



**JOINT FAO/WHO FOOD STANDARDS PROGRAMME
CODEX COMMITTEE ON CONTAMINANTS IN FOODS
Eleventh Session
Rio de Janeiro, Brazil, 3 – 7 April 2017**

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Comments submitted by Fiji Islands.

Submission to FAO/WHO & Ciguatera Codex Committee on Contaminants in Food

Background

1. The Ministry of Fisheries (MF) since 2010 as part of its operation activities has been conducting ciguatera fish poisoning (CFtP) baseline survey using semi structured interview questions and has covered about 11 per cent of the total (410) traditional demarcated fishing grounds (*I Qoliqoli*).
2. The main purpose of the survey is to collect information on unreported cases of CFP that occur in coastal and maritime communities, identify the ciguatoxin hot spots and certain fish species and traditional treatment through Traditional Ecological Knowledge (TEK).
3. The European Union funded project titled "*Pilot Inventory of Traditional Knowledge of ciguatera fish poisoning and its treatment in the Pacific island region; Fiji and Papua New Guinea*" was coordinated by University of the South Pacific in 2016 and the Ministry of Fisheries was one of the core facilitator.
4. Through this project a workshop was conducted with the aim of bringing together fishers, traditional healers and ciguatoxin victims to share experiences, knowledge and discuss the way forward in addressing this fundamental issues affecting health as well as social and economic growth of Fijian people.
5. The information gathered from the workshop allow the project to make recommendations on the way forward in terms of improving scientific based information and advice hence to conduct further research on (1) algal community in identified hotspots (2) identify the macroalgae primarily responsible for providing habitat to the dinoflagellate *Gambierdiscus toxicus*, an epiphyte responsible for ciguatoxin production (3) to validate TEK and its relevance to climate change and (4) to evaluate occurrence and accumulation in seafood experimentally exposed to the toxin

Introduction

6. In Fiji, the risk surrounding ciguatera fish poisoning (CFP) is still regarded as low priority as communities are still relying on traditional knowledge for management.
7. However, with the variations and change in climatic and environmental conditions, seasonality of occurrence and locations or sites of ciguatoxic reefs known and understood through traditional knowledge may no longer be accurate and become irrelevant (Tester et al., 2009).
8. Studies have revealed that incidence of ciguatera have increased due to the rise in ocean temperature between 18°C and 33°C (Tester et al., 2014).
9. This is true for Fiji as last year (2016) alone we received two (2) reported cases and in one (1) case four (4) villagers in a maritime island died instantly after consuming sardine (*Herklotsichthys quadrimaculatus*). This is the first time sardine is reported to be toxin and killed four (4) people in one day.
10. As an island nation, Fiji heavily dependent on coastal fisheries for food and trade therefore to minimize the negative impact on the economy the Ministry of Fisheries has taken the initiative to include CFP management in the new National Fisheries Policy (NFP) which is still in its last stage of consultation.
11. CFP management is aligning to one of the policy goal focusing on food safety, improve trade and climate change. This will provide a basis for the Ministry of Fisheries to manage CFP.
12. The NFP is aligned to the overarching Fiji Islands National Development Plan, the Green Growth Framework on Sustainable Island and Ocean Resources.
13. The initiatives to improve CFP in Fiji is identified and discussed in the Risk Management Guidelines.

Risk Management Guideline

14. The risk management guideline is shown in the table below which discusses the work that has been conducted and what more can be done to improve CFP management in Fiji.
15. MF requires technical assistance in the area of education and training, research and resources on technical expertise for scientific advice, funding and laboratory capacity.

Step 1: Risk Identification	Step 2: Risk Assessment		Step 3: MANAGING RISKS						
List of Possible Risks	Impact (H/M/L)	Likelihood (H/M/L)	What are we already doing about it?	What more can we do about it	When will it be done?	Who will do it?	How will we review progress?	Reviewed Level of Risk	
Eating of possible ciguatera fish during warmer months	H	H	<ul style="list-style-type: none"> - Awareness through dissemination of ciguatera fish posters in the media (newspaper) and communities. - Hotspots has been identified through ciguatera baseline survey using semi structured interview questions in about 11 per cent of the total traditional demarcated fishing grounds (I Qoliqoli) in Fiji - Deployment of Fish Aggregation Device (FAD) in outer reef 	<ul style="list-style-type: none"> - Research to be conducted in hotspots to assesses the composition of the algal community in hotspots for ciguatera and to identify the macroalgae primarily responsible for providing habitat to the dinoflagellate <i>Gambierdiscus toxicus</i>, an epiphyte responsible for ciguatera production - Development of information sheets and awareness materials - Deployment more FAD and promote fishing in the offshore area. 	Availability of resources	Ministry of Fisheries (MF) with partners	Reports published	Through reports from Health Workers	

