



## BEST PRACTICE GUIDELINES FOR A DATA ANALYSIS UNIT

For component 2.2.3

Integrated Monitoring, Control and Surveillance System in FFA Membership

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*With support from:*

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## **BEST PRACTICES AND GUIDELINES FOR A DATA ANALYSIS UNIT.**

### **MCS Data Analysis Unit**

Tuna Regional Fisheries Management Organization (tRFMO) manage stragling fish stock, including the highly migratory tuna species. tRFMO collects, holds, processes and disseminates data to its members and stakeholder agencies for sustainable management and conservation purposes.

Respective TRFMO members collect, hold, process and disseminate information available to them under National Information Management System (N-IMS) to tRFMOs and other stake holders as required or requested for management and conservation purposes. Respective tRFMOs as the central management agency then hold, process, and disseminate data back to members in order to assist them with their decision making in management, conservation and development of the highly migratory fish stock.

A dedicated MCS analyst should be recruited within respective tRFMOs to assist members in MCS data analysis training and timely assistance in conducting data analysis to detect daily occurrence of Illegal, Unreported and Unregulated (IUU) fishing risk factors. The Analyst will also conduct IUU risk assessment using available historical data to assist members in planning, prioritizing and deploying surveillance assets to mitigate IUU fishing risk factors. It is anticipated that respective members will establish similar positions in country, to be specifically tasked to analyse and detect IUU fishing incidents. The national analysts will be the focal point of contact for liaison with other analysts and stakeholders on alleged IUU fishing activities occurring within and outside other tRFMOs.

### **BEST PRACTICES AND GUIDELINES FOR A MCS DATA ANALYSIS UNIT.**

The Pacific Island Forum Fisheries Agency (FFA) as an intergovernmental agency has set up Regional Information Management Facility (RIMF) integrated MCS system and the establishment of the Data Analysis/Intelligence Unit, a draft “Best Practices and Guidelines” has been developed to guide the MCS data analysis work.

The “Best Practices and Guidelines” include the FFA’s administrative and operation procedures, to help other tRFMOs and their members develop or incorporate the best practices and guidelines that has been developed.

The “Best Practices and Guidelines” are only general guides subject to review and update depending on the changes and development taking place within respective tRFMO and national fisheries administration, specific fisheries operation departments and where data analyst positions and/or units are established.

The “Best Practices and Guidelines” are developed to guide MCS Officers/Data Analyst to be consistent when accessing, analysing, using and disseminating MCS data to achieve the intended outcome. It is not specific to any jurisdiction, is applicable only as a regional guidelines and is subject to change as improvements are discovered.

## **OBJECTIVES OF MCS DATA ANALYSIS UNIT**

The primary purpose of a MCS data analysis unit is to examine in detail, interpret and explain MCS data gathered from different reliable sources to detect alleged IUU fishing violations or infringements on fishing vessels.

The aim of the unit is to ensure that the data analysis and information they provide are accurate, relevant and reliable to use. This is done to remove any bias, substantiate the allegation and to confirm any alleged incidents, before reports are compiled and forwarded to relevant officers and agencies for their information and timely decision making.

The unit also conducts analysis on past and present vessel patterns and modes of operation to assist in conducting intelligence based surveillance operations. MCS data analysis also creates a history of vessels and people, modes of operation, compliance profiling and integration. These forms of data are becoming particularly useful for MCS purposes.

## **MCS DATA**

MCS data is a range of data sets gathered through observation, collection, measurement and analysis of fishing activities. It also includes terms and conditions under which the resources are harvested and on the supervision of the exploitation of the resources. This data is sourced from different MCS tools, programs and activities that are implemented at national and regional levels.

Respective tRFMOs and their members operate and maintain national Information Management Systems (IMS) where all available and relevant MCS information are collected, stored and analyzed at country levels. These MCS data include, but are not limited to; national vessel register, vessels logbook/sheets, catch and effort statistics, boarding and inspection reports, Catch Documentation data and market reports, observer reports, Vessel Monitoring System(VMS) reports and aerial surveillance reports. Other related MCS information not available in-country, can be sourced online from other open and closed information sources including from other tRFMOs.

