measure by RFMO

2-4. Compilation of Observer Manual

- 2004 : Production of Korean observer manual on tuna longline fisheries (112 page)
- 2005 : Production of Korean observer manual on tuna purse seine fisheries (122 page)
- 2006 : Production of Korean observer manual on trawl fisheries (128 page)
- 2007 : Production of Korean observer manual on bottom longline fisheries (143 page)

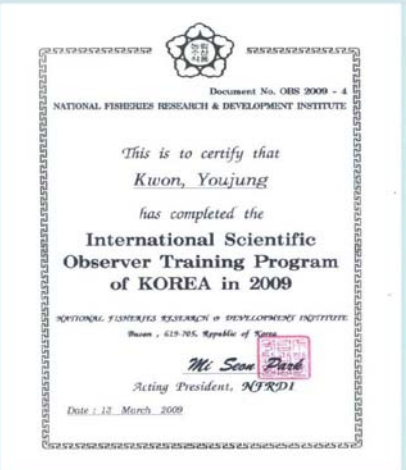
Production of Korean observer manual



2-5. Employment and contracting process

- Done with observer training course (3 weeks)
- Got certification of international observer issued by NFRDI
- Contract for part-time employee to NFRDI and work for freelance
- Contracts on observer fee with the fisheries companies when aboard commercial fisheries vessels
- Take opportunity about two cruises (one cruise each vessel) survey per year
  - One cruise lasts about 3~5 months

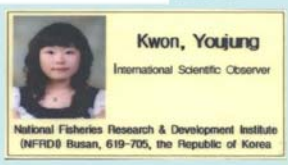
Certification of International Observer

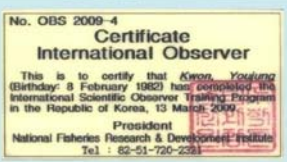

Document No. OBS 2009 - 4
NATIONAL FISHERIES RESEARCH & DEVELOPMENT INSTITUTE

This is to certify that
Kwon, Youjung
has completed the
International Scientific
Observer Training Program
of KOREA in 2009

Mi Seon Park
Acting President, NFRDI
Date : 13 March 2009







3. Observer member and Activity by year

Year	Observer	Activity	Survey area
2002	5		
2003	4	4	CCAMLR, SPRFMO, NPFC
2004	5	3	WCPFC, CCSBT, IATTC
2005	4	10	ICCAT, IATTC, NAFO, WCPFC, CCSBT, CCAMLR
2006	5	9	ICCAT, CCAMLR, IOTC, WCPFC
2007	6	12	ICCAT, CCAMLR, SEAFO, IATTC, WCPFC, IOTC
2008	9	12	ICCAT, CCAMLR, SEAFO, SPRFMO, WCPFC
2009	9	15	ICCAT, CCAMLR, SEAFO, WCPFC, CCSBT, IOTC
2010	13	16	ICCAT, CCAMLR, FAO41, NPFC, SEAFO, SIOFA
2011	7	14	ICCAT, CCAMLR, SIOFA, SEAFO, FAO41
2012	11	18	ICCAT, CCAMLR, SIOFA, SEAFO, IOTC, FAO41
계	20(now)	113	-

4. Observer data collection
- tuna longline fisheries -

- **Trip specification record**
- **Set and haul information**
- **Gear configuration**
  - No. of floats, hook type, hook size, line shooter speed, bait
  - mainline, float line, branch line, leader, etc.
- **Catch log**
  - species name, float number, hook number
  - caught condition, kept/returned, damage, sex,
  - measurement (fork length, weight etc.)
  - tagged, photo, comments
- **Protected species event log**
  - seabird mitigation
  - sea turtle, Seabird and marine mammal biological data
- **Weather record**
  - weather code, beaufort and temperature (sea surface, vertical)

Form . Longline catch log

Set No.	Catch No.	Float No.	Hook No.	Body position hooked (M, TH, S, B)	Species	Caught condition (A, D, I, U)	Treatment (K, A, D, F, U)	Damage (CC, SQ, SB, BD, MM, no)
1	1	18	9	M	yf	A	K	no
1	2	25	15	M	be	A	K	no
1	3	28	12	M	be	A	K	no
1	4	31	17	M	al	D	K	no
1	5	31	12	M	yf	D	K	no
1	6	39	13	M	escolar	A	D	no
1	7	40	15	M	Hammerjaw	D	D	no
1	8	42	17	M	dolphinfish	A	D	no
1	9	42	7	M	be	A	K	no
1	10	43	12	TH	be	A	K	no
1	11	45	15	M	be	A	K	no
1	12	46	12	M	be	A	K	no
1	13	48	10	M	be	D	K	no
1	14	48	11	TH	be	A	K	no
1	15	54	2	S	yf	D	K	no
1	16	56	13	M	be	A	K	no
1	17	61	6	M	be	A	K	no
1	18	61	3	M	al	A	K	no
1	19	62	4	M	escolar	A	D	no
1	20	62	10	M	be	A	K	no
1	21	63	4	M	yf	A	K	no
1	22	63	17	M	swordfish	A	K	no
1	23	65	11	M	be	A	K	no
1	24	67	12	M	Hammerjaw	A	D	no
1	25	70	10	M	be	D	D	SB

Caught condition (A:alive, D:dead, I: injured, U: unknown) / kept/returned (K: kept, A: alive, D: dead, F: finned) /
Damage (CC:Cookie cutter , SQ: squid damage, SB: shark damage, BD: bird damage, mm: marine mammal damage)

Form . Biological log

Sex	Sex Matu.	Fork length (FL)	Body height (BH)	Head length (HL)	EF (Eye-Fork)	CK (Cleith. -Keel)	Body weight(BW) Before process	Body weight(BW) After gilling guting	Stomach contents	Comments (tagged, photo, specimen)
f	2	142	36	42			44	38		
f	3	117	35	35			31	26		
m	1	123	39	36			36	30		
u	u	91	27				15	15		
m	3	153	40	45			57	51	Jack mackerel	
f	3	67	15				5	5		photo
u	u	108	10				2	2		photo
m	u	95	24				8	8		photo
m	2	117	33				29	24	chub mackerel, squids	
m	1	149	40	45			66	57		
m	2	147	40	41			60	51		
m	2	150	43	46			59	50		
u	1	158	46				61	59		
f	2	128	35				41	33		
f	2	135	37				45	36	hairtail	
f	4	114	34				31	26		
f	2	110	30				30	25		
u	u	95	24				15	15		
u	u	95	19				10	10		photo
m	u	118	35				32	26		
f	u	147	36				50	43		
m	u	112	19		95	61	14	9		
m	2	119	35				31	26		
u	u	100	12				3	3		
f	4	135	43	39				40		photo

5. Debriefing

- After the survey, observer have to submit his survey report with field data record and to enter them into computer to NFRDI .
- Check the data through the report presen-tation of observer and debriefing process by observer manager of NFRDI (needs about 3~5days).

6. Utilization of the observer data

- NFRDI have been in charge of employment, training, deployment, data debriefing, data process and compilation of annual observer report.
- Observer data will be used by NFRDI for various purpose(Study on fisheries resources etc.)
- NFRDI submits observer report to MOF for fisheries policy and presents their activities at international fisheries organizations.

Role of Korea for the Responsible Fisheries in the South Pacific Ocean

Role of Korea for the Responsible Fisheries

- **Science contribution** of Fish Stock Management for the Sustainable fishery
- **Exhaustive compliance** of Conversion Measure(CM) by RFMO
- **Expansion** of Observer program
  - Specialization of observer by fishery
- **Assistant to a developing country** for development of observer program


Thank you ~ !!!
감사합니다 ~ !!!
WCPFC
8th Regular Session
Scientific Committee

Presentation

Session 2

Special Topics on International Cooperation with South Pacific

"The Development Status and Future Issues of Fisheries Sector in the South Pacific Islands"

Patricia Jack-Jossien (Vessel Day Scheme Manager, PNA)

"Possible Fisheries Cooperation with Pacific Island Countries with respect to Resource Management and Aquaculture Development"

Jeong Sook Park (NFRDI, Korea)

"A Proposal of Cooperation in South Pacific Ocean using KMA Meteorological System"

Sung Hyup You (Deputy Director, KMA, Korea)

The Development Status and Future Issues of Fisheries Sector in the South Pacific Islands

Patricia Jack-Jossien (Vessel Day Scheme Manager, PNA)

Abstract

Time to Shape Up or Shift Out [The development status and future issues of fisheries Sector in the South Pacific Islands]

PNA region, ever existent although was once unheard of in the recent past, has emerged as EEZs of eight[1] (8) Pacific Island Nations within the deep blue Western and Central Pacific Ocean (WCPO) formalized when these Island Nations with thousands of islands and few million people over an area of 14.3 km^2 of EEZs banded together in 1982 to pursue common interests in tuna fisheries. Today the PNA remains custodians of the world's greatest skipjack fishery in their EEZs straddling the equator between 20°N and 20°S within which fishing is most active around 5°N and 5°S and exclusively in EEZs.

PNA region has catered and been catering to about 70% of the WCPO skipjack and about 50% of global supply, which is roughly estimated to be 1.1million MT of skipjack worth no less than USD2.5 billion to canneries and more than double in retail and *yet*, PNA sees very minimal return.

It is high time the PNA should stop supplying the world economies with raw materials, giving jobs and job security and be the recipient of mere USD 240 million [in access/license fees] in a USD6 billion trade. The PNA should cooperate to assert the PNA leaders' ambitions to promote PNA in partnerships that will ensure equitable development and participation in sustainable fishery and help promote PNA from the PNA region. These partnership cooperatives may take various forms to maximize economic benefits through 1) cooperation in respect of initiatives that benefit all Parties or 2) cooperation through commercial ventures involving potentially only some Parties.

In recognition and appreciation of the range of economic interests across the PNA membership, Parties acknowledge that they each have different amounts of tuna in their fisheries EEZs and other resources supporting fishing and fishing related activities. Some Parties have port facilities suitable for refueling fishing vessels and unloading catches; others do not. Some Parties have fresh water supplies for fish processing plants; others do not. Some want to develop large domestic tuna fisheries; others want to focus on obtaining benefits from foreign fishing license. There are opportunities for Parties to work together and with others (fishing industry/nations alike) in a complementary manner as Parties pursue different strategies for obtaining value from tuna fisheries.

Given the growing concern and fact that tuna stocks are under pressure globally, that PNA region is in the midst of WCPO, which remains the healthiest resource in any RFMO and is grounds from which 50% of world skipjack supply come, that the PNA Vessel Day Scheme[2] is in place, the time has come for interests to take shape to develop our skipjack fishery or face the possibility of being shifted out of the billion dollar trade.

[1] Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea, Solomon Islands, and Tuvalu.

[2] Established in 2007

The Development Status and Future Issues of Fisheries Sector in the South Pacific Islands

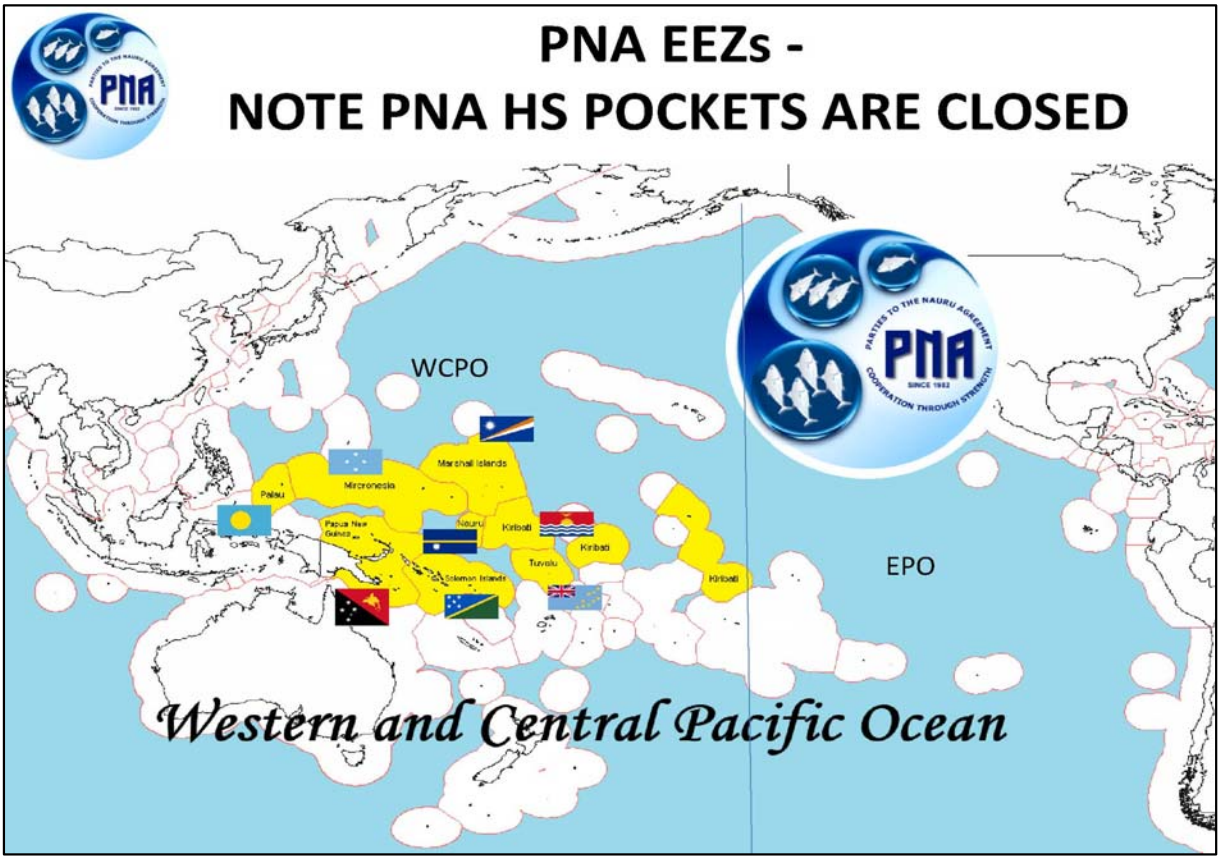
Ms. Patricia Jack-Jossien
Vessel Day Scheme Manager, PNA Office
KOSOPFF 2013 Seoul Symposium
Seoul, Korea
17 October 2013

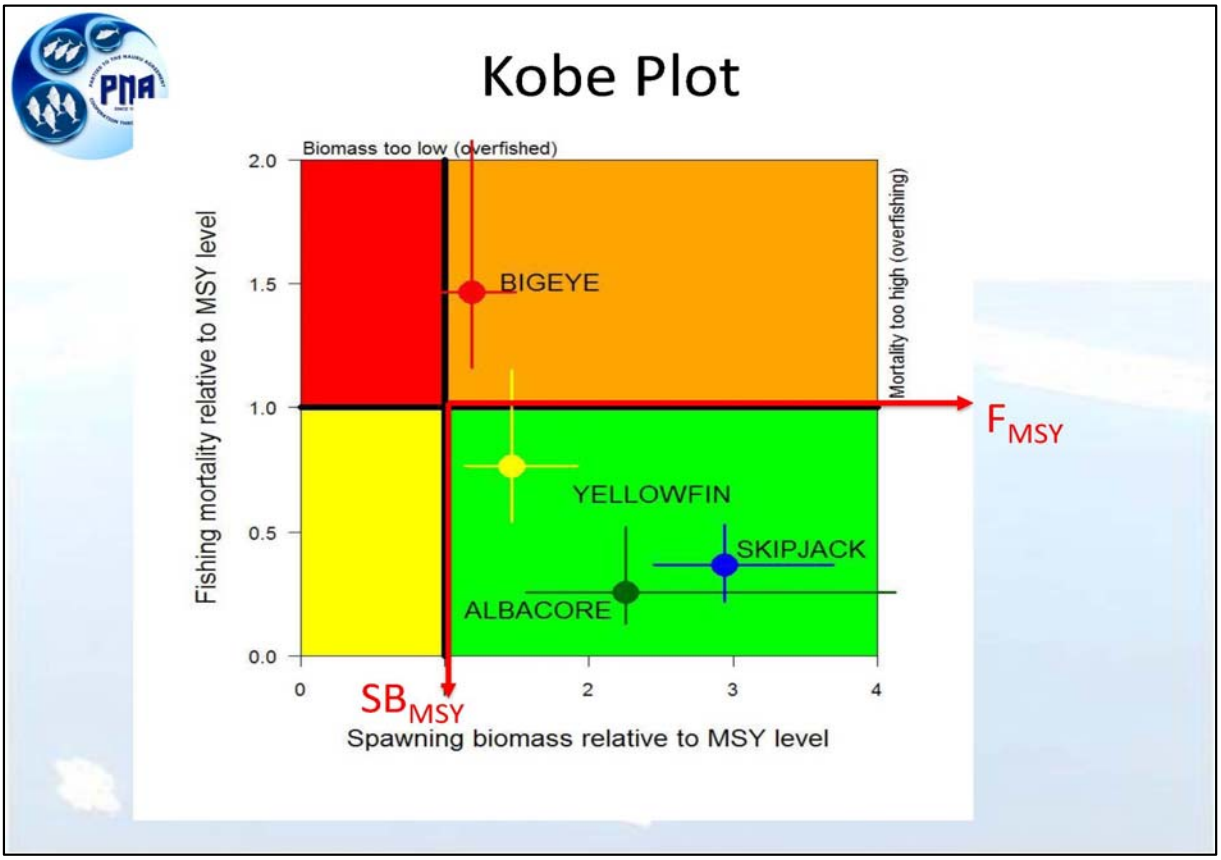
"Earning Billions from our Tuna Resources - Learning from the successes of the Parties to the Nauru Agreement"

Media quote

"$4 billion harvest in WCPFC"

- So what is in it for PNA?


