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New, innovative data collection systems

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BACKGROUND

1. Traditionally, coastal fisheries surveyors were roaming wharves and fish markets with a ruler, a stack of paper forms and a pencil to collect data. The data was entered at a later time when the surveyor returned to the fisheries office or the forms were sent regularly to fisheries for data entry. Forms were stockpiled, sometimes lost or destroyed and data was not available electronically for weeks or even months after it was initially collected. Rapid advances in new technology can provide opportunities to gain efficiency, quality and the scope of data collection and management for the same or less cost.

2. Field and fisheries surveyors have a range of tools at their disposal that acquire data electronically such as smartphones, tablets, drones, 2D and 3D cameras, remote sensing imagery as well as Global Navigation Satellite Systems (GNSS) and boat tracking devices. Data can be entered on the spot using tablets or smart phones (e-reporting), or cameras can be installed on-board and video streams analysed at later time (e-monitoring).

3. These systems are being more frequently adopted, with the promise of more data, improved timeliness and less data entry errors or biases through greater quality control. They change traditional data collection with a shift of responsibility of data entry, a change in the required surveyor expertise and an accrued dependency on computer hardware and telecommunications for acquisition and transmission of data.

4. It is critical that member countries and SPC continually re-evaluate data collection programmes to ensure the use of technology is the best in its class and fit for purpose to ensure that technology is up-to-date, and any potential issues or challenges such as storage limits, battery life, etc. can be mitigated.

ISSUES AND CONCERNS

5. The quality of each technology solution varies greatly depending on the quality of the provider and, subsequently, the quality of the hardware and software delivered, as well as long-term support and maintenance. Not all vendors or technology deployments are equal and this can impact the success of the technology in collecting or managing the data. Trusted vendors with a proven track record of success in other projects in the Pacific Islands region or elsewhere in the world should be utilised to ensure the long-term success of technology deployments.

6. Cutting edge technology has some risk of failure. Countries and SPC must partner to agree on appropriate sites and situations for piloting new technology in order to find out which solutions will work best for the wider Pacific Islands region context, which are appropriate for only certain locations and settings, and which are not appropriate or need more time to develop.

7. Solutions judged unfeasible in the past can become feasible later on through advances in technology. The 'try once and if it fails then never again' approach can lead to a bias against a certain approach for future projects, which can result in missed opportunities. For example, battery technology is currently experiencing large investment in research and development, which will lead to improved efficiency of existing technology such as longer flying time for

drones and more reliable remote cameras. It is vital that data collection and management projects regularly assess the advantages and limitations of available new technologies in comparison with current data collection methodology.

8. Both failures and successes need to be documented so that we can build on lessons learned. There are numerous reasons that can lead to failure of data collection such as lack of funding for surveyors and recurring costs, hardware and software issues, internet access, or human factors (staff turnover, lack of training and incentive).

9. All technology in projects must be deployed as part of sound scientific methods, and proper training needs to be provided regularly to ensure good quality data and an unbiased sampling design.

POSSIBLE DISCUSSION POINTS

- What new technology has been implemented in the past few years for data collection? Has the implementation been mostly successful or unsuccessful? Why?

- Are there any data collection needs that new technology might be able to address?

- Are there IT personnel or technical people who would be interested in contributing to ideas and evaluation of new technology in data collection?