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Enhanced Data Analysis and Interpretation: Experiences and Opportunities

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ENHANCED DATA ANALYSIS AND INTERPRETATION: EXPERIENCES AND OPPORTUNITIES

**WCPFC-TCC19-2023-18
11 September 2023**

Paper by the Secretariat

Purpose

1. The purpose of this paper is to share the Secretariat’s experience with consultancies that have significantly enhanced the analysis and presentation of WCPFC data holdings, and to consider the corresponding opportunities for the Commission. The paper also responds to a WCPFC19 task that the Secretariat report to TCC19 with its views about the additional consultancy in 2023 to inform further consideration as appropriate at FAC17 on future arrangements.

Background

2. For several years, the Secretariat has considered the need to enhance its in-house analytical capacity and explored opportunities to achieve this. The objective is to more efficiently provide more robust information to inform the Commission’s work and decisions. As an example, during 2020/21, the Secretariat was requested to support the delivery of a comprehensive study which included a detailed analysis related to transshipment activities in the WCPFC Area.¹
3. Reflecting on this and similar experience from other IWG discussions as well as what is required to deliver its taskings, the Secretariat advised TCC17 (2021) of its forecast that additional resources were required to expand the analytical capability of the Secretariat.²

¹ The detailed analysis was completed in late 2022 by SPC-OFP, utilizing voluntary funds from the United States. The reports from the work were included in the information presented to the [TS-IWG01](#) meeting held online in May 2023.

² [TCC17-2021-21](#) *Preliminary consideration of anticipated forecast of Secretariat work commitments for TCC 2022/2023* at the time the Secretariat had forecasted the need for greater analytical work in four areas:

a. Establishing and refining ongoing processes that support the CMS.

4. In December 2021 (WCPFC18), the Commission approved funding towards supplementary dedicated analytical capacity for the Secretariat in 2022 and 2023.³
5. In March 2022, a consultancy arrangement commenced with Saggitus Ltd. The principal consultant in the company is well-known in WCPFC, as a former SPC-OFP stock assessment scientist and data analyst, Dr Steve Brouwer. The work through this consultancy intended to explore how data collected by CCMs through WCPFC Monitoring Programs, both in Secretariat databases or databases maintained by the scientific services provider, can be used to improve the value that can be derived from WCPFC datasets to support CCM and Commission needs.
6. Drawing from the experience gained in 2022, it was clear that additional and sustained analytical capacity is required for the Secretariat to also progress other priority tasks:
 - automated extraction and IT tools to support the parameters of common data requests to support MCS activities;
 - development of automated extraction and IT tools to further enhance public access to WCPFC scientific data and information and Summary information from MCS programmes; and
 - development and integration of new processes into Secretariat workflows, and to refresh front-facing web screens and user guidance for members and, where relevant, the public.
7. In December 2022 (WCPFC19), the Secretariat presented a proposal which sought to respond to workload concerns for the Secretariat through establishing a Compliance and Monitoring Analyst position at the Secretariat.⁴ The rationale was informed by the Secretariat forecast that to efficiently develop the required analytical products

b. Developing automated extraction and provision IT tools to support the parameters of common data requests to improve support to members MCS activities.

c. Further enhancing public access to WCPFC scientific data and information, and summary information from the Commissions monitoring programmes, and

d. Preparedness to complete ad-hoc analytical reports in response to requests from TCC, the Commission, and from WCPFC IWGs, about fishing activities and implementation of CMMs in the Convention Area.

³ At WCPFC18, the Commission approved \$80,000 for 2022 and \$80,000 was proposed in the indicative budget for 2023 within Part 2.3 of the budget, under the title of Enhancing Analytical Secretariat Capacity. The stated purpose for these funds was intended to be additional short-term resources for the Secretariat in work to support the:

- continued refinements of the CMS;
- development of automated extraction and IT tools to support the parameters of common data requests to support MCS activities;
- development of automated extraction and IT tools to further enhance public access to WCPFC scientific data and information and Summary information from MCS programmes; and
- development and integration of new processes into Secretariat workflows, and to refresh front-facing web screens and user guidance for members and, where relevant, the public.