PNA EEZs -
NOTE PNA HS POCKETS ARE CLOSED
WCPO
EPO
Western and Central Pacific Ocean


Kobe Plot
Biomass too low (overfished)
Mortality too high (overfishing)
Fishing mortality relative to MSY level
Spawning biomass relative to MSY level
BIGEYE
YELLOWFIN
SKIPJACK
ALBACORE
F MSY
SB MSY
2.0
1.5
1.0
0.5
0.0
0
2
3
4

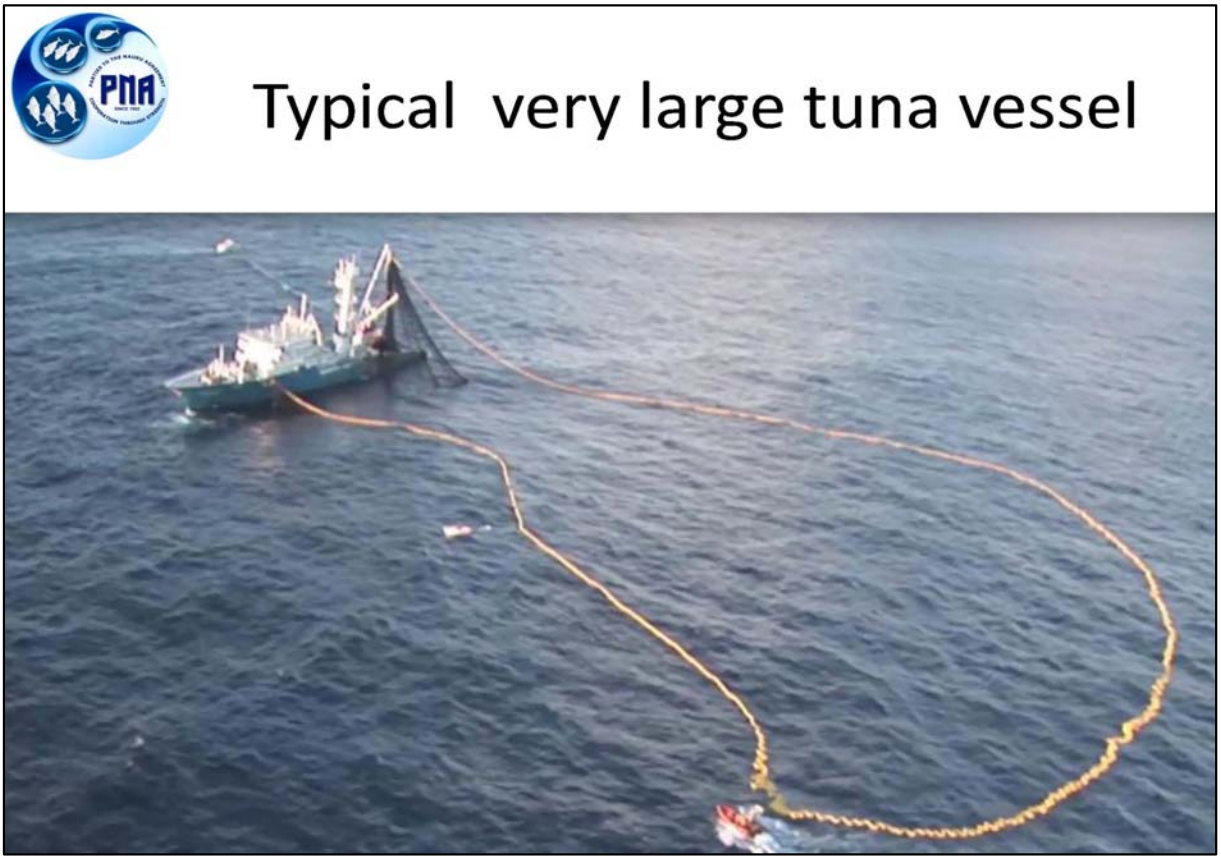
The PNA area, a vast 14.3 km² of combined EEZ on the same scale

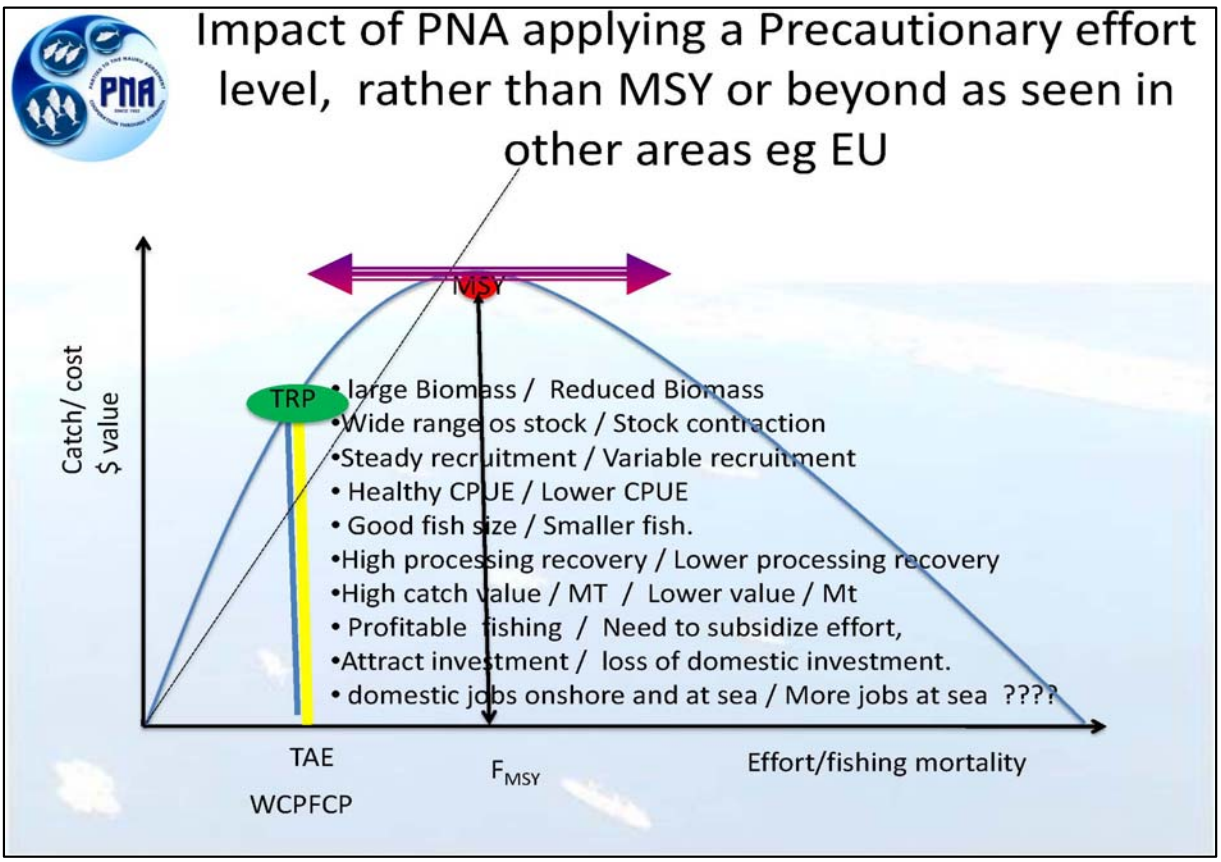


8 small island nations, but in fact all are "large ocean states."
Includes 2 smallest island nations Nauru 20km² and Tuvalu 26km².

You are familiar with the North Atlantic vast expanses of water and Europe




Typical very large tuna vessel


Impact of PNA applying a Precautionary effort level, rather than MSY or beyond as seen in other areas eg EU
MSY
TRP
Catch/ cost
$ value
• large Biomass / Reduced Biomass
•Wide range os stock / Stock contraction
•Steady recruitment / Variable recruitment
• Healthy CPUE / Lower CPUE
• Good fish size / Smaller fish.
•High processing recovery / Lower processing recovery
•High catch value / MT / Lower value / Mt
• Profitable fishing / Need to subsidize effort,
•Attract investment / loss of domestic investment.
• domestic jobs onshore and at sea / More jobs at sea ????
TAE
WCPFCP
F_{MSY}
Effort/fishing mortality

Transshipping in Majuro, Lagoon, RMI

1.1 million mt of our resources destined to Asia, and Latin America economies to be processed and exported to the EU and USA.



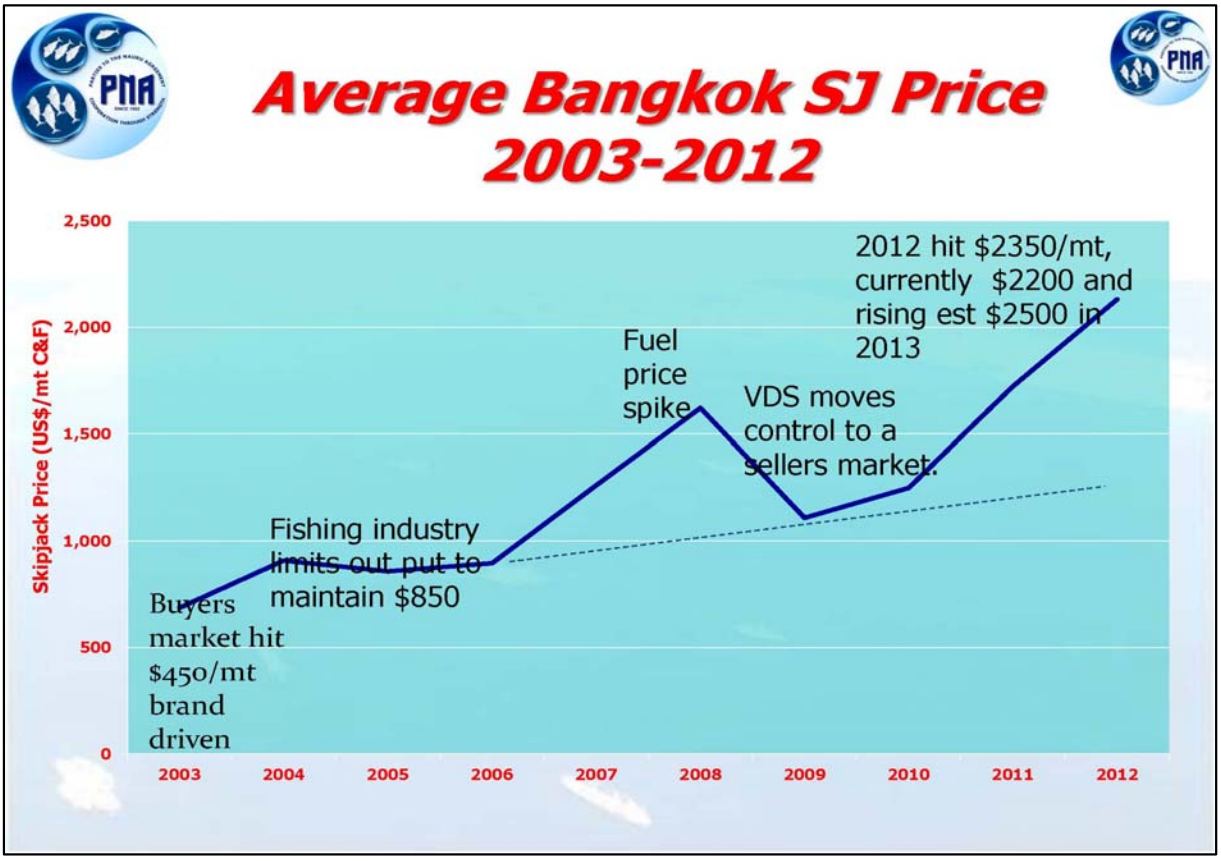
Re-cutting the PNA cake

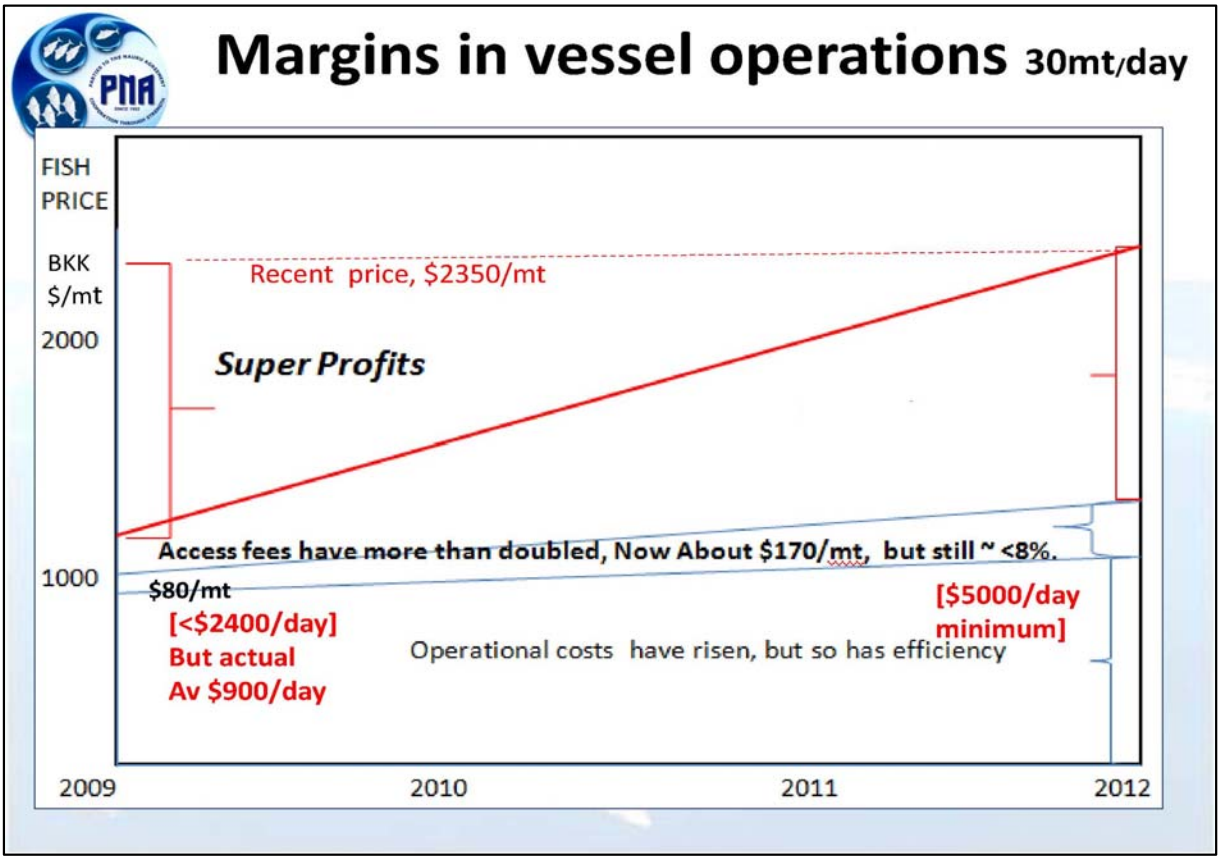


- Broadly PNA office has been working in 3 general areas;

– growing the PNA cake bigger,
–take a bigger slice[s] for PNA,
–add icing to the PNA cake.–

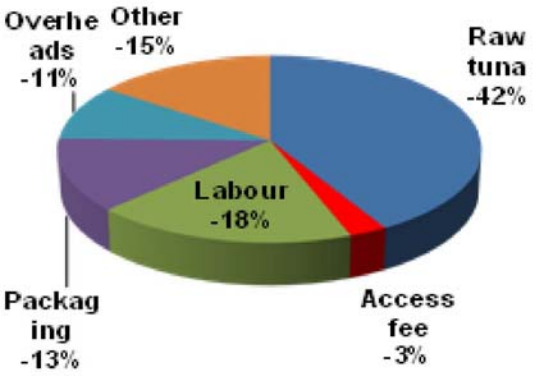
being left the crumbs on the plate is not acceptable.
- After all it is PNA's Party.!.


Average Bangkok SJ Price 2003-2012
Skipjack Price (US$/mt C&F)
2,500
2,000
1,500
1,000
500
0
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Buyers market hit $450/mt brand driven
Fishing industry limits out put to maintain $850
Fuel price spike
VDS moves control to a sellers market.
2012 hit $2350/mt, currently $2200 and rising est $2500 in 2013


Margins in vessel operations 30mt/day
FISH PRICE
BKK $/mt
2000
1000
Recent price, $2350/mt
Super Profits
Access fees have more than doubled, Now About $170/mt, but still ~ <8%.
$80/mt
[<$2400/day]
But actual
Av $900/day
Operational costs have risen, but so has efficiency
[$5000/day minimum]
2009
2010
2011
2012