## **DATA COLLECTION AND MANAGEMENT.**

In a perfect world, all of the data collected are, cleaned and stored in a central data management facility for easy access during analysis. tRFMOs and its members collect, store and disseminate information available to them under National Information Management System (N-IMS) to authorised officers and agencies under data sharing rules. Respective tRFMOs who don't have data sharing arrangements should enter into some arrangements in order to share data across all tRFMOs to effective management and deter any IUU fishing activities across the globe. The data is securely stored and access is granted to authorize users. The data should be cleaned/ debriefed before it is stored. Data analysts must have operational knowledge on the data sources, access, ownership, use, distribution and the rules surrounding those data.

Specifically, best current practice is:

- the information required for MCS purposes including analysis are collected, verified and made available in a timely manner and in an agreed format to all users.
- There is coordinated data collection, storage, access and dissemination amongst relevant tRFMOs, tRFMO members and other regional stakeholder agencies and partners.
- Data are made available and easily accessed through recognized data management arrangements, such as the National Information Management System (NIMS) and Regional Information Management Facility (RIMF) and through open sources.

## **DATA SOURCES**

Officers conducting MCS data analysis first need to understand what data they have available from internal and external sources and how that data verifies or ascertains an alleged IUU fishing incident or how that data could be used to analyse and assess IUU risk factors. They also need to be clear on how they define each data item and the rules that apply to access, storage and dissemination of such data to effectively facilitate data sharing amongst other tRFMOs.

### **National Information Management System (NIMS)**

Respective tRFMOs national MCS Analyst conducting data analysis should have easy access to all the available MCS data that has been received and stored nationally through the National Information Management System (NIMS). Analysts conducting daily analysis have access to all MCS data including a live Vessel Monitoring Program (VMS) data which show vessel details, tracks and other necessary information for a quick analysis.

### **Regional Information Management Facility (RIMF)**

Designated Analysts conducting MCS Data analysis have external user access rights to RIMF. They must also be able to access open source information including the general vessel details, flag state, licensing information, IUU listing, vessels on good standing, list of authorised fishing vessels in respective tRFMOs and other necessary information to aid data analysis. They also are able to establish a good working relationship with regional officers, who have access to and can verify any issues of concern through the data held at respective tRFMOs and regional offices.

### **TUNA Regional Fisheries Management Organization (tRFMO) Record of Fishing Vessel (RFV)**

Designated Officers conducting data analysis should be able to access all tRFMOs online data links to verify fishing vessels list for licensing and fishing authorisation purposes. All fishing vessels operating in the region are to be registered on respective tRFMOs for all MCS intended purposes.

### **Open and Restricted Ship registries**

Data analysts conducting relevant analysis should be able to search open and closed registries to access fishing vessel details from as many sources when conducting their analysis before preparing reports and briefs. Some good data/information are available through those registries.

## **BEST PRACTICES IN ACCESSING AND USING DATA FROM DIFFERENT SOURCES.**

There is no set order in which data is sourced from different data sources. Depending on the nature of IUU incident or from where the analysts want to start their search, searches for information can start from restricted sources to open sources or vice versa.

The current best practice in access and analysing data from different sources is to;

- To primary search and use data from members NIMS/ National FV Registry/ Latest list of Authorised Fishing Vessels.
- To search and use data from sub-regional and regional sources which the data collected is managed under strict data rules.
- To conduct search from and use data from open sources to provide additional needed information.
- Data from restricted sources to be accessed and used according to data rules.

## ADMINISTRATION

Fisheries Operation Departments of respective fisheries administrations who are members of tRFMOs are tasked to handle all fisheries MCS programs and activities including data collection, storage, processing, analysis and dissemination.

It is recommended Best Practice that;

- A dedicated MCS Officer/Analyst recruited or tasked to work on analysing IUU fishing activities have sound knowledge and experience on national, sub-regional, regional and international MCS programs and activities, including observer program activities.
- MCS Officer/Analyst recruited or tasked to work on IUU fishing activities have sound knowledge on national, sub-regional, regional and international legal frame works including licensing terms and conditions under respective licensing arrangements, regional conservation and management measures.
- Designated MCS Officer/ Analysts is specifically tasked to deal only with all alleged IUU fishing incidents detected from vessels through data analysis.
- Designated Analyst to conduct risk assessment analysis to assist tRFMOs to inform members of IUU risk factors.
- Biggers administrations to have more than one analysts tasked with analysing IUU fishing incidents.