⁴ The proposal was presented in WCPFC19 paper: [WCPFC19-2022-FAC16-11](#)
: The rationale for the staff establishment proposal included recognition that the Commission now has well-established monitoring programmes that generate a substantial volume of CCMs data and reports. The suggested focus was intended to support TCC workplan activities.

addressing the above priority tasks and to develop and integrate new processes into Secretariat workflows, additional resources will continue to be required over more than 36 months.

8. At WCPFC19, the Commission approved the continuation of the supplementary funding to enhance the Secretariat's analytical capacity, and additional funds for a second short-term consultancy to support the increase in the Secretariat's workload in the coming year.⁵ WCPFC19 also tasked the Secretariat to provide a report to TCC19 and FAC17.⁶
9. In June 2023, following a competitive tender application and selection process,⁷ a consultancy arrangement commenced with DJ Consulting. The principal consultant in the company is seconded from NZ's Ministry of Primary Industries. Noting the task from WCPFC19, the aim of the consultancy has been to further improve the Secretariat's analytical capacity, with an emphasis on Secretariat support to TCC workplan activities, including specific analytical outputs by TCC19 (September 2023).

Experience to date

10. Table 1 on page 6 provides information on the focus of work arrangements for the two consultancies for analytical expertise. The Secretariat considers that the results to date from the two analytical consultancies are positively demonstrated in several reports for TCC19.

Opportunities

11. The Commission's main compliance-related programs are now well established with annual maintenance recognized as a core function of the Secretariat's work. This provides the Commission with a clear opportunity to explore options to enhance and improve understanding around areas relating to, for example environmental indicators and fishing activities, or verifying impacts of the Commission's management measures. These efforts would be complementary to opportunities that are presently underway through the [ERandEM-IWG](#) to establish E-monitoring as a tool to meet WCPFC's independent data requirements. The work on analytical interpretation is also expected to support monitoring strategies as part of the Commission's development of harvest strategies.

⁵ At WCPFC19, the Commission approved within Part 2.3 of the budget a one-year extension of the budget for Enhancing Analytical Secretariat Capacity in 2023, and an additional \$80,000 for 2023 for the Compliance and Monitoring Analyst Consultant.

⁶ The Secretariat was tasked to report to TCC19 and FAC17, with its views on its experience with the additional consultancy in 2023 to inform further consideration as appropriate at FAC17 on future arrangements (WCPFC19 Summary Report, paragraph 494).

⁷ The process commenced with the circulation on 28 February 2023 of an advertisement for the Consulting Position Vacancy – Compliance and Monitoring Analyst. The selection process recognised the need for consultants that combine TCC/MCS matter knowledge with expertise in analytical tools to ensure the most efficient delivery of analyses focus to support Commission.

12. The experience of the two analytical consultancies has demonstrated opportunities for improving the Secretariat's support to CCMs in fulfilling the Commission's functions. Some of the potential opportunities include:
- Improving the support to CCMs so that they can proactively address data quality issues and gaps affecting monitoring;
 - Obtaining greater value from CCMs data sets to enhance awareness and understanding of the Commission's monitoring tools, including where refinements are needed;
 - Linking information on fishing activities with scientific data and research on WCPO fisheries and ecosystems, to indicate where refined or targeted CMMs may be needed;
 - Supporting efforts to address the lack of independent verification tools in compliance work, with current focus on ROP observers, establishing EM and in enhancing monitoring and management of at-sea transshipments;
 - Setting a foundation for improved and expanded analytical capacity within the Secretariat to better support CCMs;
 - Expanding the scope of the work to enhance and streamline annual reports by the Secretariat, including integrating of SPC-managed CCM data; and
 - Supporting operational checks of vessel activities, particularly in the high seas, including identification of VMS reporting gaps, and responding to queries during CCM's MCS Operations

Next steps

13. The two consultants will be attending TCC19 and will be available to meet with interested TCC19 meeting participants who would like to further discuss their work with the Secretariat to date.
14. Further work to be completed in the short to medium-term entails operationalizing the approaches and prototypes that have been developed as "proof of concept" for future work. This will be important to ensure that the results from the work to date can be appropriately and efficiently supported and maintained by the Secretariat as part of repeatable routine reports and Secretariat-workflow processes going forward. This would be a necessary first step before the Secretariat can further progress work to provide CCMs with expanded information products and data analytical tools for CCMs to view their data and produce associated reports.
15. Further work by the Secretariat is planned following TCC19, to consider what might be required from an IT database and systems perspective to put some/all prototype initiatives into production. This will also provide an opportunity to take into consideration feedback, from TCC19, on the results to date from this work. Further updates and views from the Secretariat on the future arrangements to support this work will be provided to FAC17.