The PNA fishery today- sees the can growing bigger

What PNA gets from a can is about 3% today

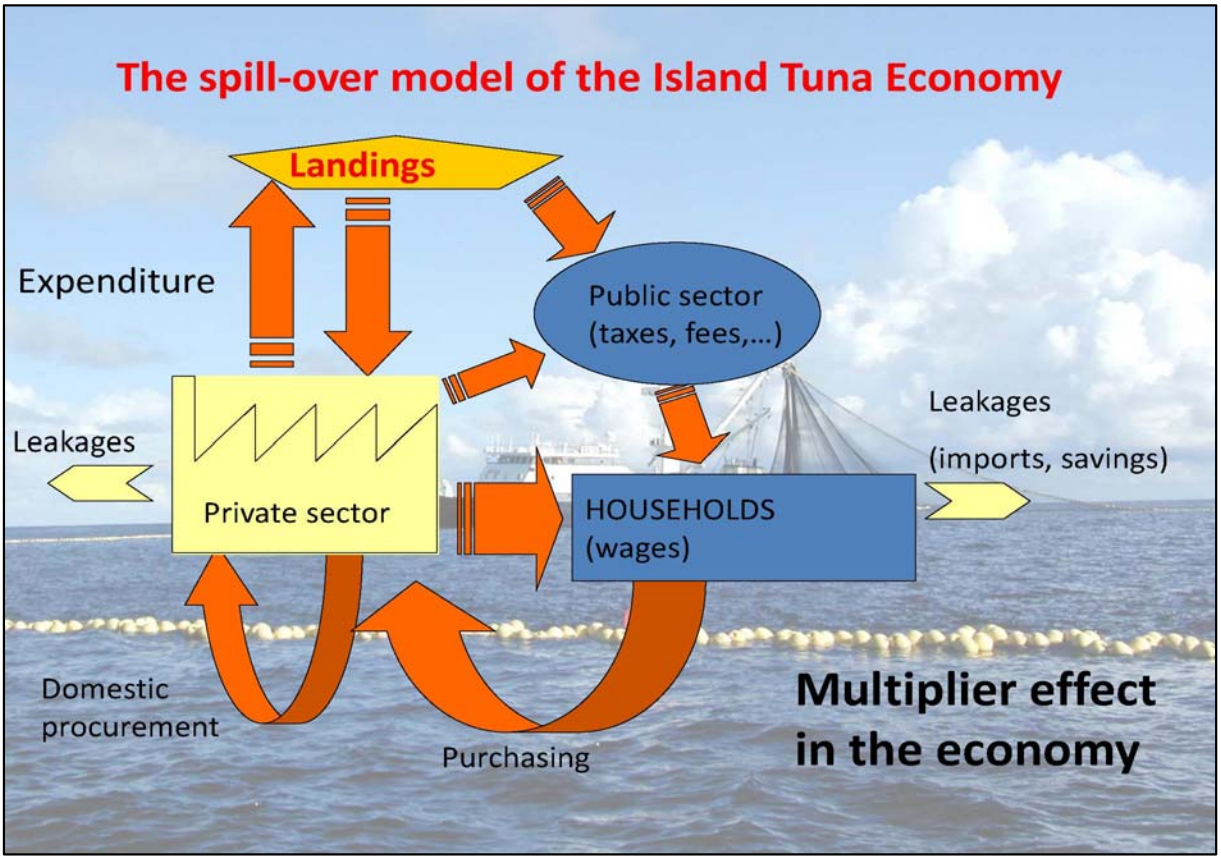


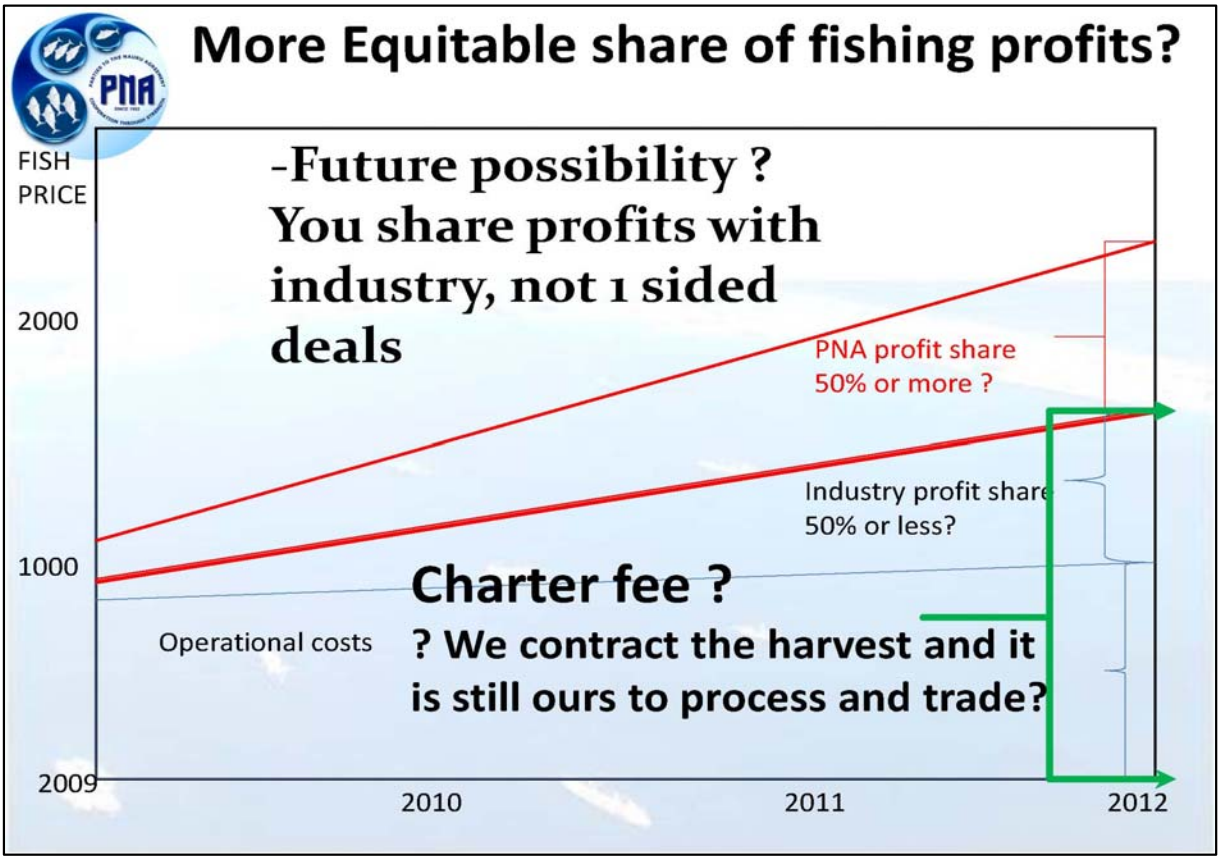


PNA is making money
Fishing and processing industry is making money
win-win

PACIFIC ISLANDERS IN PNA PLANTS – PNG, SI and RMI




The spill-over model of the Island Tuna Economy
Landings
Expenditure
Public sector
(taxes, fees,...)
Leakages
Private sector
Leakages
(imports, savings)
HOUSEHOLDS
(wages)
Domestic
procurement
Purchasing
Multiplier effect
in the economy


More Equitable share of fishing profits?
FISH
PRICE
-Future possibility ?
You share profits with
industry, not 1 sided
deals
2000
PNA profit share
50% or more ?
Industry profit share
50% or less?
1000
Charter fee ?
Operational costs
? We contract the harvest and it
is still ours to process and trade?
2009
2010
2011
2012

adding the icing to the cake



MSC Certificate

MOODY INTERNATIONAL

FISHERIES MANAGEMENT CERTIFICATE OF REGISTRATION

This is to certify that the:

PNA Western and Central Pacific Skipjack Tuna (*Katsuwonus pelamis*) unassociated set purse seine Fishery

Has been assessed and conforms with the requirements of the MSC Principles and Criteria for Sustainable Fishing as a well-managed and sustainable fishery

Unit of Certification:
Species: Western and Central Pacific skipjack tuna (*Katsuwonus pelamis*)
Method: Purse-seine setting on unassociated /non FAD free schools
Area: Western and Central Pacific covering the EEZs of the PNA parties

This certificate extends to the point of free-school confirmation and catch landing on fishing vessel.

No Inseparable or Practicably Inseparable catches are currently allowed under this certificate.

Fishery Management Reg° Code: **MML-F-112**
Valid from: **21st December 2011**
Valid until: **20th December 2016**
Authorised signature:

CERTIFIED SUSTAINABLE SEAFOOD MSC www.msc.org

This is not a legal document and cannot be used as such. This certificate remains the property of Intertek Moody Marine to whom it must be returned on request.
Intertek Moody Marine, Merlin House, Stanier Way, Wyvern Business Park, Derby DE21 6BF, UK

MOODY INTERNATIONAL

Certified Fishery:

PNA Western and Central Pacific Skipjack Tuna (*Katsuwonus pelamis*) unassociated set purse seine Fishery

Product from the following organisations only is authorised to enter into MSC Chain of Custody certification programmes:

Companies and vessels included within
PNA Group Chain of Custody Scheme

Parties to Nauru Agreement (PNA)
PO Box 3992
Majuro
Marshall Islands 96960

These will be listed at:
http://pnatuna.com/msc_vessels

Valid from: **21st December 2011**

Project Ref No: **82122**
Valid until: **20th December 2016**
Authorised signature:

CERTIFIED SUSTAINABLE SEAFOOD MSC www.msc.org

This is not a legal document and cannot be used as such. This certificate remains the property of Intertek Moody Marine to whom it must be returned on request.
Intertek Moody Marine, Merlin House, Stanier Way, Wyvern Business Park, Derby DE21 6BF, UK



SCS Global Services does hereby certify that an independent assessment has been conducted on behalf of:

Parties to the Nauru Agreement (PNA)

P.O. Box 3992, Majuro, MH 96960, Republic of Marshall Islands
A list of group vessels is contained in an addendum to this certificate

Group MSC Chain of Custody certification for Harvest, Transportiaon and Sale of MSC-certified PNA Western and Central Pacific skipjack tuna

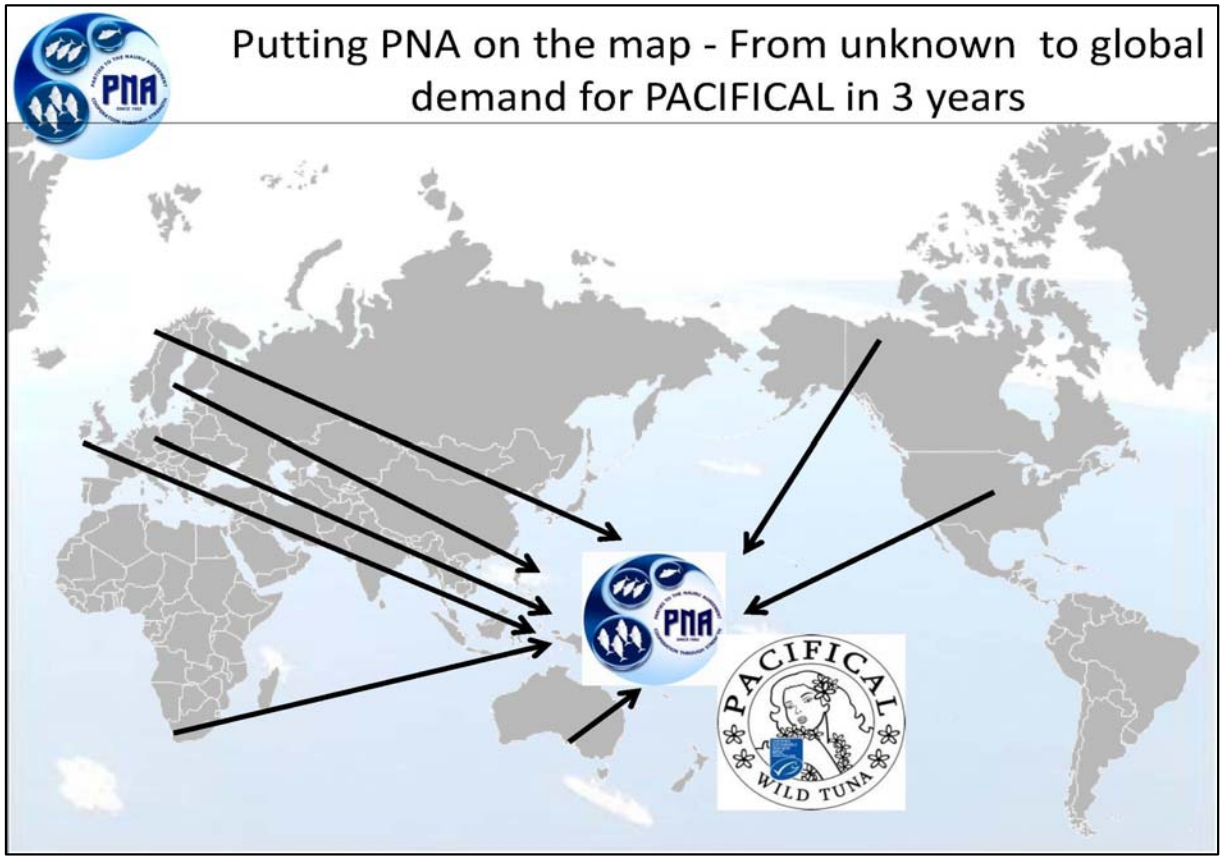
The assessment has been conducted by SCS Global Services (SCS) in accordance with the rules of the Marine Stewardship Council. This product(s) comes from a fishery that has been independently certified to the MSC's standard for a well-managed and sustainable fishery and is eligible to carry the MSC logo.
MSC Standard: MSC Chain of Custody Standard V.3.0 - 15 August 2011

Certification Code: C-SCS-0888
Valid From 18 April 2013 to 17 April 2016

SCSglobal SERVICES

Robert J. Hrubes, Ph.D., Executive Vice President
SCS Global Services
2000 Powell Street, Ste. 600, Emeryville, CA 94608 USA

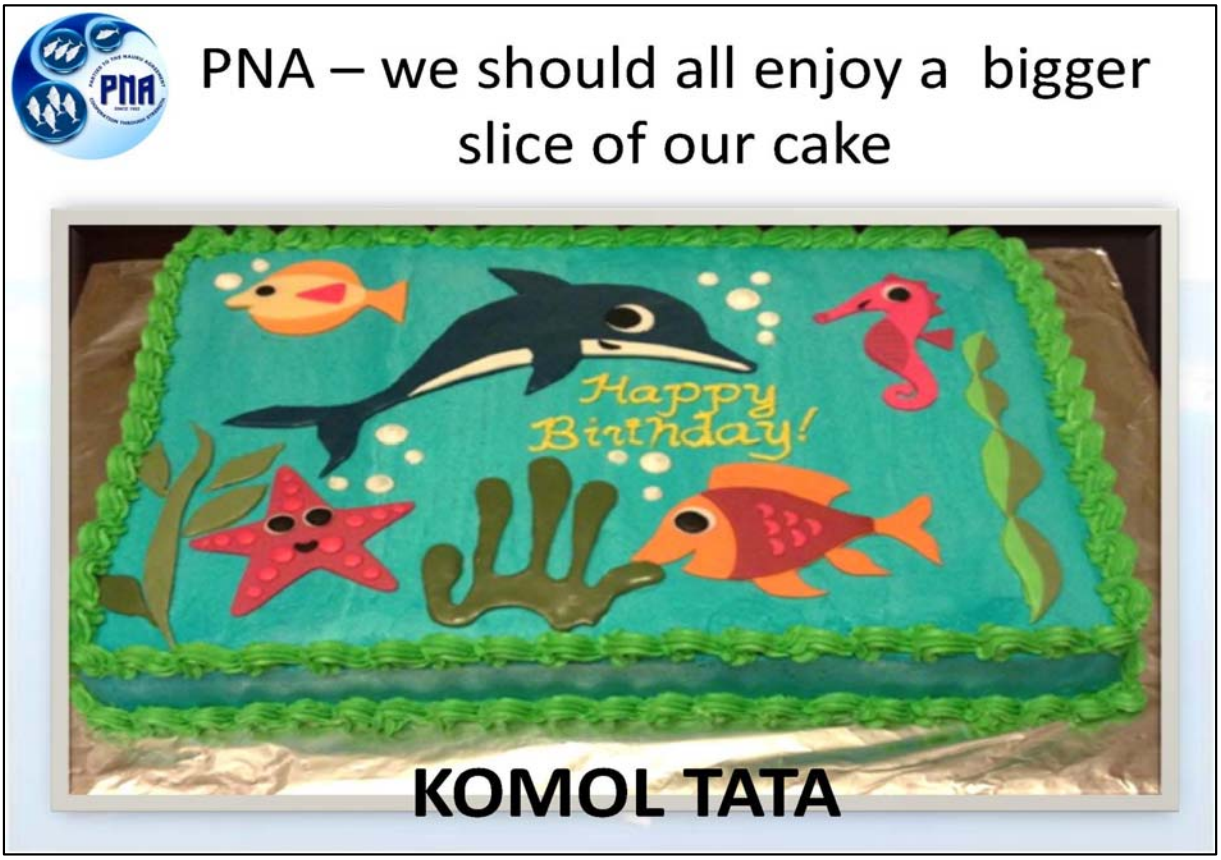



Putting PNA on the map - From unknown to global demand for PACIFICAL in 3 years
PNA
PACIFICAL
WILD TUNA


General Reactions to Pacifical Story and Logo
"I love it! I want to buy Pacifical and I want to go to the Pacific!" –WWF Germany (Director of Marine Conservation)


MSC - adding the cream
100% PACIFICAL
WILD TUNA
What MSC certification does offer PNA and industry is a premium on top of the trade..
PNA are looking to offer more.




PNA – we should all enjoy a bigger slice of our cake
Happy Birthday!
KOMOL TATA

Possible Fisheries Cooperation with Pacific Island Countries with respect to Resource Management and Aquaculture Development

Jeong Sook Park (NFRDI, Korea)

Korea's fisheries have recently stood out in importance and it dates back to around 1945 when Korea became independent from Japanese occupation which lasted for 36 years and national economic autonomy was urgently needed. However, the Korean War (1950-1953) between North Korea, China and American-led United Nations forces divided into two countries, namely South and North Korea. After the war, social, economic and political turmoil was endemic throughout the nation. At that time, Korea was one of the poorest countries on the world.

Korea's fisheries development began when the central government initiated the first Five-Year Economic Development Plan in 1962. Since then, annual fisheries production has grown dramatically. Fisheries are food fish and nutrition suppliers, a creator of employment and a generator of income in terms of poverty alleviation. In addition, fisheries exports represent a significant source of foreign currency earnings which were desperately needed for the economic rehabilitation and development.

The National Fisheries Research and Development Institute (NFRDI) is widely recognized as a leading institute of fisheries and aquaculture sciences in the Republic of Korea. NFRDI has developed fishing and aquaculture technologies since its establishment in 1921, which eventually contributes to the national development of fisheries and aquaculture. NFRDI is now seeking fisheries cooperation with developing countries to support their development of fisheries and aquaculture.

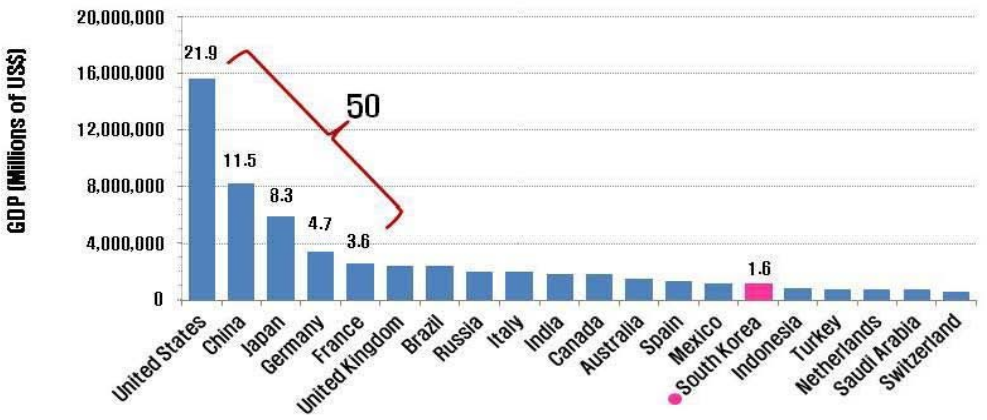
Korea became the 24th member of the Development Assistance Committee of the OECD in 2009 which was the first time that an international aid recipient had become an international benefactor since the establishment of the OECD in 1961. The monumental success story of Korea's economic development as a growth engine to provide foreign currency liquidity for national rehabilitation can be a lesson learned, in particular that fisheries played a significant role.

