“Coastal ecosystem disturbances, fish and shellfish poisoning and their socio-economic implications”
Noumea – Secretariat of the Pacific Community – 18-20 November 2014

PACE-NET PLUS
PACIFIC-EUROPE NETWORK FOR SCIENCE, TECHNOLOGY AND INNOVATION

Main outcomes

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Characteristics

Objectives
- Identification of innovation niches
- Recommendations to policy makers
- Joint “projects”

Issues
- Marine toxins
- The effects of climate change and environmental disturbances
- Health
- Societal, cultural and economic aspects

Participants :
40 experts : researchers, policy makers, private sectors, regional organisations, donors… from health and marine ressources
- Europe : 5 (4 different countries)
- Pacific OCTs : 8
- Pacific ACPs : 14 (8 different countries)
- Australia and New Zealand : 10
- Others : 3

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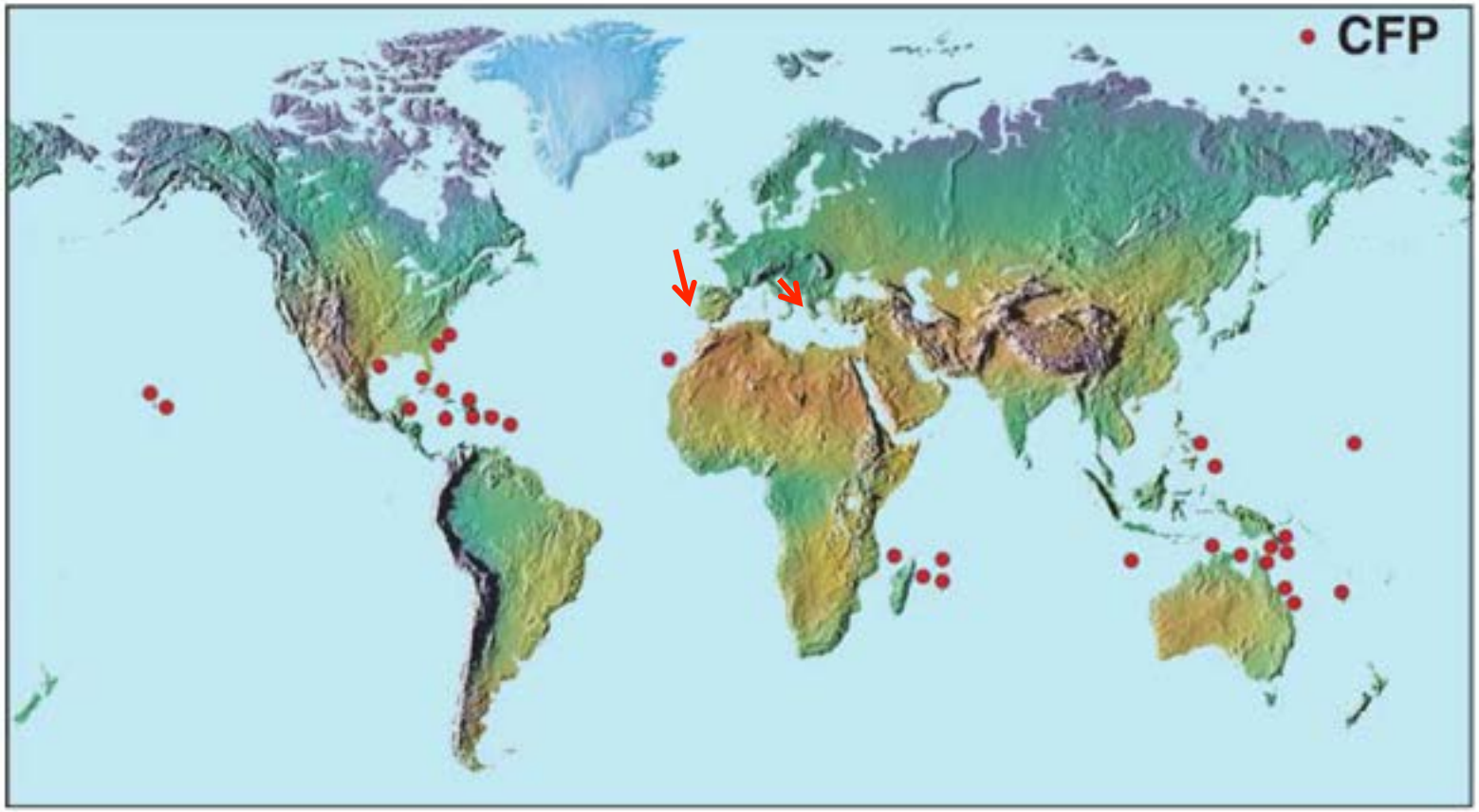
All over the world