Conclusion

16. The initial results which are presented for review by TCC19 demonstrate significant ongoing potential from the Secretariat having the sustained additional resources to support continued efforts toward analytical interpretation of data. The learnings from the two consultancies include understanding that there is value in having some flexibility in both time and in the expertise when exploring the value and opportunities from analytical interpretation of CCM's data sets.
17. Additionally, and noting that many of the results to date have been presented as *work in progress*, feedback from CCMs is anticipated to further refine and ensure the outputs from the analytical interpretation work continue to be fit for purpose.

Recommendations

18. TCC19 is invited to consider this paper and:
 - i. **Note** the current and potential benefits that are realized from the Secretariat and CCMs ability to analyse and present snapshots from WCPFC data to date through the current consultancies;
 - ii. **Note** the outputs delivered through consultancies were not possible within current Secretariat resources and expertise;
 - iii. **Provide feedback to the Secretariat** on the results from the work to date; and
 - iv. **Note** the Secretariat's experience with the consultancies, which reinforces the benefits of additional expertise to deliver and add value to the Commission's work.

Table 1. Summary overview of the focus and results to date from the two analytical consultancies to support the Secretariat

	Policy/Data Analysis Saggitus Ltd - Dr Steve Brouwer March 2022 - December 2023	Compliance and Monitoring Analysis DJ Consulting - Mr Douglas Jackson June - December 2023
Aim	To improve the Secretariat’s analysis and reporting of data to support key Secretariat functions, through improvements that simplify and streamline the delivery of analysis and reports.	To continue to improve the Secretariat’s analysis and reporting of data to support key Secretariat functions, with an emphasis on Secretariats support to TCC workplan activities.
Focus	The focus of the work relates to three areas of Secretariat routine taskings work: <ul style="list-style-type: none"> • the annual CMS process, including reviews of aggregate tables; • the production of required annual reports for TCC and reports for intersessional working groups; and • the delivery of more useful and transparent information on the WCPFC website for the public and/or members. 	The focus of the work relates to these areas of Secretariat routine taskings work: <ul style="list-style-type: none"> • exploring what might be needed to assist the Secretariat in understanding the potential uses of data from the Commissions monitoring programmes, with an initial focus on Secretariat support to VMS monitoring, high seas transshipment monitoring and high seas pocket management, and • to optimize with the support of repeatable routine reports the Secretariat and CCMs joint work to address data quality issues and gaps affecting monitoring.
Results to date	<p>2022: Several of the routine annual reports of the various MCS tools for TCC18 had positively demonstrated the initial results from the support the Secretariat received through the consultancy arrangement.</p> <p>2023: Several streamlined and enhanced TCC19 annual reports:</p> <ul style="list-style-type: none"> • a comprehensive set of non-public domain static aggregated tables based on CCFS data for reference in the CMS • Use of ROP data in the CMS public (WP-09) • Annual Report on Transshipment (RP03) • Annual Report on the High Seas Boarding and Inspection Scheme (RP04), • Annual Report on the Record of Fishing Vessels (RP05), and • Annual Report on EHSP-SMA (RP06). 	<p>2023: The development of several prototype analytical tools, as a proof of concept, to support Secretariat tasks in verification and monitoring of high seas activities including:</p> <ul style="list-style-type: none"> • High seas pocket special management areas, which was drawn into the presentation of information in Annual Report on EHSP-SMA (RP06); • Transshipment activities, which was drawn into the presentation of information in the Annual Report on Transshipment Reporting (RP03); • VMS reporting, which was drawn into the presentation of information in Annual Report on the Commission VMS (RP01) and used in the update and preparation of supporting files related to VMS reporting used in the draft Compliance Monitoring Report (dCMR); and • Charter notifications.