Possible Fisheries Cooperation with Pacific Island Countries

– Resource Management and Aquaculture –

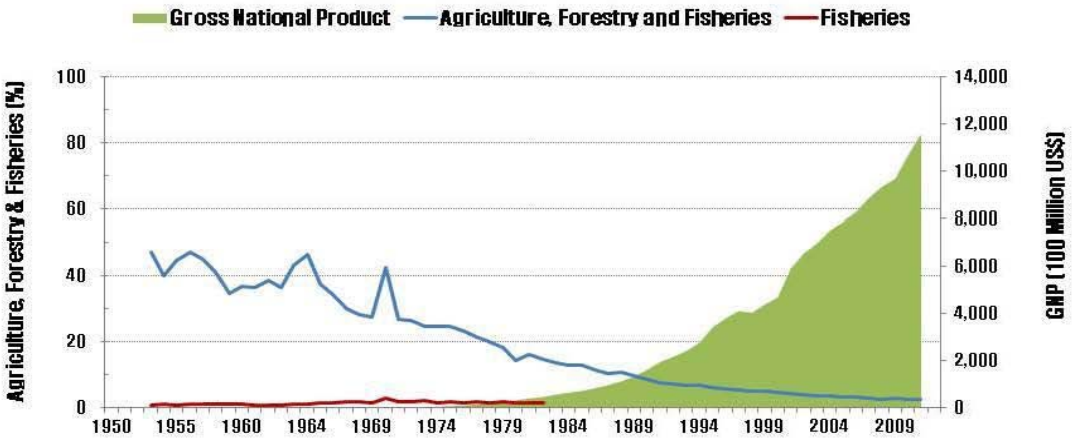
Jeung Sook PARK
National Fisheries Research and Development Institute

KOREA : World 15th Largest Economy



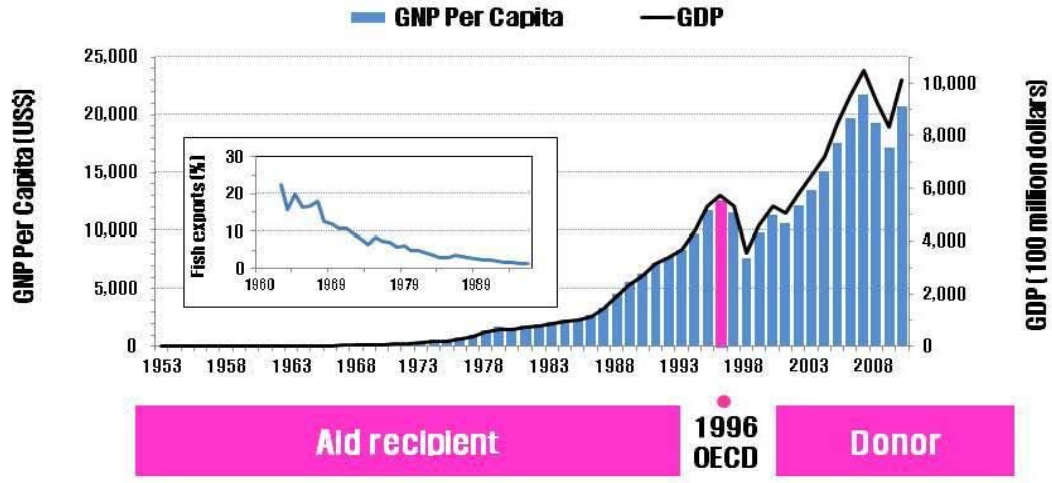
2012 countries' GDP list by IMF

Proportion of Primary Industry in GDP



Economic Statistics Yearbook, The Bank of Korea

GDP and GNP Per Capita



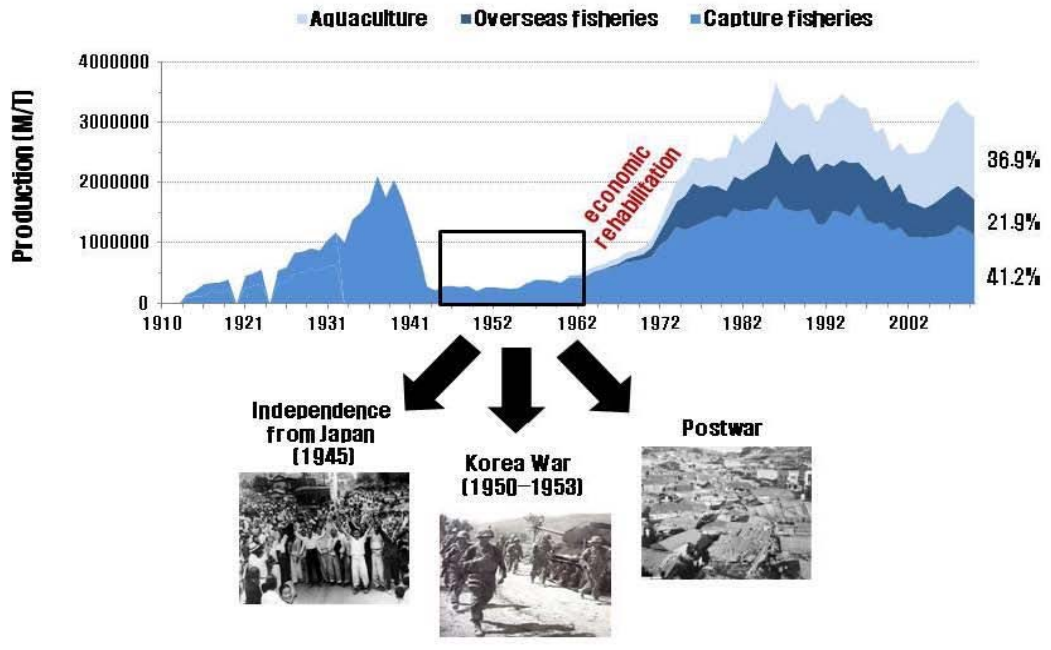
Economic Statistics Yearbook, The Bank of Korea

Fisheries and Fishery Industry

1
- Food supplier
- Creation of employment
- Income generator

2
- Contribution to economic growth and development
- Gender equality

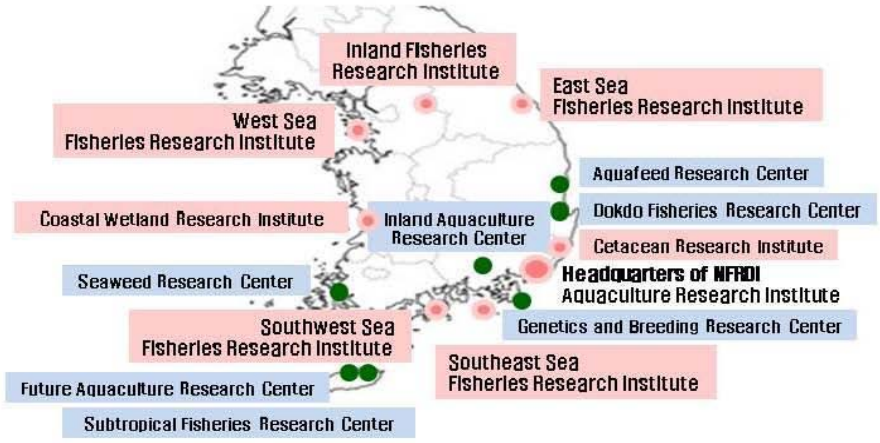
Capture Fisheries and Aquaculture Production



History

- 1921 Fisheries Experiment Station
- 1948 ROK was formally established
- 1949 Central Fisheries Experiment Station
  - Ministry of Commerce and Industry (1949–1955)
    ※ Maritime Affairs Office (1955–1961)
  - Ministry of Agriculture (1961–1996)
    ※ National Fisheries Administration (1966–1996)
- 1963 National Fisheries Research and Development Agency
  - Ministry of Maritime Affairs and Fisheries (1996–2008)
- 2002 National Fisheries Research and Development Institute
  - Ministry for Food, Agriculture, Forestry & Fisheries (2008–2013)
  - Ministry of Oceans and Fisheries (2013–)

Organization



8 Institutes and 7 Centers (271 / 533)

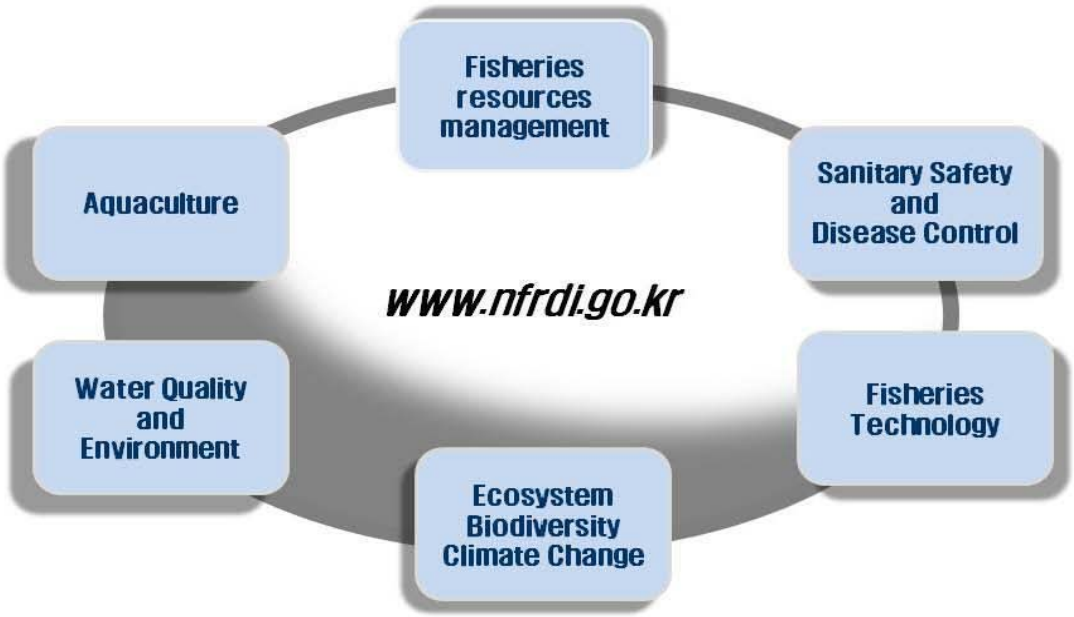
Human Resources



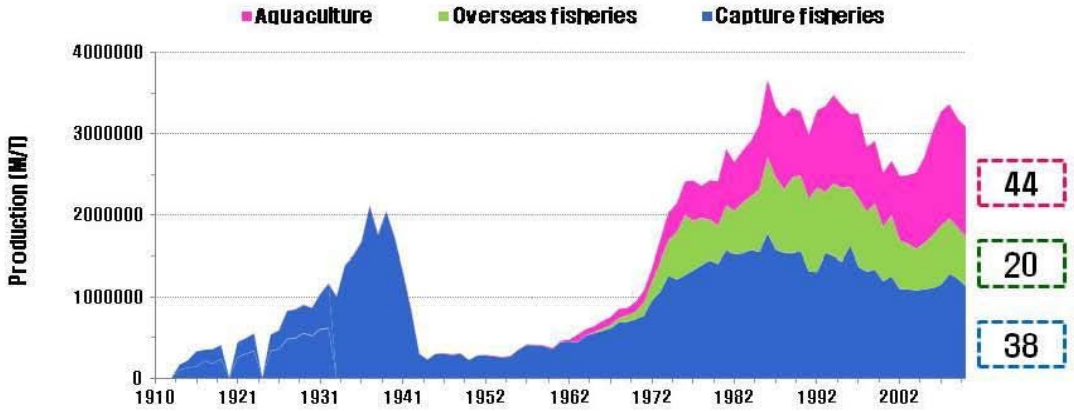
Staff

	Researchers	Administrative staff	Crews	Technical staff
Headquarters	85	64	52	52
Branches	186	50	43	43
Total	**271**	**114**	**95**	**95**

What We Do



Trends In Fisheries Production



Capture	98.1	85.1	60.9	51.6	44.8	41.2
Overseas		4.3	22.3	23.5	26.3	21.9
Aquaculture	1.9	10.6	16.8	25.0	28.8	36.9

A New Challenge : Fisheries ODA



2008–2011 Technology Transfer for Shellfish Culture in Tunisia

2009–2010 Sea-farming project in Senegal

2008–2015 Shrimp farming project in Algeria

March, 2013 Development of NFRDI Plan for Fisheries ODA Project – Algeria and Myanmar

Technology Transfer for Shellfish Culture in Tunisia

- July 2007 — Request from the Tunisian government
- September 2007 — Feasibility Study
- 2008–2011 (3 years) — Oyster and mussel-farming technology

artificial seed production, phytoplankton production, longline culture

- Management and technical training (4 for 23 days/ 6 for 4 months)
- Dispatch of Korean Expert (18 for 1.6 years)
- Farm facilities And Equipment

Funded by KOICA (Korea International Cooperation Agency)

Sea-farming Project in Senegal

Feasibility study including field survey

- Farming species
- Farming sites
- Research institute



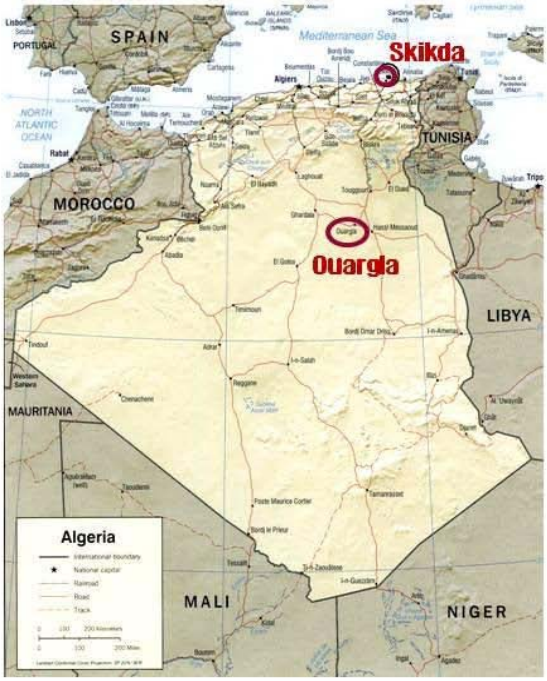






Funded by KOICA (Korea International Cooperation Agency)

Shrimp Farming Project in Algeria



<Skikda project>

- 2008-2011
- 2.3 Million US$
- Kuruma Shrimp, *Marsupenaeus japonicus*
- Shrimp hatchery and farming facilities



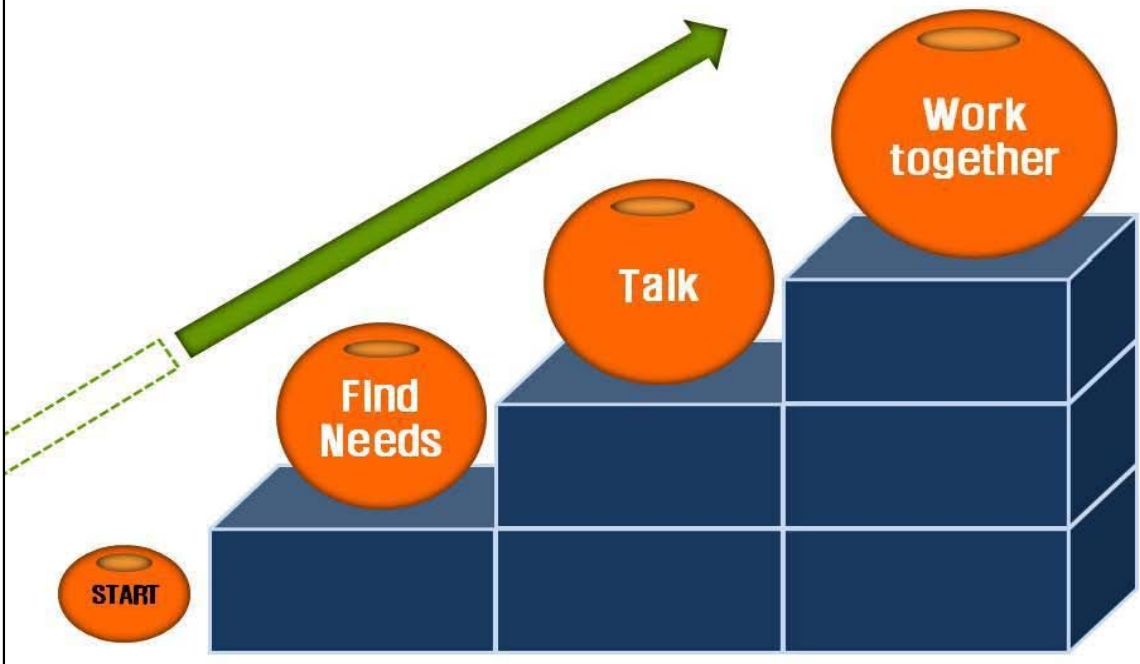


<Ouargla project>

- 2012~2015
- 6 Million US$
- Whiteleg shrimp, *Litopenaeus vannamei*
- Shrimp farming facilities

Funded by KOICA (Korea International Cooperation Agency)

Fisheries Cooperation with Pacific Island Countries




Thank you very much
NFRDI
National Fisheries Research & Development Institute
www. nfrdi.go.kr

A Proposal of Cooperation in South Pacific Ocean using KMA Meteorological System

Sung Hyup You (Deputy Director, KMA, Korea)

Abstracts

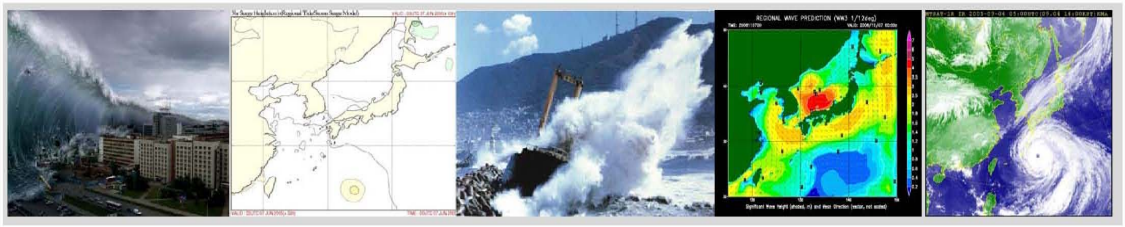
Until now, the marine meteorology observation networks have been rested on the fact that almost all anchored marine observation equipment has been deployed very close to the coastlines of the Peninsula. However, it becomes financially feasible to acquire various observations of the vast ocean areas when the current observation equipment using fixed buoys is replaced by an array of mobile observing platforms.

Since 1992, the KMA has operated numerical ocean wave prediction system. At present, KMA has operated the high resolution global, regional and coastal ocean forecasting system using 3rd supercomputer of KMA. The wave model predicts 72(regional)-252(global) hours wave patterns at 00 UTC and 12 UTC every day. The operational regional and coastal storm surge/tide model area covers northwestern Pacific Ocean and the horizontal grid intervals are also 8km and 1km, respectively. From July, 2006 the storm surge model have been applied to formal forecasting model in the KMA. In the near future, the KMA will develop global operational ocean forecasting system, so called Korea Operational Ocean Forecast System (KOOFS).

In particular, various information dissemination systems can deliver the marine weather information, such as storm surge, tsunami, oil pollution, or radioactivity readings. Currently, one of the most commonly used information dissemination systems is a web-based marine weather information system thanks to the development in computers and smart phones.

Through international cooperation activities, the KMA has a plan to provide marine prediction data to the disaster-vulnerable countries in Southeast Asia, Africa and Pacific Islands, while transferring the know-how on advanced maritime prediction technologies to build the infrastructure that will contribute to the welfare of the international society.

