Information Paper No. 1

**Original: English**

# Introduction to all things related to coastal fisheries and aquaculture data

1. Data is the cornerstone on which fisheries managers, scientists, communities and other stakeholders rely on to implement arrangements that maximise the utilisation of aquatic resources in the most cost-effective and sustainable manner possible. Accurate and representative data provides an indication of what is happening now, what has happened in the past, and may even provide insight into what may happen in the future depending on the management arrangements that are implemented.

2. **Data** validates anecdotal or qualitative information and establishes a factual basis for making decisions that are credible. For example:

   *'I think the problem is.....'* becomes *'The data indicates the problem and may also indicate a possible solution . . .'*

3. **Data is a sub-set of information that:**

   - is a quantitative method of recording experiences;
   - ensures consistency when recording experiences;
   - measures change and the extent of activity/acquisition of resources;
   - informs and educates;
   - informs and facilitates management processes (e.g. decision-making, policy-making, resource allocation).

4. Knowing which questions need to be answered is critically important, as this will dictate the type and amount of data to be collected. This is true for any data-collection process, whether it is for resource assessment, economic assessment, aquaculture activities, etc. Therefore, understanding what the data will be used for during the design stage is essential, and trials should be undertaken to ensure success.

5. Data is sometimes very expensive to collect, and this will vary based on the methods that are used, the location where data is to be collected (due to logistics), and the resources that are needed to carry out the data collection. The timeframe is also important: does the data need to be collected long-term, or are 'snap-shot' approaches a better option? Again, this will depend on the questions to be answered.

6. Managing fishery resources is more complex than other living resources since they are distributed throughout an environment that makes any form of monitoring very difficult. For this reason, standardised data collection is the only way to provide accurate representations of the exploitation and state of a resource. This also allows comparison between locations and countries in order to support better fisheries management.

7. Types and sources of data vary enormously, ranging from scientifically collected, statistically valid surveys through to traditional lore and even anecdotal evidence. There are also quantitative data types that are number based, and qualitative data types that are non-number based, and both need to be considered. Individually, or in combination, these data types play an important role in the daily management of aquatic resources.

8. Improved management of coastal fisheries requires data and information about the status of the resources (stock), the level and methods of extraction (catch) and the importance of the fisheries for food security (consumption) and livelihood (sources of income).

9. For the aquaculture sector, data is necessary for the monitoring and improvement of production cycles, tracking a list of active farms and relative infrastructure, and getting information about production and socio-economic benefits of the activities.

10. There is a growing focus on the collection of socio-economic data in order to look at gender perspectives and household demographics using sex disaggregated data. Economic data is also collected to assess the viability of fishing or aquaculture operations, or the cost benefit of analyses that are undertaken. Again, the data types and methods that are to be used all come back to the basic questions that need to be answered for supporting sustainably managed and developed fisheries, and the available resources.

11. The inaugural regional technical meeting on coastal fisheries (RTMCF) is supported by a series of information papers that have been put together as background information to assist discussions on data requirements, limitations, etc. for the management of coastal fisheries and aquaculture in the Pacific Islands region. There is an introduction session that is followed by five thematic sessions with information papers for each as follows:

12. **Session 1: Opening and introductions.**

- The normal meeting preliminaries and introduction
- Information Paper No. 1 (IP1) – Introduction to all things related to coastal fisheries and aquaculture data

13. **Session 2: A new approach to data collection**. This session looks at coastal fisheries data collection systems that are currently in use; new, innovative data collection systems; and the data associated with coastal fisheries science and management, nearshore fisheries and aquaculture; and discusses fishery-dependant and fishery-independent types, and sources of data.

- IP2 – SPC coastal fisheries data collection systems
- IP3 – Economic and social-economic data in support of viable fisheries and aquaculture
- IP4 – Coastal fishery-dependent and fishery-independent surveys and data collection
- IP5 – New, innovative data collection systems
- IP6 – Aquaculture data collections (production inventories, etc.)
- IP7 – Nearshore fisheries development and FAD data collections

14. **Session 3**: **Advances in data holdings and repository.** This session covers data storage systems for coastal fisheries and aquaculture.

- IP8 – Data holdings and repository

15. **Session 4: Innovations and alternatives for data analysis and interpretation.** The session looks at data that is being collected through other processes that could be used in coastal fisheries and aquaculture assessments. In addition, the analysis methods used in other sectors will also be explored.

    - IP9 – National collections and what they offer

16. **Session 5: Developing a framework for data governance.** This session covers the possible standardisation of coastal fisheries and aquaculture data that is to be collected through a regional group, and is similar to the Data Collection Committee (DCC) that is used for oceanic fisheries data. Data governance frameworks and Monitoring, Control, Surveillance and Enforcement (MCS&E) are also discussed.

    - IP10 – Regional standardisation of coastal fisheries and aquaculture data – institutional aspects
    - IP11 – A framework for coastal fisheries and aquaculture data governance – legal aspects
    - IP12 – Coastal Monitoring, Control, Surveillance and Enforcement (MCS&E) data collection

17. **Session 6: New trends in the dissemination and exchange of information (including data).** This session looks at new trends in presenting and disseminating data for different audiences.

    - IP13 – New trends in data dissemination and exchange

18. It is important that any data, be it provided by fishers or collected by trained surveyors, is representative of the activity being sampled or the information being collected. There are two important issues to consider here:

    a) Issues with non-representative sampling – for example, surveying only small catches because these are easier to record on your device may not be representative of overall catches; and

    b) Interpreting results without additional information – too often incorrect outcomes have been forecast by extrapolating data without knowledge of other changes in a fishery that can influence the data that is being collected – for example, a significant rise in catch per unit of effort (CPUE) could be interpreted as a stock recovery although if the increase is caused by new fishing technology that enables fish to be captured more easily, the rising CPUE could actually be masking what is really happening to the stock.

19. These issues highlight the need for data to be collected in an established, standardised manner, including how the data is recorded and for what purpose. The data also needs to be clearly documented as part of the data collection protocol.

20. **End note:** Having good data greatly assists in basing management interventions on the best available advice. However, having little or no data should not be used as an excuse or reason to not implement management interventions, as the management approaches can be

modified when new information becomes available. In the absence of good data, a precautionary approach should be taken to ensure the sustainability of the resources, and the people that rely on them, into the future.