When analysing and disseminating information or briefs to other officer/ members/ stake holders, it is recommended Best Practice that before an alleged incident reported is disseminated;

- Lead Analyst is to ensure that the alleged incident has been verified and ascertain with all available data.
- Lead Analyst is to ensure all available data sources have been checked to confirm and verify alleged incident.
- An internal brief amongst analyst as final analysis on alleged incident be done before the alleged incident is disseminated for further appropriate action.

- Lead analyst ensures that data used in preparing brief are relevant, reliable and accurate.
- Lead analyst/ Team Leader checks and signs off any incident that is disseminated.
- Lead Analyst to follow up on feedback/outcome of resolution on incidents forwarded to appropriate officer/ member and provide outcome to analysis team members.

Certain information from within and outside of the organisations maybe required at times to complete analysis process. Request for Information from other members or agencies should follow set procedures and RFI request templates.

- Request for information should be checked and cleared by Lead Analyst before it is send out.
- Record of all RFI sent, receive, acknowledge with any related attachment to be maintained in the RFI register.

### **FEEDBACK ON POTENTIAL IUU FSIHING INCIDENTS DETECTED AND REPORTED.**

It is recommended best practice that appropriate officers and agencies provide feedback to all concerned stakeholders on outcome of report/ resolutions or actions taken by members, flag states and tRFMOs on reported IUU fishing violations.

It is recommended best practice for all tRFMOs and member nations to have standardized Information/Intelligence Reporting Format. As each FFV is boarded and inspected, it should be mandatory for a comprehensive Intelligence Report (IR) to be submitted within a prescribed time lines and fed into the MCS Data systems, where it can be cleaned, verified and value added as required.

Once stored the information should be migrated and attached to those data programs as required and easily accessible via search functioning.

The stored information/intelligence information should be shared as soon as practicable with all partner tRFMOs, member nations and partner agencies, under the information sharing agreements.

### **DATA ANALYSIS**

It is best practice that MCS Data Analysis units are aware of IUU fishing activities, patterns and trends, and the programs and activities undertaken to eliminate those activities.

The current best practice for analysing illegal and unregulated fishing activity/ vessel is using MCS Data Analysis Procedure/Guidelines:

Check and analyse all available information, verify alleged IUU fishing activities before preparing incident report for further consideration and appropriate action.

There is no agreed system or procedure on where to start data analysis. However, it is recommended best practice that analysis should be done accordingly to IUU risk categories to systematically analyse the incidents detected or reported.

## The current Best Practice in analysing Illegal Fishing.

When a national or foreign vessel is detecting fishing in a state's waters without permission or authorisation, the following checks should be done before any further action. The checks could be done in any order.

- Check national vessel licence list, permits or authorisation register to establish whether or not a fishing permit is issued by the coastal state authorising the vessels to fish in its Exclusive Economic Zone (EEZ). Respective coastal states should have information on vessels authorised to fish in their EEZ under the national Information Management System (IMS).
  - *If no national authorisation is issued to the vessel to fish in its EEZ, then;*
- Liaise with and check authorisation to fish under any sub-regional arrangements to which the coastal state is a member to. This analysis is to confirm whether or not the vessel is authorised to fish under other arrangements within the tRFMO.
  - *If the vessel is not authorised to fish under other sub-regional arrangements, then;*
- Check tRFMOs Record of fishing Vessels (RFV) database to establish whether the vessel is registered on the RFV in-order to operate within the Convention area.
  - *If the vessel is not registered on RFV, then:*
- Check other open vessel registries for additional vessel information.
- Check other RFMO record of fishing vessels, members states, VOI IUU listings and other information to establish whether or not the vessel is permitted to fishing in their organisation, establish flag state of the vessel and whether or not the vessel is list on any tRFMO IUU listing etc.
- Check with the administration of the state in which the alleged vessel is detected on whether or not the presences of the vessel in its water is known or permitted.
- Check from registries for previous vessel details including name, IRCS, MMSI UVI etc. to ensure that the named vessel is not reporting under a different name.
- Check registries and ensure that the International Radio Call signs (IRCS)/Marine Mobile Station Identification number (MMSI)/ Unique Vessel Identification (UVI) number and name and other vessel particulars are distinct and link to alleged vessel.
- Check Nation/Regional VMS and AIS data/information to confirm alleged illegal fishing activities.
- Vessels details and previous sightings of alleged vessel could be check against High Sea Boarding and Inspection reports, aerals and surface surveillance contact reports that could be held by regional and national agencies.
- Confirm vessel's Flag and vessel owner's particulars from all available information sources and liaise through appropriate avenues to report alleged violation.
- Make final determination including IUU listing base on flag state response to alleged incident.
- If vessel is registered and data kept within regional IMS; conduct historical data analysis on the vessel to ascertain the allegations.