A Proposal of Cooperation in south Pacific Ocean using KMA meteorological System

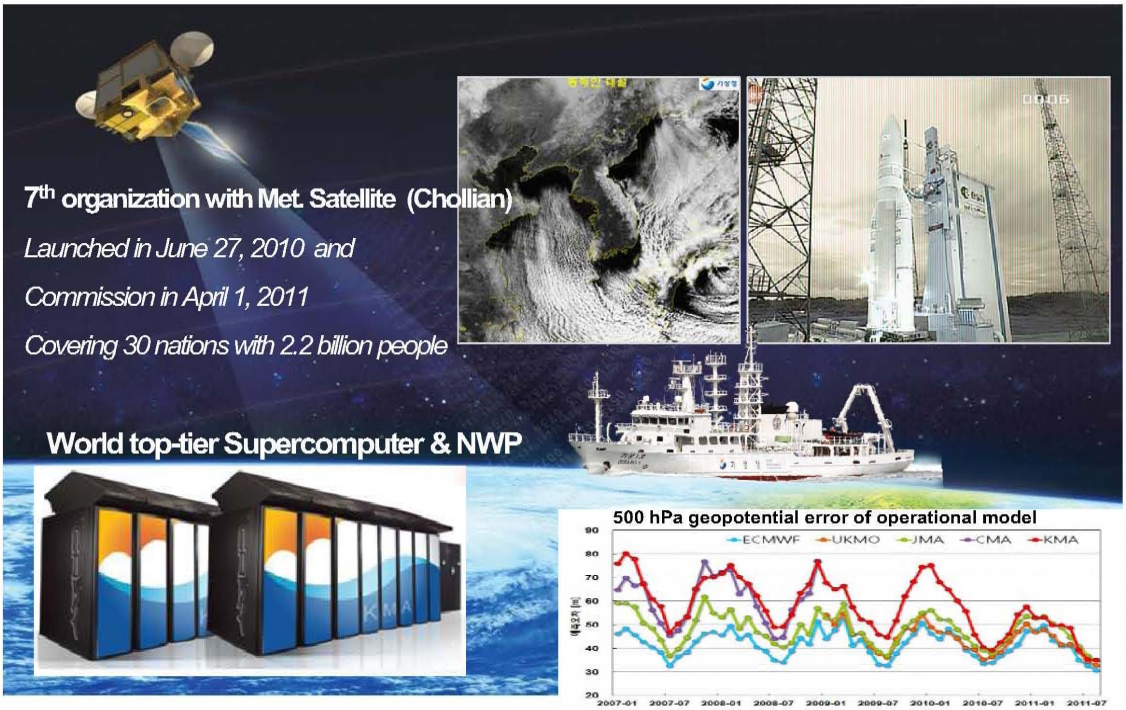


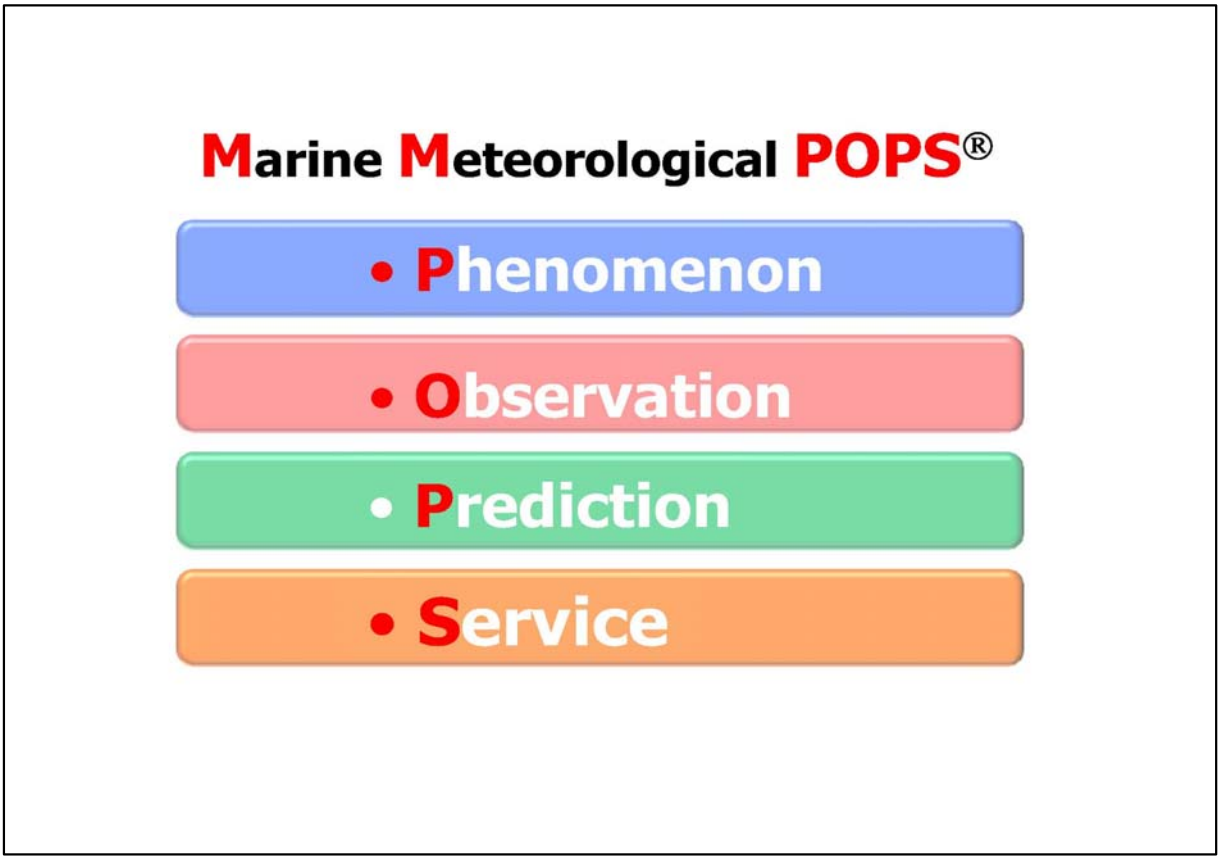
Sung Hyup YOU

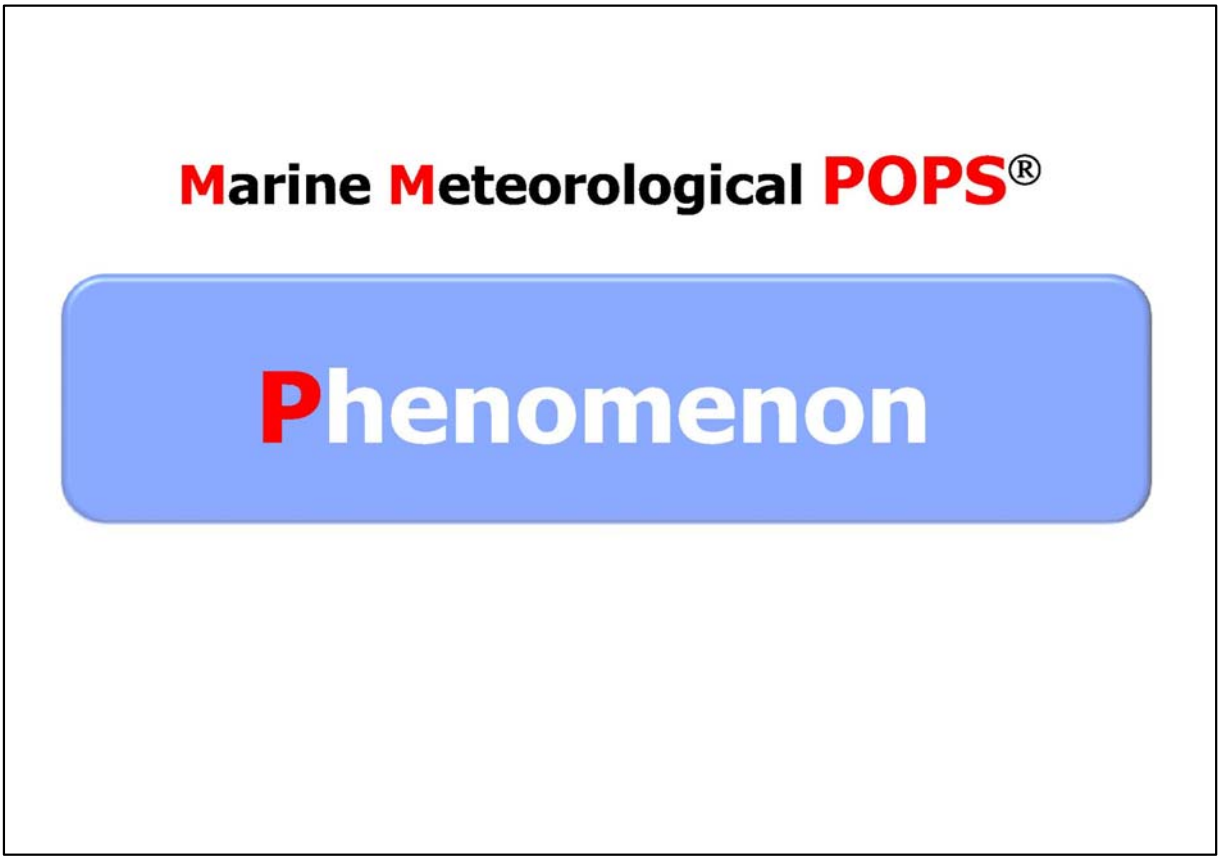
Marine Meteorology Division

KMA

Emerging as a contributor to the world



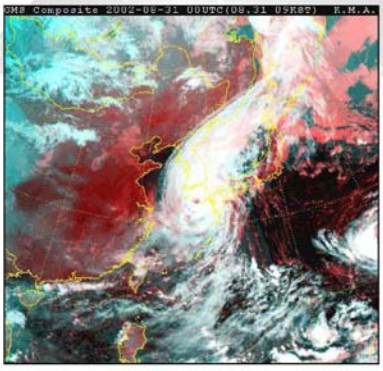

Marine Meteorological POPS®
• Phenomenon
• Observation
• Prediction
• Service


Marine Meteorological POPS®
Phenomenon

Major Meteorological disasters in Korea

Accumulated Damage (2001 ~ 2010)

Disasters	Fatalities	Property Damage(BW)
Typhoon	418	10,245
Heavy Rain	236	4,575
Heavy Snow	14	1,319
Strong Wind	12	39



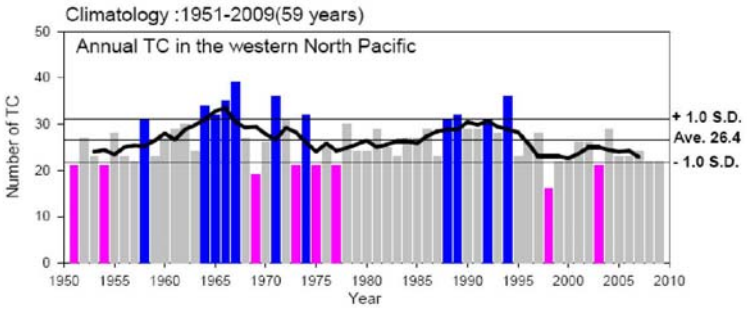


Occurrence Frequency of Typhoon

1951-2011

Case \ Month	1	2	3	4	5	6	7	8	9	10	11	12	total
A	25	13	23	44	65	105	232	340	303	225	148	70	1593
K	0	0	0	0	2	16	55	70	46	5	0	0	194

A : Typhoon occurred in Northwestern Pacific Ocean
K : Typhoon effected on the Korean Peninsula



Typhoon Damages in Korea



Marine Meteorological POPS®

Observation

Marine Observations Network

Observation Network

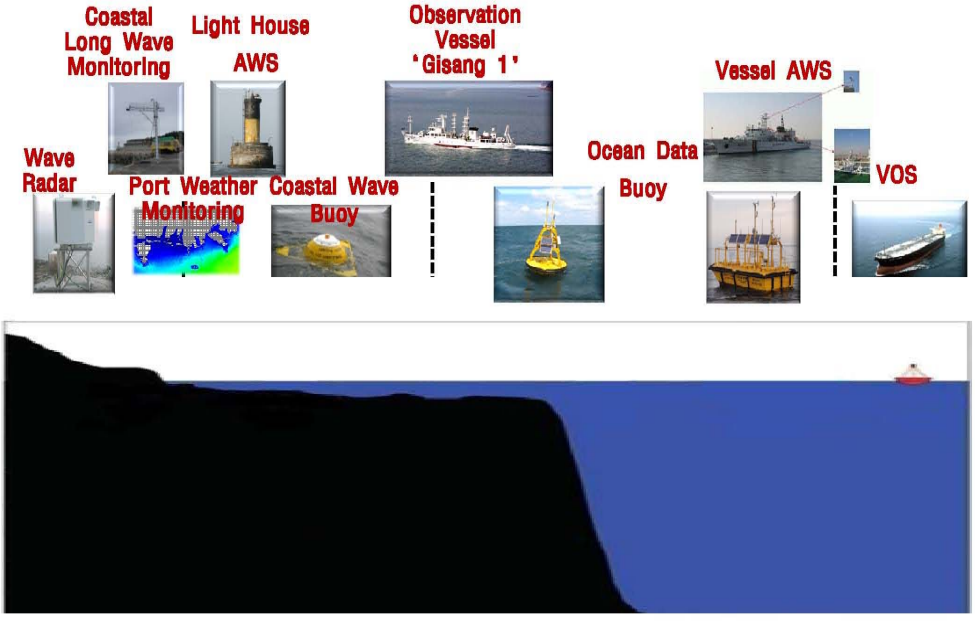
- Ocean Data Buoys : 10
- Coastal Wave Buoys : 27
- Long Wave Monitoring : 15
- Wave Radars : 6
- Ports Weather Station : 2
- Lighthouse AWS : 9
- Vessel AWS : 3
- Marine Obs. Station : 1

Observation Vessel (500 tons)

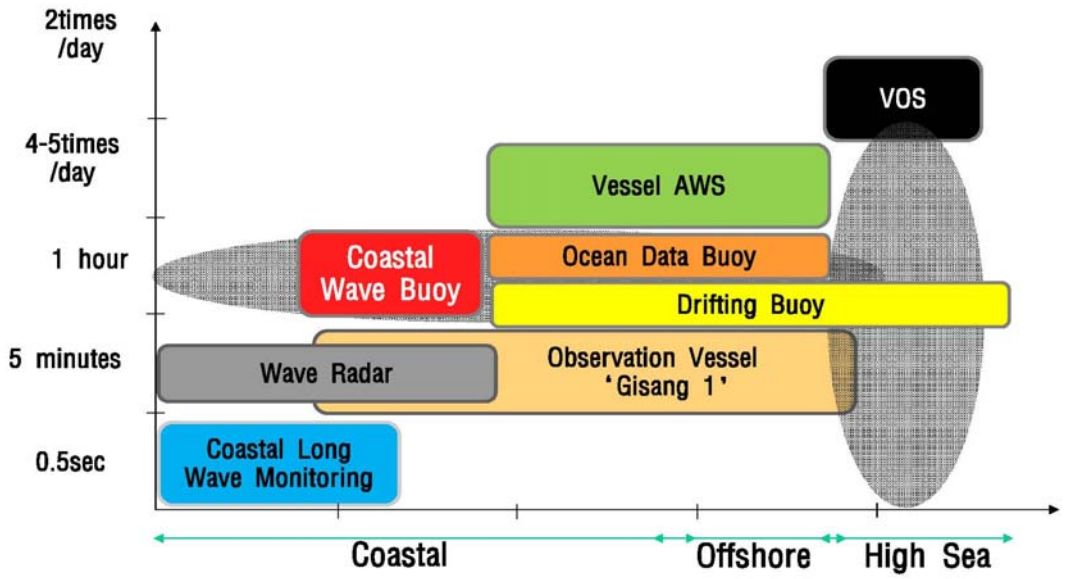




Marine Observations Network(Spatial)



Marine Observations Network(Temporal)



Coastal Long Wave Monitoring System (Coastal)

- ❖ Swell, Abnormal Wave monitoring (18 stations)
- ❖ Application for Tsunami Observation

Long, Abnormal wave & Swell

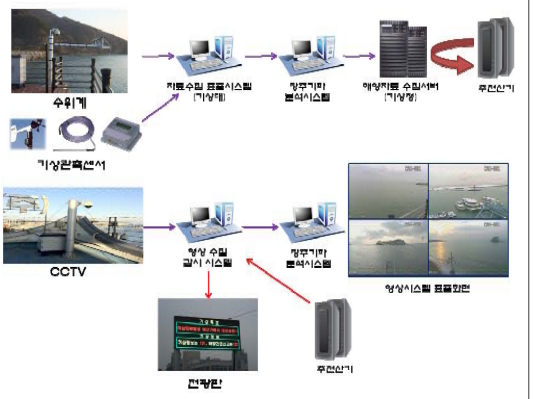


Freak Wave : 2007.3.31. 01:00, West Sea of Korea



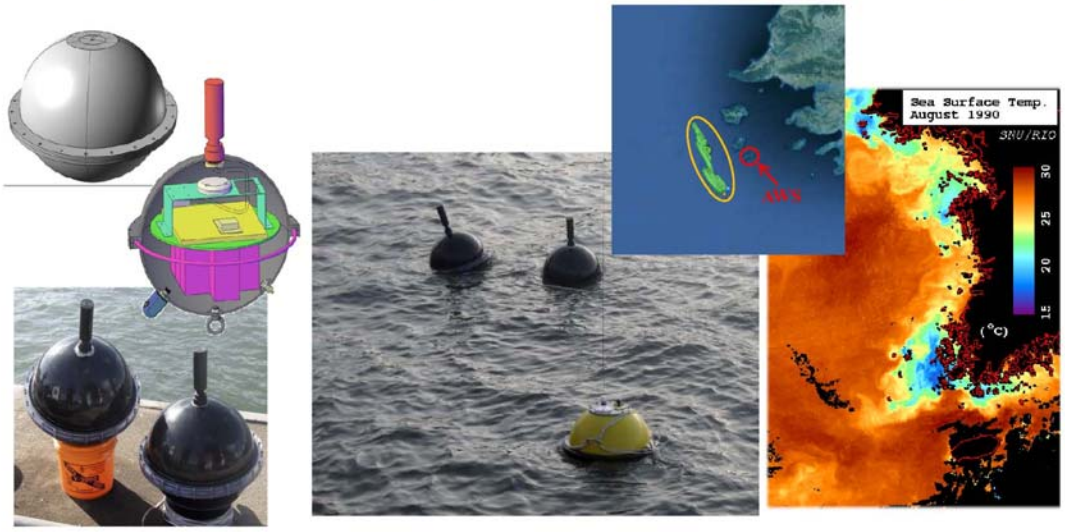
Swell : 2009.1.10. East Sea of Korea

Coastal Long Wave Monitoring System



Drifting Buoy (Offshore)

- Lagrangian observation
- GPS, Satellite Communication
- Observation : Position, Temperature, Salinity, Pressure, Wind, Wave



Vessel AWS (High Seas)