			area to promote fishing in offshore area away from the reef area.						
Fishers selling possible ciguatoxin fish during warmer months	H	H	Nothing	<ul style="list-style-type: none"> - Regulatory framework to be in placed - Availability of testing kit for fishers - Promoting fishing in offshore area than the reef area 	Availability of resources	MF with partners	<ul style="list-style-type: none"> -Regulatory framework is established - Testing kit available - reports published 	Through reports available	
Unreported cases of ciguatoxin in rural areas of Fiji	H	H	<ul style="list-style-type: none"> - Number of victims collected through ciguatera baseline survey using semi structured interview questions in about 11 per cent of the total traditional demarcated fishing grounds (I Qoliqoli) in Fiji 	<ul style="list-style-type: none"> - Development of a standard reporting and monitoring mechanism at the community level - Development of a intersectoral committee. 	Availability of Fund	MF with partners	<ul style="list-style-type: none"> -Reports published - Standard reporting mechanism developed - Intersectoral committee formed. 	Through reports from the communities and reported cases	
Illness/Death	H	H	Reporting to Rural Health	<ul style="list-style-type: none"> - Laboratory testing of blood 	Availability of	MF with partners	<ul style="list-style-type: none"> - Reports submitted 	Through testing	

			Centers/Hospital	<ul style="list-style-type: none"> - samples/urine Laboratory testing of left over fish - If fishing area is known then testing of the same fish species and algae from that area. - Establish an emergency response team (Ministry of Fisheries/Ministry of Health) - Availability of fish sample testing equipment locally 	resources		<ul style="list-style-type: none"> - Response Team established - Testing equipment available locally - 	resports	
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No documentation and Loss of traditional ecological knowledge	L	L	<ul style="list-style-type: none"> - Information collected through ciguatera baseline survey using semi structured interview questions in about 11 per cent of the total traditional demarcated fishing grounds (l 	<ul style="list-style-type: none"> - Document all traditional ecological knowledge - Identification of effective treatment in the development of herbal medicine. 	Availability of resources	MoH/USP	Reports available	Through reports available	

			<p>- Qoliqoli) in Fiji Workshop on “<i>Pilot Inventory of Traditional Knowledge of ciguatera fish poisoning and its treatment in the Pacific island region; Fiji and Papua New Guinea</i>” was conducted with the aim of bringing together fishers, traditional healers and ciguatoxin victims to share experiences, knowledge and discuss the way forward.</p>						
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Poor Data recording in Health Centers	M	M	Nothing	- Improve reporting mechanisms	Availability of Fund	MoH	Reporting mechanisms improved Reports available	Through reports	

Conclusion

16. Majority of the risks identified are primarily fisheries management aspect with two (2) are not relating to fisheries but to the health system but have been included in the risk management guideline for the holistic management of CFP in Fiji.
17. Dalzell 1993 stated that the management of CFP should be directed to those industries that generate earnings for the countries such as tourism and fisheries and there should be a combination of education, inspection, regulations and testing should be devised for CFP management.

Recommendations

18. The committee is invited to consider:
 - Carry out risk assessment of CTX and based on this provide guidance for the development of risk management options
 - Review existing analytical methods for ciguatera detection and quantification, with view to recommend those useful for routine analysis and surveillance.

References

1. Dalzell, P. 1993. Management of ciguatera fish poisoning in the South Pacific. Inshore Fisheries Research Project, SPC, Noumea.
2. Tester, P.A., R.L. Feldman, A.W. Nau, M.A. Faust, and R.W. Litaker. 2009. Ciguatera fish poisoning in the Caribbean. *Smithsonian Contributions to the Marine Sciences* 38:301-311.
3. Tester PA, Feldman RL, Nau AW, Kibler SR, Wayne Litaker R. Ciguatera fish poisoning and sea surface temperatures in the Caribbean Sea and the West Indies. *Toxicon*. 2010; 56(5):698–710.