- Check Catch Documentation Schemes/System to verify against origin, weight, species composition and whether or not it was taken in accordance with CMM.
- Then provide a detailed finding of the analysis to appropriate officers and agencies for their information and follow up action.

### **The current Best Practice in analysing Unreported Fishing.**

Estimates of Unreported catch and effort data are routinely observed and reported by observers or detected from vessels own catch log sheets through analysis. MCS programs and activities are directed to confirm and verify alleged incidents from available data and sources to counter unreported fishing is not fully implemented across the region and efforts are made to counter it.

Unreported catch estimates, set positions, species composition and other necessary information required by management for management and compliance purposes are cross-checked and verified by independent measures of national and regional monitoring activities. These national and regional programs and activities including but not limited to; port transshipment monitoring, port sampling activities, cross checking observer report to vessel, catch documentation schemes and cross checking factory landing slips against records provided by vessel and electronic reporting and monitoring.

The current practice to analyse Unreported fishing activity is:

- To allow a 10 % on the observer and vessel's estimate of catch
- Comparisons of trade information from different sources to verify information provided by vessel.
- Sampling at unloading ports and in markets, to determine the quantities, species and likely origin of products.
- comparison of these estimates with reported quantities, species and origin of products from catch documentation systems;
- Comparisons of catch and effort data from observer, vessels and against electronic monitoring data in order to estimate likely catch, including bycatch.
- data useful to the understanding and estimation of IUU fishing activities, including catch and bycatch, are shared, as appropriate, through common database structures across all data users.
- Analysis on vessel holding including fish hatch/well capacity based on historical records to determine vessel's maximum loading capacity.
- Timely analysis and verification of catch and effort data when vessel in port.

### **The current Best Practice in analysing Unregulated Fishing.**

A great deal of unregulated fishing happens on the high seas or international waters and all waters adjacent to the Exclusive Economic Zone (EEZ) of coastal states. It is seen also that a great deal of unregulated fishing is taking place within tRFMOs members EEZ.

Flag states are responsible for regulating the actions of vessels flying their own flag on the high seas. Coastal states may have some jurisdiction over vessels operating on the high seas when it contravenes conservation and management measures of a regional fisheries management organisation.

Steps followed and data sources used in illegal fishing would very much be the same used in unregulated fishing.

- Identify vessel and search vessel details on national, regional and global vessel registers.
- Search vessel on various IUU listing for non-compliance history.
- Liaise with flag state and vessel owners if flag state and ownership is known/established
- If List the vessel as an IUU vessel on the tRFMO IUU listing if flag state and ownership is not known, or nothing is done by flag state to resolve the issue.
- If vessel is within jurisdiction, provide relevant necessary information to appropriate agency to arrest and deal with the vessel.
- If vessel is outside national jurisdiction, monitor tracks on any monitoring systems (VMS/AIS SARS ect) if possible and liaise with boarding and inspection team for boarding and inspection once within member's jurisdiction.
- Access relevant information and cross reference with other available data sets.
- Take appropriate legal action which is necessary to deter and eliminate IUU fishing.
- Breach of tRFMOs Conservation and Management Measures (CMMs).

*What is Best practice?*

*A best practice is a method or technique that has been generally accepted as superior to any alternatives because it produces results that are superior to those achieved by other means or because it has become a standard way of doing things, e.g., a standard way of complying with legal or ethical requirements.*

*Wikipedia*