- AWS on Vessel of Government and Passenger Ship



Marine Meteorology POPS®

Prediction

Super Computer

1st Supercomputer

NEC SX-5/28M2
1999.12 ~ 2005.11

Theoretical performance
0.2 TFlops



×90

2nd Supercomputer

CRAY X1E 1024/MSP
2005.12 ~ 2010.11

Theoretical performance
18.5 TFlops



×41

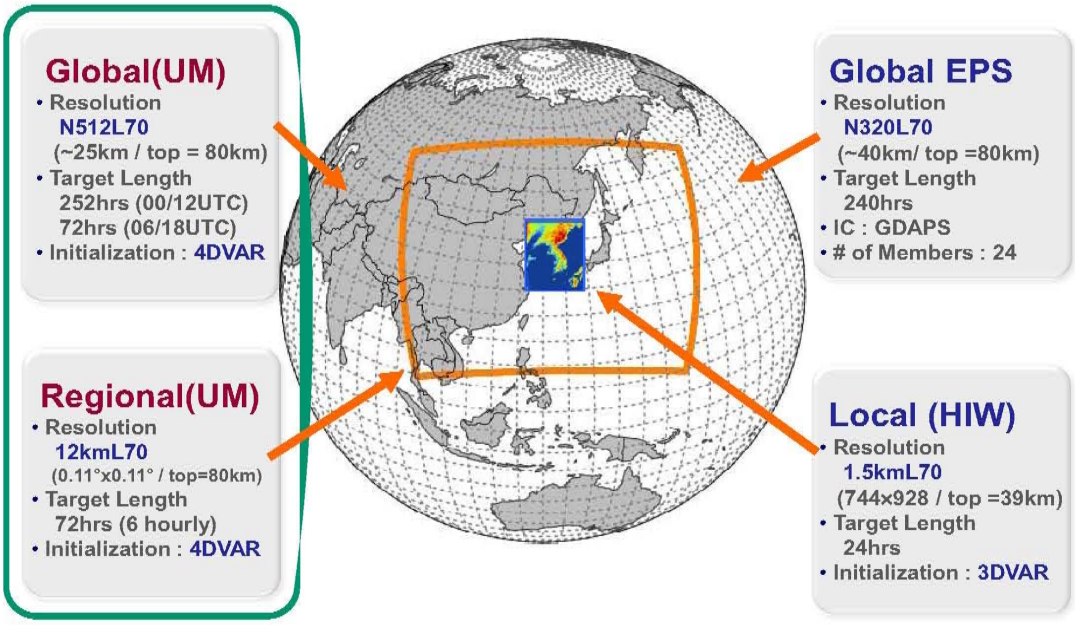
3rd Supercomputer

CRAY XE6 90,240 cores
2010.12 ~

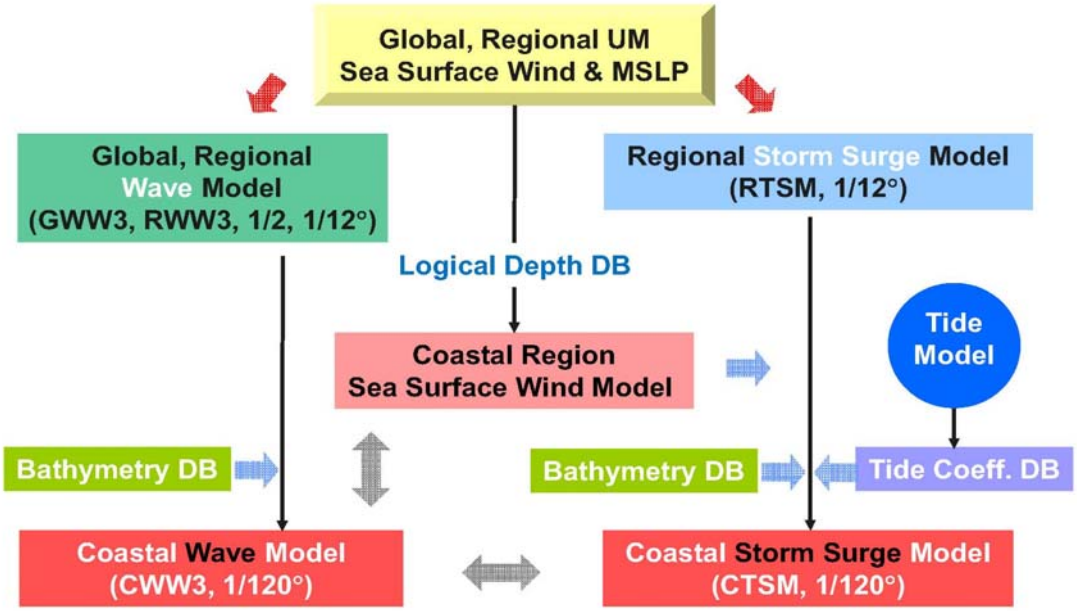
Theoretical performance
758 TFlops



NWP model based on Unified Model (UM)



Wave/Storm Surges Forecasting System

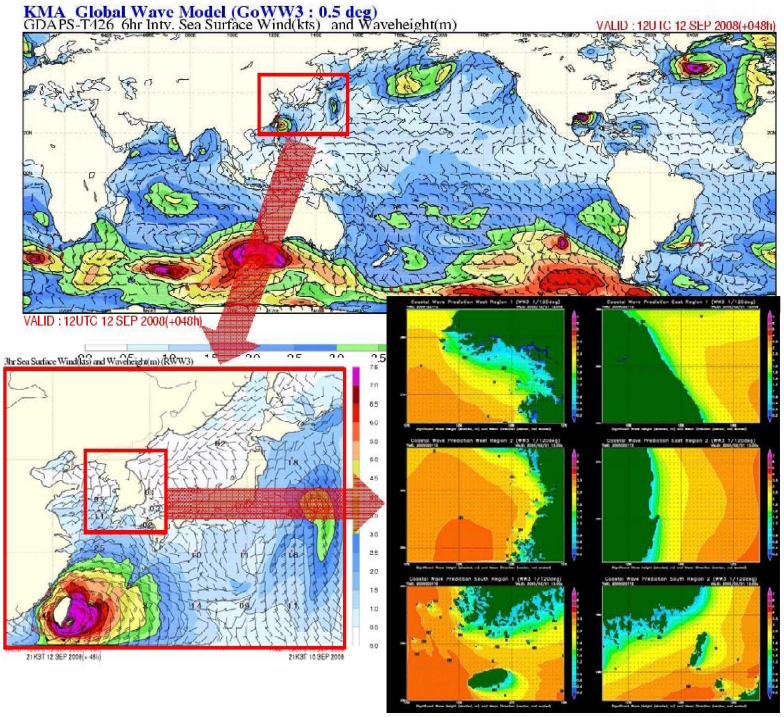


Operational Wind Wave Prediction Models

Global
- 60Km (1/2°)
- 252 hour forecast twice/day

Regional
- 8Km (1/12°)
- 72 hour forecast twice/day

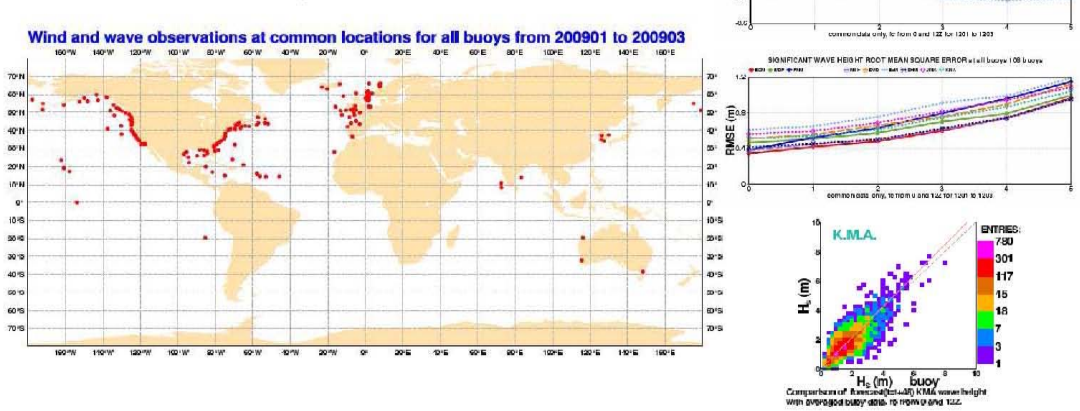
Coastal
- 1km (1/120°)
- 24 hour forecast twice/day
- 6 coastal domains

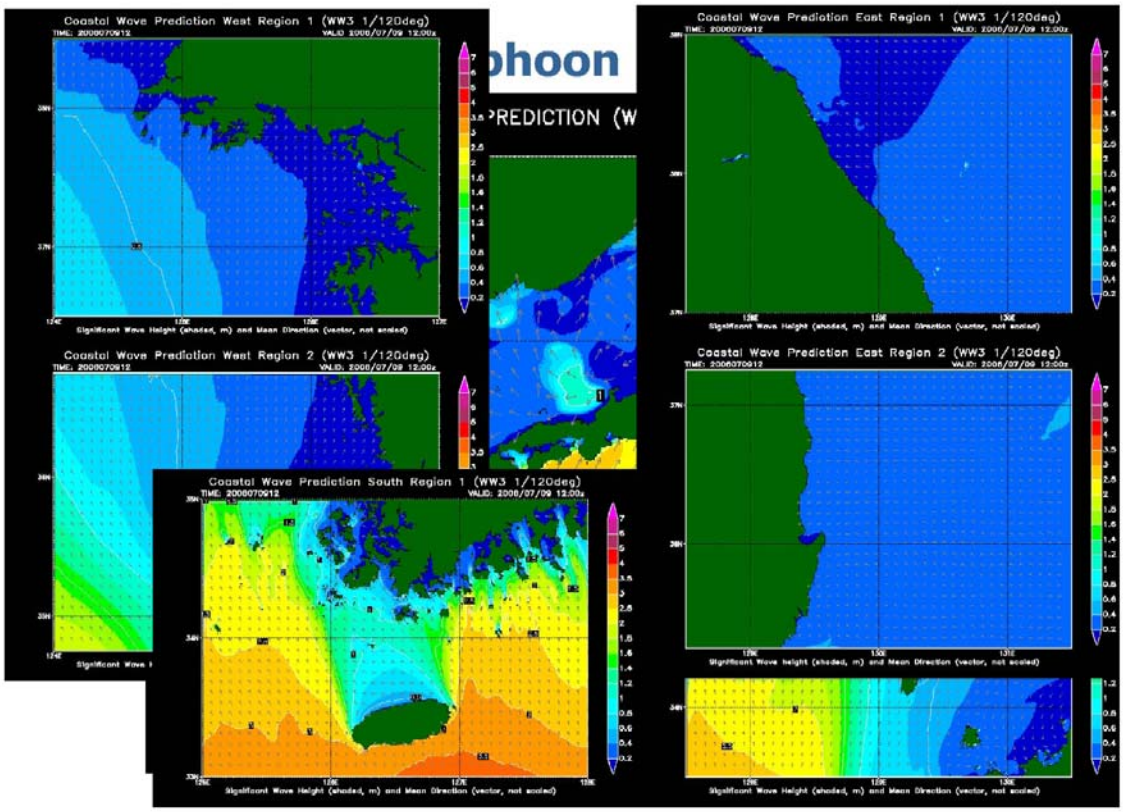


Intercomparison of Operational Wind Wave

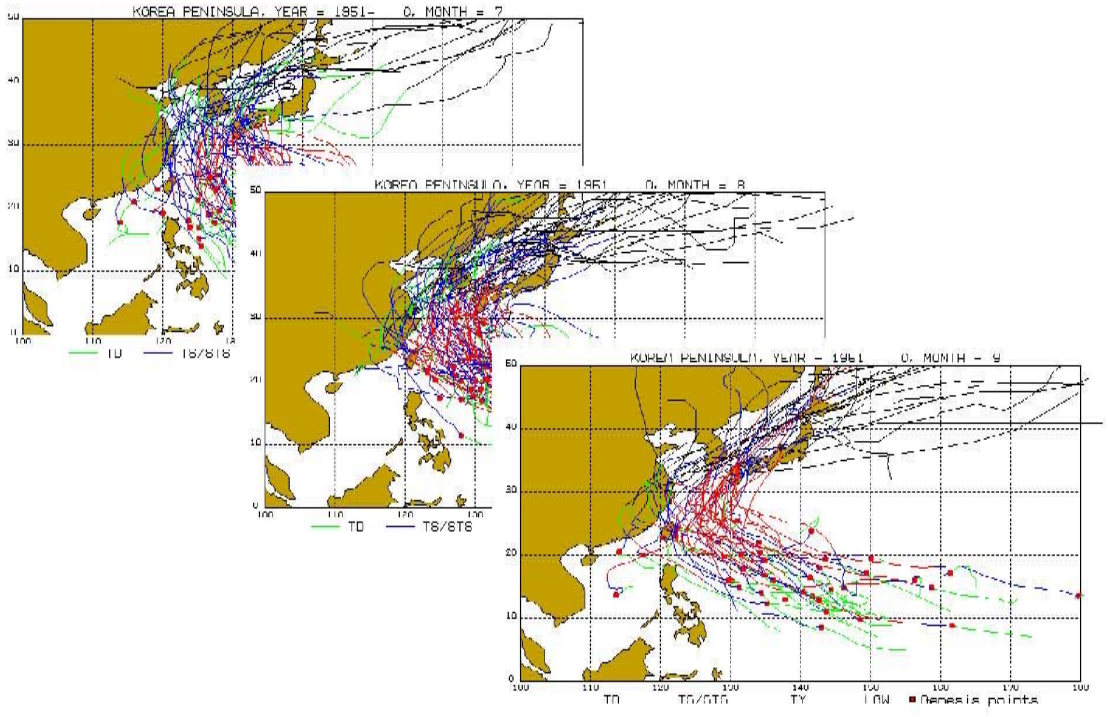
Intercomparison of operational wave forecasting systems against buoy data: time series of statistics data from ECMWF, MetOffice, FNMOC, NCEP, MeteoFrance, DWD, BoM, SHOM, JMA and KMA

Jean-Raymond Bidlot,
European Centre for Medium-range Weather Forecasts,
jean.bidlot@ecmwf.int

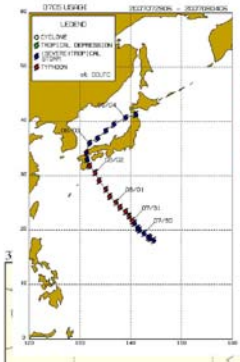




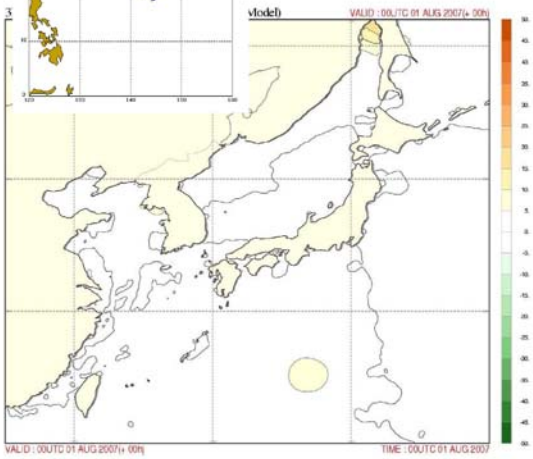
Typhoon Tracks (Jul., Aug., Sep.)

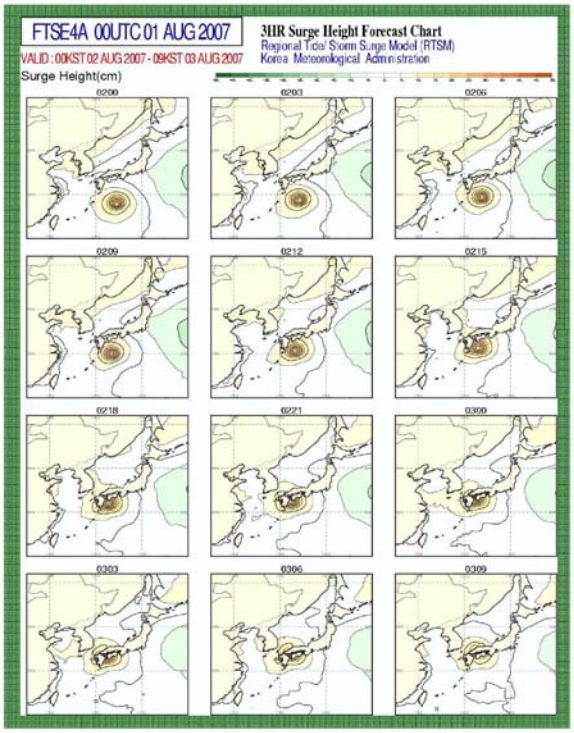


Storm Surges Forecasting



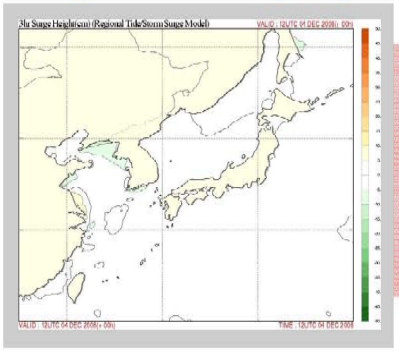
Typhoon
USAGI (2007)





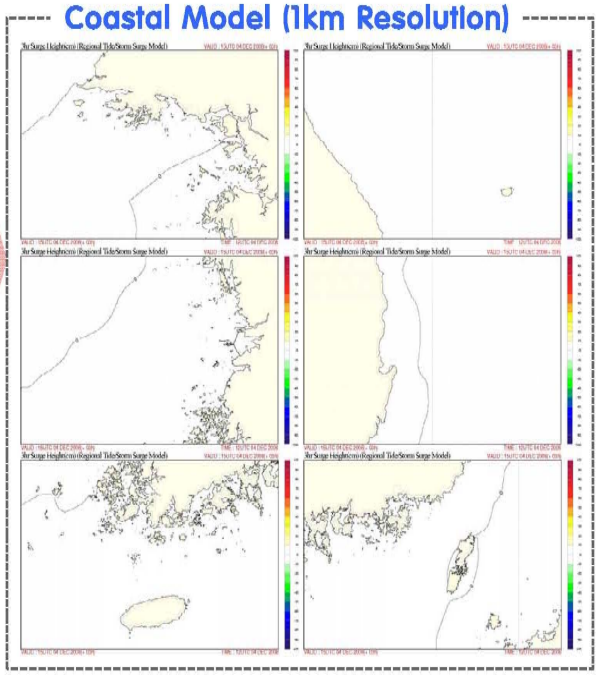
Nesting Coastal Storm surges Model

Regional Model (8km)

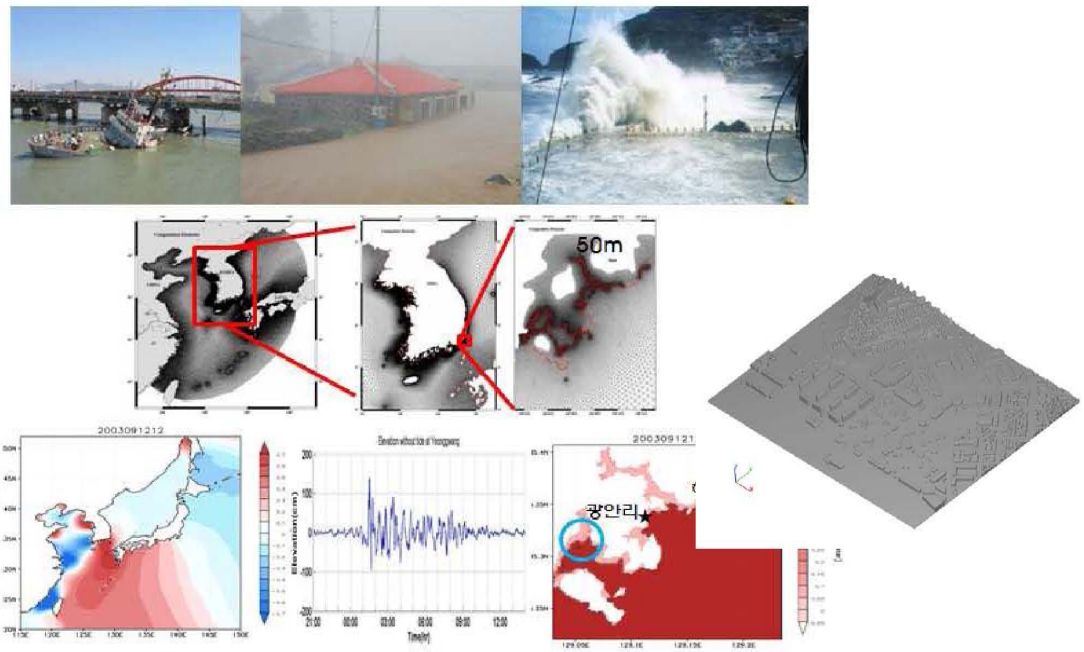


Boundary Condition

Coastal Model (1km Resolution)