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Problems and gaps

Data

- ability to predict when blooms will occur
- understanding of climate change forces : ocean acidification
- knowledge of species & locations affected
- capacity in research and monitoring

Origins

- Mechanisms causing toxicity
- Interactions within BHAB communities physiology, allelopathy genetic factors

Impact on human

- Impact on health, subsistence, economy not well known
- No treatment for ciguatera fish poisonning victims

Tools

- Lack of reliable detection tests
- Lack of diagnostic tools

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What works well

- Local knowledge is thought to be effective in identifying toxic species, locations and seasons
- Good general understanding of the CFP phenomenon
- Some ciguatoxins already identified
- Sampling protocols
- Some trainings on monitoring have already taken place

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Research priorities

- Quantify/collecte traditional knowledge using science to validate observations
- Analyse relationship between physical environment, marine ecosystem parameters, fish toxicity and health impacts
- Fate of toxins in fish and shellfish : identifying toxins involved
- Standardized sampling protocols
- Develop indicators/predictors of risk
- Epidemiology, clinical aspects & reporting
- Remanence of CFP symptoms
- Curative treatments

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Innovation

- Cost effective rapid detection test
- HABs monitoring of deep sea mining sites
- Mass production of toxin standards
- Sample/data bank of T cells from affected people
- Integrated meta data-web portal or similar data sharing systems
- Awareness tool for the public and resource & public health managers
- More communication between practitioners and local communities
- More synergies within countries between ministries of fisheries and health : cross disciplinary approach
- Develop a regional responsive network
- Annual report to help the decision makers

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Project ideas

- Regional review of CFP/HABs impacts
- Inventory of traditional knowledge
- Physical, biological and chemical characterization of HABs and non HABs sites
- Implementation of functional method for ciguatoxin detection in sink samples
- Pilot multidsciplinary monitoring HABs program
- Regional workshop for building capacity of PICTs fishers offices in monitoring HABs
- Monitoring HABs for small island states
- Regional center for HABs
- Regional HABs CFP data sharing project

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EU-Pacific cooperation : why ?

Global importance of the Pacific region – e.g.
- high biodiversity, opportunities for bioprospecting (e.g. for medical application)
- higher latitudes of the region could provide refugia for coral reefs, tuna supply (70% of global supply), region is an important driver of global climate patterns.

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EU-Pacific cooperation : why ?

For EU

- **Offers opportunity to and for European scientists**, resource managers and policy makers to learn from experiences and technology relating to blooms to help EU in the future
- **Offers opportunity for economic return on technology** e.g. toxin testing kits (in fish, shellfish and humans), patented techniques (e.g. precipitation of CaCO3 for reef restoration 'bio-rock') – flow of trade back to Europe
- **Safe travel and tourism** – being able to understanding where & what species are affected to provide travel warnings to European tourists
- **Ensuring seafood safety** – local testing and research capacity can protect both local and foreign (high-end European) markets : no toxic *Tridacna* in Parisian restaurants (!)
- **Bioprospecting - Potential medical benefits from Pacific organisms**. Toxins from fish and shellfish poisoning organisms may have medical applications with benefits to global community (e.g. conotoxins from cone shell as a pain medicine, prilat, cytotoxins as cancer treatments)
- **Important and strategic for EU to fund research into orphan / neglected diseases** – orphan diseases have no treatments and no economic push to develop treatments from pharmaceutical companies which will not move into this areas as too few (< 5 million) cases make research not economically viable. Request to recognize CFP as a neglected tropical disease.
- **Pacific region could act as a looking glass / natural laboratory for EU into the future** - how humanity might deal with global change (e.g. climate change, food security issues)

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EU-Pacific cooperation : why ?

For Pacific countries and territories

- **Development of drugs and vaccines for CFP** and other poisoning to increase food security, cultural continuation and quality of life in the Pacific
- **Economic opportunities** from fish and shellfish from Pacific countries to Europe : diversification of funding resources
- **Inputs from European institutions may help to find solutions : e**cosystem disturbance and HAB problem is most probably beyond scope of the capacity within the region.
- **Food safety, security and sustainability** – assistance from Europe helps to maintain food safety, security and sustainability for local/subsistence consumption and cultural continuity
- **Development of a rapid response team**, perhaps tiered at regional, national and locals levels
- **Raised visibility of Pacific** in the context of the global community

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Thank you

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