

First Virtual Meeting of the Project Science Team

March 9/10, 2021

The first virtual meeting of the Project Science Team (PST) for the project on “Building local warning networks for the detection and human dimension of Ciguatera fish poisoning in Indonesian communities” (hereinafter referred to as Ciguatera) funded by the Ministry of Agriculture, Forestry and Fisheries (MAFF) of Japan, through the Fisheries Agency of Japan (JFA), was held via Zoom videoconference from 16:00–19:00 Pacific Daylight Time on March 9, 2021 (March 10, 2021 in the Western Pacific).

1. WELCOME REMARKS, INTRODUCTIONS AND ADOPTION OF THE AGENDA

The meeting was chaired by Dr. Mitsutaku Makino who called the meeting to order. Dr. Shion Takemura led the introductions of the attendees (*Appendix 1*). The provisional agenda circulated prior to the meeting was adopted without changes and can be found in *Appendix 2*. Dr. Mark Wells served as the rapporteur.



Ciguatera project meeting participants at their first virtual meeting on March 9/10, 2021. Charles Trick missing from photo.

2. SUMMARY OF THE PROJECT

Dr. Makino gave a detailed background to the project beginning with a summary of the previous project (Building capacity for coastal monitoring by local small-scale fishers; FishGIS) to set the stage. This included the basis for capacity building using mobile phones, a review of the current capabilities, and the emphasis of transdisciplinary work and co-design of the project with local communities. He then transitioned into the new project plans, providing a detailed overview of the current project design.

3. REVIEW OF CIGUATERA FISH POISONING

Dr. Pengbin Wang has considerable experience working with *Gambierdiscus* species, and he provided the team with a broad background summary of the dinoflagellate and the known/perceived climate effects on Ciguatera Fish Poisoning (CFP), and HABs in general.

4. REVIEW OF ORIGINAL WORKPLAN FOR YEAR 1

A summary of the underlying reasons for the workplan was presented by Dr. Mark Wells and discussed by the PST:

- CFP is the greatest HAB problem on earth... causing substantial health, economic, sociological problems in tropical and subtropical nations.
- CFP is exacerbated by damage to coral reef environments, through either direct human activities or indirectly through climate change stressors.
- Climate change is leading to the expansion of subtropical gyres/environments, increasing the potential range of *Gambierdiscus* species.
- We are beginning to see increases in benthic dinoflagellates, including *Gambierdiscus* in other regions where it is monitored.
- These increases lead to greater bioaccumulation in fish that, in turn, lead to problems for local communities depending on the fisheries for food, and for larger-scale operations transferring fish internationally.

The strategy of the project is to **Assess**, **Detect** and **Avoid** the transfer of contaminated fish to the tables in local communities.

General comments:

- Need to keep in mind the cost in time (fishers cannot lose more than 6 days per year), so engaging them on a volunteer basis must not require lengthy commitments.
- Also must keep in mind that fishers have a limited ability to move their fishing grounds. Thus, if CFP is detected in one region, we need to consider how that knowledge should be dealt with.
- Countering this, Ciguatera-free fish may be worth more at the market, so greater distances and lower catch may still be sustainable.
- Need to consider the broader aspects. For example, develop a model case of how they might respond to different types of events.

5. REVIEW OF THE BUDGET STEPS

Dr. Alexander Bychkov provided a detailed summary of the evolution of the project budget with 3 consecutive versions as the extent of the COVID-19 pandemic became clearer—moving funds from travel to equipment and workshop costs, with some carryover to Year 2, with permission of MAFF.

6. CURRENT STATE OF THE FISHGIS APPLICATION

Dr. Takemura gave a summary of the current status of the FishGIS application and the updates to IOS 12 and Android 5.1 or later.

- Currently data are uploaded to the cloud server established in Indonesia and then transferred immediately to Japan for processing. This architecture solves the data sharing issues.
- There was some discussion about the logo for the application. It was decided to put FISHGIS at top and move logos of the funding sources to bottom of the screen.
- It also was suggested to have a welcome screen without logos, and to not make the logo's hyperlinks, as this increases the number of things on the screen to hit in error.
- There also was discussion about the button to add leading to information about CFP as well as whether to include a map of the region.

7. WORKPLAN FOR YEAR 2

Due to lack of time, the workplan for Year 2 was not discussed. However, one consideration brought up before the meeting was closed was the need to consider paying individuals to collect the data. This approach may be problematic for sustainability after the project ends, but would simplify the need to meet data depth expectations of MAFF.

Appendix 1

First Project Science Team meeting participants

Members

Daisuke Ambe (Japan, representing TCODE)
Seung Ho Baek (Korea)
Alexander Bychkov (PICES, *ex officio*)
Vladimir Kulik (Russia, representing MONITOR)
Mitsutaku Makino (Co-Chair; Japan, representing HD)
Shion Takemura (Japan, representing HD)
Naoki Tojo (Japan, representing FIS)
Vera Trainer (USA, representing MEQ)
Charles Trick (Canada, representing MEQ)
Pengbin Wang (China)
Mark Wells (Co-Chair; USA, representing MEQ)

Other

Shigeharu Kogushi (GFL, Japan)

Appendix 2

First Project Science Team meeting agenda

Tuesday, March 9, 2021 (PDT)

1. Welcome remarks, introductions and adoption of the agenda
2. Summary of the project: general framework, objectives and deliverables (Makino)
3. Review of Ciguatera Fish Poisoning (CFP)
4. Review of the original workplan for Year 1
5. Review of the budget steps
6. Current state of the FishGIS application
7. Workplan for Year 2: Outstanding questions, planning for a virtual meeting with Indonesian partners