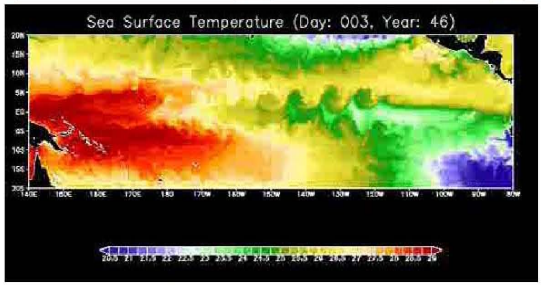
Coastal Inundation Prediction System(In Progres)

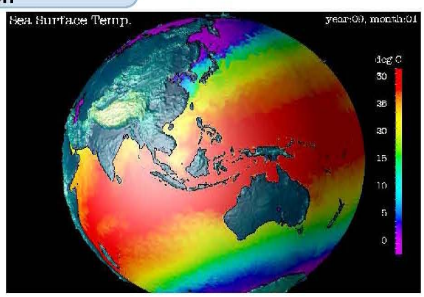


Development of KOOFS

KOOFS : Korea Operational Ocean Forecast System

2011~2013	2014~2016	2017~2019
Phase 1 R&D	Phase 2 Application	Phase 3 Operation
• Development of ocean model & DA method • Real-time data collection, QA/QC system	• Application of ocean forecast model • Verification system • Atmosphere-Ocean coupled model	• Operation of ocean forecast system • System upgrade • Application to seasonal to climate prediction

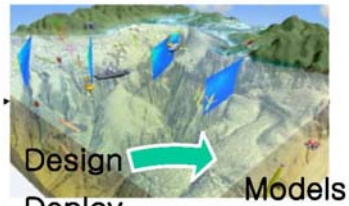


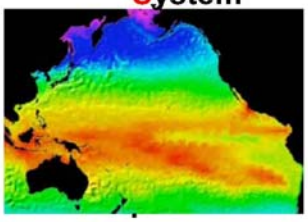


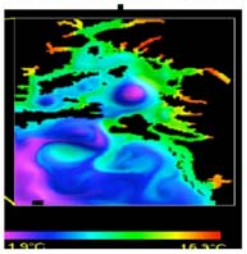
Development of KOOFS

KOOFS : Korea Operational Ocean Forecast System





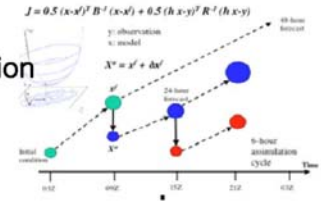




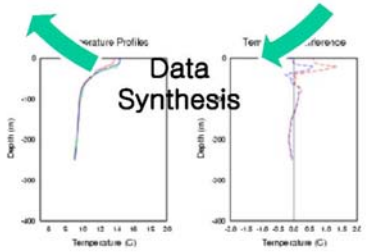
Real-time Ocean Data processing and Modeling

Ocean Monitoring

Data Assimilation



Data Synthesis



Cooperated with

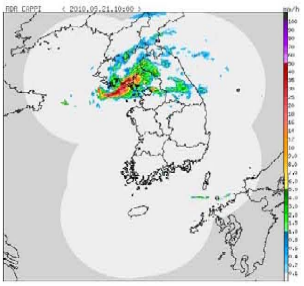
Met Office

Mercator Ocean

Application of KOOFS

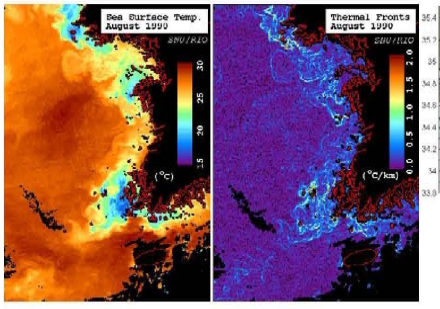
❖ Short/Mid range NWP and seasonal to climate prediction
- SST and mixed layer structure in fine-resolution especially in the Yellow Sea
- 3-d T/S/current structure in the ocean

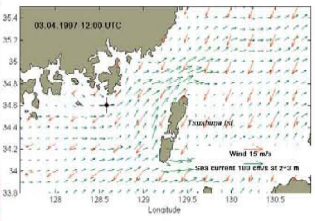
❖ Wave, storm Surge, typhoon prediction
- ocean-wind wave-storm surge coupling
- SST and mixed layer structure in the path of typhoon



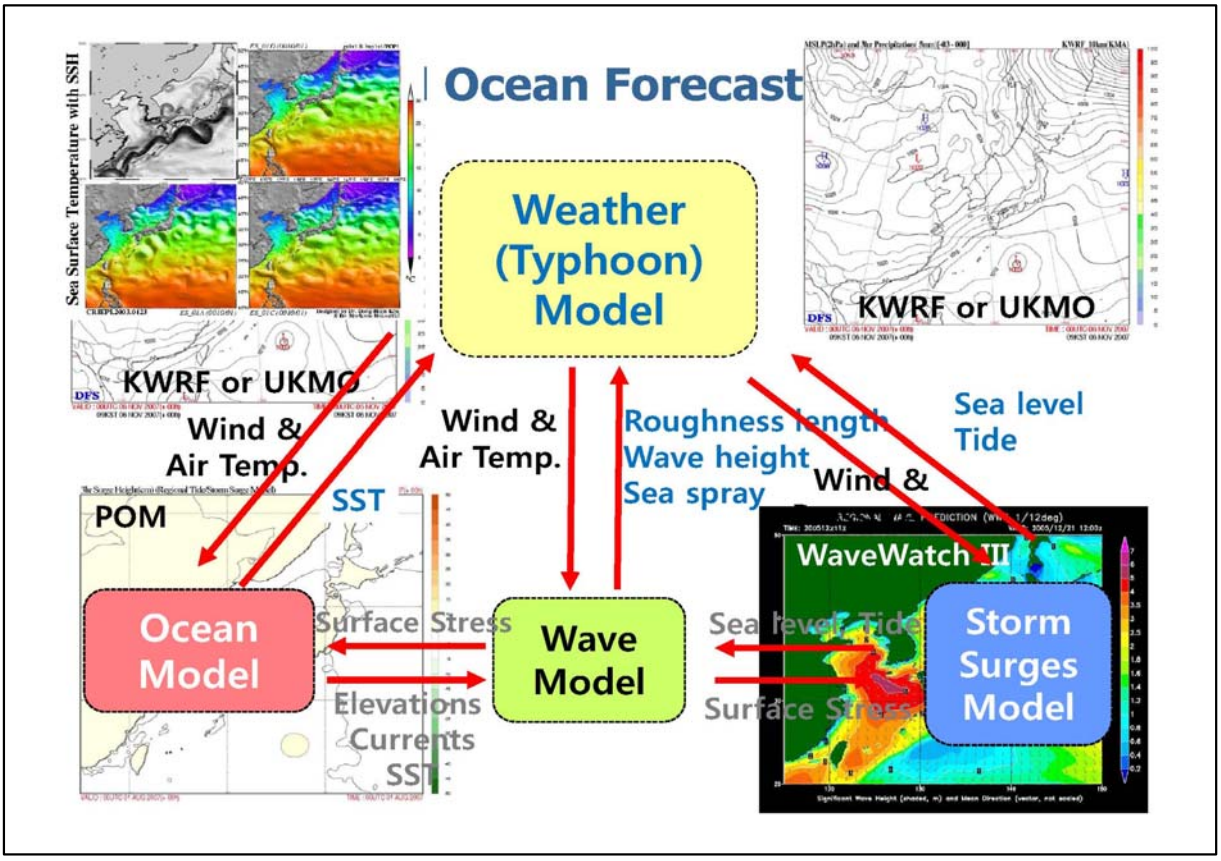
❖ Rescue, fishery, ocean development and preservation
- Oil spill prediction
- Diluted water extension, red tide

❖ Understanding of air-sea interaction
- Small scale variation of SST by tidal mixing
- Sea Fog prediction









Marine Meteorology POPS®

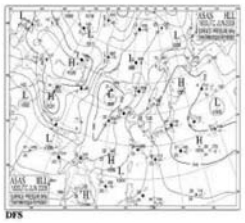
Service

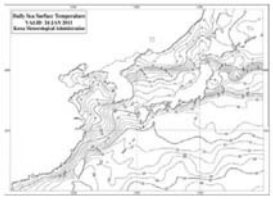
Weather FAX (We-FAX)

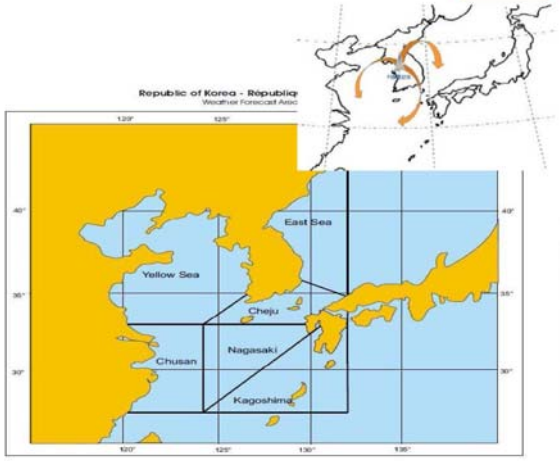


Specification	Times	Contents
21 types	63	Observation(52%) Prediction(48%)

■ East Asian Weather Chart ■ Sea Surface Temperature







■ Typhoon/Tsunami Information



■ Marine Forecast



Weather Voice Service

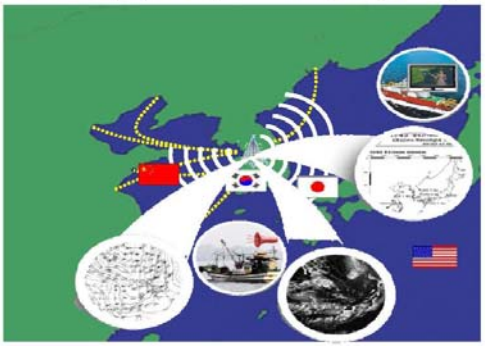
Small ship : 70 – 80% of accidents

✓Too expensive We-Fax receiver





Namsungho(09.2.13) Fungjinho(09.2.11)



Broadcasting Specification

Freq. (kHz)	Time	Antenna	Output	Format
5,857	00:00-24:00	Doublet	3kW	7K20 H3E

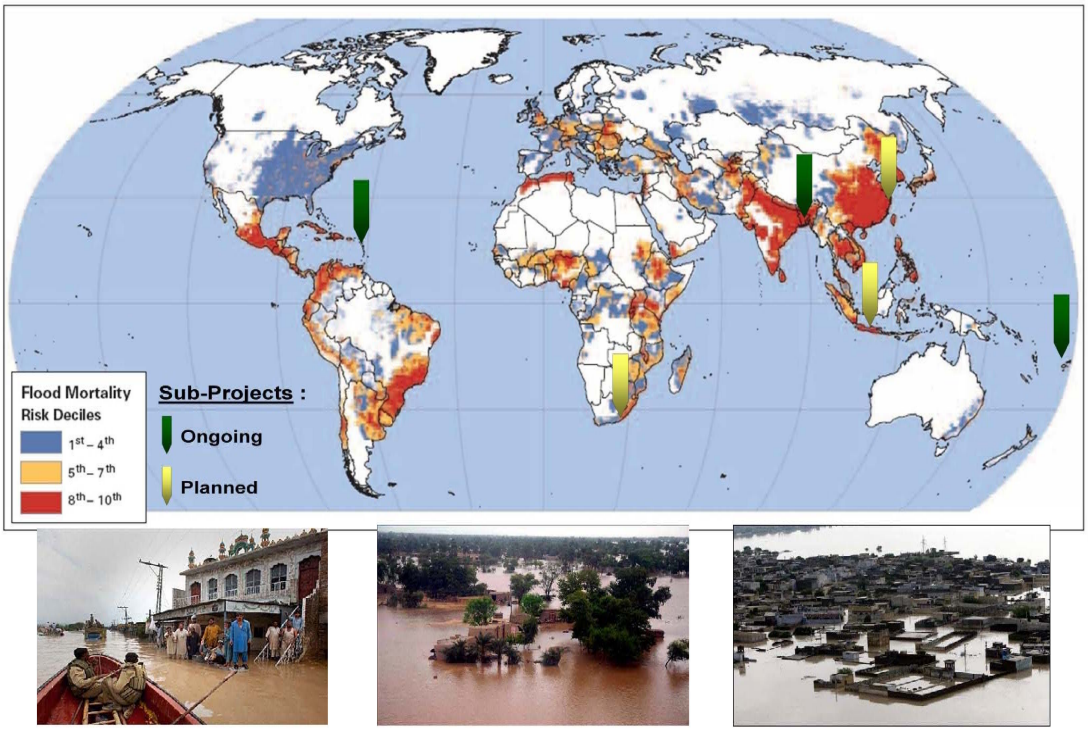
Weather Voice Service

- operation time : 24 hrs/ 7days
- contents : marine weather, warning
- frequency : 5.9 Mhz
- receiving method : SSB (Single Side band) (installed in small ship)

❑ Broadcast by 4 languages in eastern Asian region



Coastal Inundation Forecasting Demonstration Project(CIFDP)



Fiji Sub-Project kick-off :

Organization of the Users & Technical Workshop (18-21. Feb. 2013)

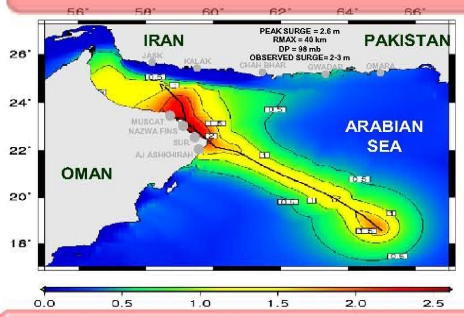
http://www.jcomm.info/CIFDP-FSW

- Key partner institutions :
  - **Fiji Meteorological Service**
  - National Stakeholders (Disaster Management, etc.)
  - RSMCs, SPC/SOPAC, SPREP, PI-GOOS
- Outcome includes:
  - Information gathering / assessment / gap analysis
  - **Definitive National Agreement (DNA)**
  - Working arrangement: National Coordination Team (NCT)



International Cooperation and Technical Assistance

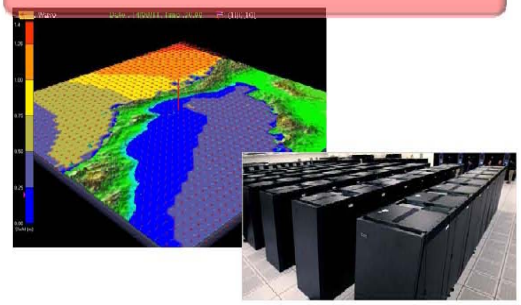
Operational Ocean Model



Marine Observation



Infrastructure Assistance



Education & Training





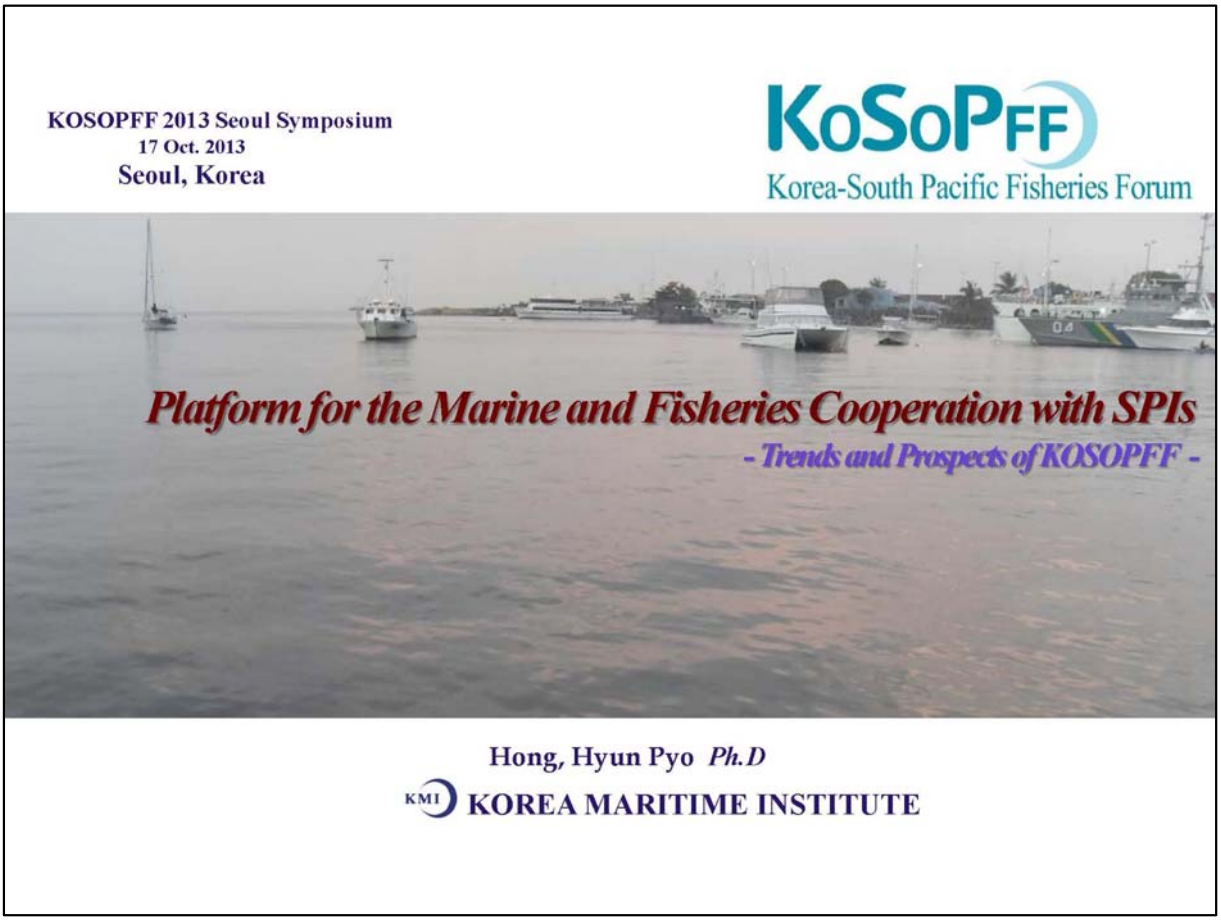
KOSOPFF Secretariat

"Platform for the Marine and Fisheries Cooperation with SPIs"

Hyun Pyo Hong (Director, KMI)

Platform for the Marine and Fisheries Cooperation with SPIs
- Trends and Prospects of KOSOPFF -

Hong, Hyun Pyo (Director, KMI)



Contents

1 Issues of South Pacific Islands
2 Korea's Approach to the South Pacific Sea
3 Briefing on KOSOPFF
4 Concluding Remarks : KOSOPFF's missions & roles

I. Issues of South Pacific Islands

High Economic Vulnerability of the South Pacific Islands (SPIs)

- *Economies with small population, high transport & communication costs, and high administrative costs etc. are highly vulnerable to external shocks*

	Land Area (sq km)	Population (mid-2008)	GDP per capita (2007,$)	GDP Growth Rate (2007)	Human Dev. Index
Cook Islands	237	15,537	10,007	0.40	0.83
FSM	701	110,443	2,183	0.10	0.72
Fiji	18,272	839,324	3,182	-3.90	0.72
Kiribati	811	97,231	656	..	0.6
Marshall Islands	181	53,236	2,851	2.00	0.71
Nauru	21	10,163	2,820	0.20	0.64
Niue	259	1,549	5,854		0.82
Palau	444	20,279	8,423	5.50	0.81
Papua New Guinea	462,840	6,473,910	1,062	6.20	0.44
Samoa	2,935	179,645	2,860	4.70	0.76
Solomon Islands	28,370	517,455	1,100	6.30	0.58
Tokelau	12	1,170	..	..	..
Tonga	650	102,724	1,874	-3.50	0.74
Tuvalu	26	9,729	1,563	3.00	0.69
Vanuatu	12,190	233,026	1,908	4.70	0.64
Total	527,949	8,665,421	..	..	..

