Pilot Inventory of Traditional Knowledge of Ciguatera Fish Poisoning and its Treatment in the Pacific Island Region; Fiji

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PACE-NET+ Bi-Regional Dialogue Platform

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Objectives:

- To explore traditional knowledge related to the identification and quantification of the;
  - species of ciguatoxic fish
  - ciguatoxic *iqoliqoli* (reef sites) hot spots
  - seasonality of ciguatoxin occurrence
  - reporting mechanism of ciguatera fish poisoning
  - treatment of ciguatoxin

Progressive Outcomes:

- ***Species of ciguatoxic fish in Fiji***
  - 12 species - Moray eel (*gymnothorax)*, Two Sport Red Snapper (*tutjanus)*, Long-face emperor (*lethrinus)*, Rivulated snapper, Brown-Marbled Grouper (*plectropomus)*, Pick Handle Barracuda (*sphyraena)*, Leopard coral grouper, Gold spot herring, Mangrove red snapper, Black branded snapper, Russells' snapper and Long Spot Snapper.
- ***Sites and hotspots of occurrence***
  - There are localized and seasonal fish poisoning which makes certain species of fish poisoned in some iqoliqoli sites and not others and seasonality is associated with *Balolo* season.
  - *Two major hotspots; Senimuna* in Kadavu, Kabara reef in Lau, where all fish are apparently poisonous throughout the year.
- ***Seasonality of ciguatoxin***
  - Seasonality of ciguatoxin appears to be associated with the **Balolo* season (Nereirs – edible sea worm); October and December.
- ***Reporting mechanism***
  - Unreported cases are prevalent and that very few visit the hospital/health centres
- ***Traditional herbal treatment of ciguatoxin***
  - More than six sets of effective traditional herbal medicine were identified for the treatment of ciguatoxin.
    - Some may be effective than others in the rate at which recovery from ciguatoxin occurred

Future Perspectives

- USP SRT proposal entitled *"Investigating ciguatera fish poisoning in Fiji water hotspots – traditional ecological knowledge and biological processes of occurrence and accumulation in seafood"* has been granted small amount to initiate the scientific experiments and a springboard for other funding applications.
  - *Aims at validating TEK by investigating ciguatera fish poisoning focusing on two hotspots; Senimuna and Kabara reefs by performed experiments under controlled conditions and on selected fish species to better understand the biological processes of occurrence and accumulation.*
    - *Collaborators – Masa-JICA; Nanise-Ministry of Fisheries; Dr Chinain – ILM -French Polynesia.*

- Development of a ciguatera regulatory framework in the catch, sale, consumption, reporting and monitoring of ciguatera fish poisoning cases.

- The bio-discovery of active ingredients in the six sets of traditional herbal medicine identified and the establishment of their dose response in the development of future medicine/drug will need to be further investigated.
  - *Networking: Prof. Dr Zimmermann – University Hospital Erlangen- Germany (CIGUA-CRIMSON); Dr Molgo – CEA, France.*

- A booklet based on "Traditional Knowledge" to indicate species of poisonous fish, poisonous site and traditional medicine in the treatment of ciguatera fish poisoning is to be developed and made available to communities and industries.