Source : ADB(2011)

I. Issues of South Pacific Islands

◆ *Fisheries in SPIs - small share and low productivities*

- *SPI's Value-added share of fishing is just 0.6% of total economy*
- *I/O table database including 23 SPIs showed that SPI's labor productivity and capital productivity of fisheries are low*
- *Development opportunities are huge in SPIs' fishery sector*

Factor Productivities in SPIs

	Value-Added Share	Prod. Share	Labor Productivity	Capital Productivity
Agri. & Forest	4.8%	4.2%	16.0%	16.4%
Fishing	0.6%	0.7%	7.8%	12.8%
Mining	6.5%	5.6%	10.3%	28.7%
Food	2.9%	5.4%	12.7%	9.9%
Electronic	0.6%	0.7%	21.4%	11.8%
Public/Edu./Health	16.4%	11.8%	50.0%	8.8%
Total/Average	100.0%	100.0%	22.2%	18.7%

* Source : GTAP database ver. 8.0(2007)
* Note: 23 Islands' data were merged in GTAB (2007)

I. Issues of South Pacific Islands

◆ *Low Achievement of MDGs in SPIs*

- *Several goals among MDGs are still off the track in SPIs (See the below)*

	Eradicate extreme poverty/ hunger (Goal 1)	Achieve universal primary education (Goal 2)	Promote gender equality, etc (Goal 3)	Reduce Child mortality (Goal 4)	Improve material health (Goal 5)	Combat HIV/ AIDS, etc. (Goal 6)	Ensure environmental sustainability (Goal 7)	Develop global partnership for Develop. (Goal 8)
Cook Islands	Low food poverty	On track	On track	On track	On track	On track	Mostly on track	Data gaps, Mostly on track
Fiji	Low food poverty	Slightly off track	On track	Slightly off track	Slightly off track	Off track	Slightly off track	Slightly off track
Kiribati	Off track, lack of data	On track	Off track	Slightly off track	Slightly off track	Off track	Generally off track	Slightly off track
Marashall Islands	Low food poverty	On track	Mixed progress	On track	On track	Off track	Mixed progress	Mixed progress
FSM	Low food poverty	Slightly off track	Weak data	Off track	Off track	Weak data	Mostly on track	Slightly off track
Nauru	No data	Slightly off track	Slightly off track	Slightly off track	Slightly off track	No data	Generally off track	Generally off track
Niue	Low food poverty	On track	On track	On track	On track	On track	Mostly on track	Slightly off track
Palau	Mixed progress	On track	On track	On track	On track	On track	On track	On track
Papua New Guinea	Off track	Off track	Slightly off track	Off track	Off track	Off track	Generally off track	Slightly off track
Samoa	Low food poverty	On track	On track	On track	On track	On track	Mostly on track	Mostly on track
Tokelau	Low food poverty	On track	Weak data	On track	On track	On track	Weak data	Slightly off track
Solomon Islands	Low food poverty	On track	Off track	On track	On track	On track	Slightly off track	Slightly off track
Tonga	Low food poverty	On track	On track	On track	On track	On track	Mostly on track	Mostly on track
Tuvalu	Low food poverty	On track	On track	On track	On track	On track	Slightly off track	Slightly off track
Vanuatu	Low food poverty	Slightly off track	Slightly off track	Slightly off track	Slightly off track	Weak data	Mostly on track	Slightly off track

Source : UNDP Pacific centre

I. Issues of South Pacific Islands

◆ *Never-ending issues of over-catching in the Pacific Rim*

- *SPIs continue to achieve greater returns from the tuna resources in their EEZs.*
- *'The Pacific Islands Forum Fisheries Agency' has played a critical role in coordinating the activities of the SPIs. Without FFA's efforts, tuna could have been long over-exploited because of irreconcilable differences with development interests of SPIs themselves as well as the Distant Water Fishing Nations (DWFNs).*
- *In addition, 'the Western and Central Pacific Fisheries Commission (WCPFC)' as a regional fisheries management organization (RMFO) was established to manage the tuna fisheries through its entire migratory range in order to ensure its sustainability within the zones of the Pacific Island countries and the adjoining areas of High Seas level*
- *Recently, SPC recommended that big-eye fishing effort should be reduced by at least 32% from average levels of 2006-2009 for its long-term sustainability (2012)*
  - ✓ *Limiting yellow fin fishing effort in western equatorial Pacific to current levels*
  - ✓ *Considering limits on Skipjack fishing to keep a healthy level*

I. Issues of South Pacific Islands

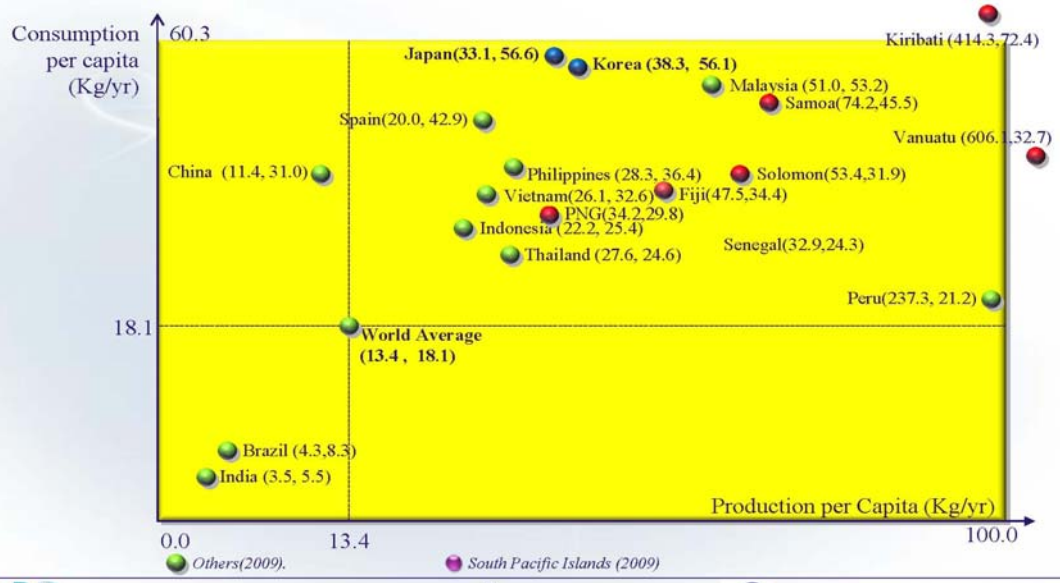
◆ *Summary of SWOT for SPIs*

Strengths	*Weakness*
-Abundant resources - Relatively homogeneous culture across SPIs - Strong solidarity among coastal islands	- Weak base of the domestic market - Vulnerable economic infrastructure - Insufficient capital - Low level of human capital
Opportunities	***Threatens***
- Preferential tariff from the EU and the US - Continuous expansion of foreign aid (ODA+FDI) - Growing interests from Int'l institute and NGOs - Tourism and int'l politics etc.	-Depletion of fishery resources in the deep-sea area - Intense competition due to globalization - Growing effects of climate change on SPIs

II. Korea's Approach to the South Pacific Sea

◆ Global Positions of Korea and SPIs in Fisheries

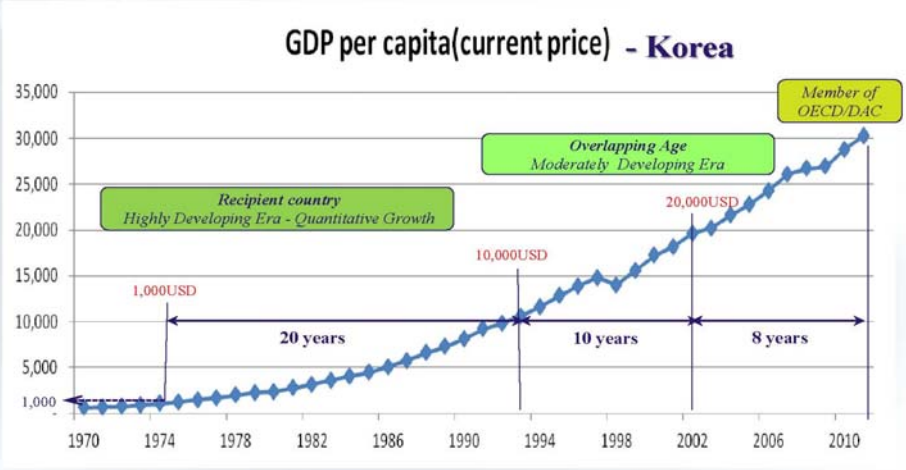
- *SPIs ranks high level of fishing production and consumption compared to other countries*



II. Korea's Approach to the South Pacific Sea

◆ Korea's growing responsibilities for MDGs

- *Korea achieved fast economic growth within 5 decades as being a member of OECD/DAC since 2010*
- *Rapidly growing share of ODA in GNI : 0.12%(2010) → 0.25%(2015)*



Source : OECD Statistics (GDP per capita)

II. Korea's Approach to the South Pacific Sea

◆ *Korea's overseas industry in the South Pacific sea*

- Key member of tuna RFMOs (WCPFC, ICCAT, IATT, IOTC)
- 4th largest tuna catcher, holding 6.7% of the global tuna catch
- Operating 154 vessels (longline 126, Pure Seine 28) in Western and Central Pacific

<Table 1> Tuna Industry in Korea(2011)

(Unit: Number of Vessels)

	Longline	Purse Seine
Pacific Ocean	126	28
(WCPO)	(126)	(28)
Atlantic Ocean	16	2
Indean Ocean	7	0
Total	149	30



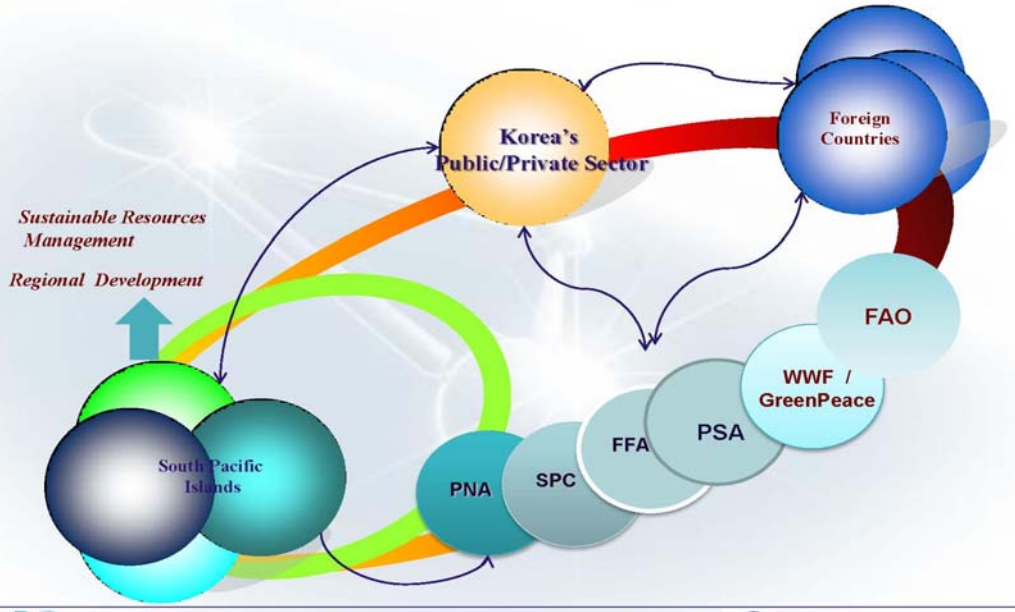
II. Korea's Approach to the South Pacific Sea

◆ *Korea's Continuous Engagement in Cooperative Relationship with SPIs*

- **The 1st Korea-Pacific Islands Foreign Ministers' Meeting was held on May 31, 2011 in Seoul**
  - At this meeting, the two sides agreed to expand trade and investment in fisheries, maritime resources, energy, and tourism for the sustainable growth of pacific islands.
  - They also agreed to regularly hold foreign minister's meetings between Korea and Pacific Islands every three years
- **MOF in Korea has been carrying out material support projects and invitation training programs for SPIs**
- **KOSOPFF(Korea-South Pacific Fisheries Forum) was established in 2011 as a platform to discuss international issues and enhance mutual understandings with SPIs**
  - 2012 Int'l Conference of KOSOPFF was also held and co-hosted by KMI and USP

II. Korea's Approach to the South Pacific Sea

◆ *Korea's public / private sector including KMI(Korea Maritime Institute) tries to build a cooperative relationship with SPIs*



III. *Briefing on KOSOPFF*

◆ *Background*

- SPIs need to promote fishing production for their own development and to strengthen the management and conservation of fish stock
- Based on the results of SWOT analysis, SPIs need to cooperate with Korea which is
  - one of major fishing countries in the water
  - qualified for its capacities and experiences with full intention of providing aid to developing countries
- In this context, Korea Maritime Institute, as a part of Korea's public sector, has been trying to strengthen mutual cooperation with various partners
  - Korea Maritime Institute (KMI)
  - Korean gov't sponsored research institute, especially focusing on maritime and fisheries sector

III. *Briefing on KOSOPFF*

◆ *Purpose*

- **"Korea-South Pacific Fisheries Forum (KOSOPFF)" aims to**
  - provide opportunity to discuss cooperative projects
  - build human networks with fisheries experts, relevant businessmen, and senior-level officials from the coastal states in the South Pacific
  - contribute to make a consensus on fisheries conservation

◆ *Expected Results*

- **Opportunities for fisheries cooperative projects will be created**
- **Strategies for the non-governmental sector will be formulated**
- **Fisheries issues of the South Pacific will be discussed and opinions will be collected**
- **Experts network will be built between Korea and SPIs**

III. *Briefing on KOSOPFF*

◆ *History of KOSOPFF*

- KOSOPFF 2011 Seoul Symposium *(Inaugural meeting)*

- Theme: ***Exploration of Ways to Promote Cooperation in the Fisheries Industry between Korea and Island Countries in the South Pacific***
- Co-organizers : Korea Maritime Institute & University of South Pacific
- Date and venue: Dec. 2011 (Seoul, Korea)
- Participants: 112 people including international organizations including FAO, FFA and UNEP, officials engaged in the fisheries industries of island countries in the South Pacific including the Solomon Islands, PNG and Fiji, foreign students, and foreign fisheries experts

- KOSOPFF 2012 Fiji Symposium

- Theme: ***Biodiversity and the Preservation of Fisheries Resources in the South Pacific Ocean***
- Co-organizers : Korea Maritime Institute &University of South Pacific
- Date and venue: Oct. 2012 (Suva, Fiji)
- Participants: 205 people including officials from international organizations including the FFA , SPC, Green Peace, WWF, PNA, and USP

III. *Briefing on KOSOPFF*

◆ *KOSOPFF 2013 Seoul Symposium*

- Theme: ***the governance and conservation measures for the responsible fisheries in the South Pacific Ocean***
- Co-organizers : Korea Maritime Institute &University of South Pacific
- Date and venue: 17 Oct 2013 (Seoul, Korea)
- Presentation
  - Keynote Speech : *"Governance and Monitoring System for Ecosystem Based Fisheries Management" Wattage, P. (Professor, Univ. of Portsmouth, U.K.)*
  - *"The Role of Korea for the Responsible Fisheries in the South Pacific Ocean Focus on International Observer Program"*, Seok Gwan Choi, (NFRDI, Korea)
  - *"Governance and Monitoring System in the South Pacific region"*, Esaroma Ledua (Professor, USP, Fiji) & Hyun Pyo Hong (Director, KMI)
  - *"MCS Response to IUU Fishing in the Pacific Region"* , Peter Graham (Surveillance Officer, FFA)
  - *"The Development Status and Future Issues of Fisheries Sector in the South Pacific Islands"*, Patricia Jack-Jossien (Vessel Day Scheme Manager, PNA)
  - *"A Proposal of Cooperation in South Pacific Ocean using KMA Meteorological System"* ,Sung Hyup You (Deputy Director, KMA, Korea)
  - *"Possible Fisheries Cooperation with Pacific Island Countries with respect to Resource Management and Aquaculture Development"*, Jeong Sook Park (NFRDI, Korea)
- Panel Discussions

IV. Concluding Remarks : *Platform for Collaborations*

◆ *KOSOPFF's missions*



IV. Concluding Remarks : *Platform for Collaborations*

◆ *Roles of KOSOPFF*

Discussing and resolving the concepts of conservation for the marine living resources in the Pacific water through the platform - KOSOPFF

Developing ideas of increasing employment, income growth and welfare in Fisheries and Fishing Village

Enlarging the platform to spread the concepts and the ideas as above

IV. Concluding Remarks : *Platform for Collaborations*

◆ *Miscellaneous plans*

- Enlarging the network with regional organizations such as SPC, FFA, PNA, USP, etc.
  - KMI signed the MOU with USP in 2012 in order to implement the missions & roles of KOSOPFF
- Establishing a research facility in Suva, Fiji to understand local issues at first hand and to find solutions in the South Pacific
- Planning to provide co-research opportunities for those who have an interest on SPIs' fisheries issues
- Suggesting collaboration for the int'l conference if available


Thank You !



MeMo...



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