Computer science technology applied to data collection and data management

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Introduction

IFOP, as non profit marine research institute, has the mission to provide to the Under Secretariat of Fisheries in Chile, the technical information and scientific basis for the regulation of Chilean Fisheries. The scope of the data requirements is following:

Fisheries and biological data requirements
7 long term programs to monitor main national fisheries; 4 permanent specific fisheries research projects; 6 no permanent specific fisheries research projects

Coverage of data sampling
9 Sampling centers along Chilean Coasr; 48 Sampling points; 3,300 annual surveys onboard industrial vessels; 14,400 annual surveys to small craft fisherman; 20,500 annual inquiries of fishing log books; 2.9 million sample units of fish, crustaceans and benthic.

Methods

With the intention to improve the process of data production, since year 2005 a group of scientists of IFOP has developed a new computer science system for data collection, data management, and automatic publication of fishing and biological indicators in Web Page. The project was financed by the Governmental Corporation for Development of Production (Corporación de Fomento de la Producción CORFO, www.corfo.cl).
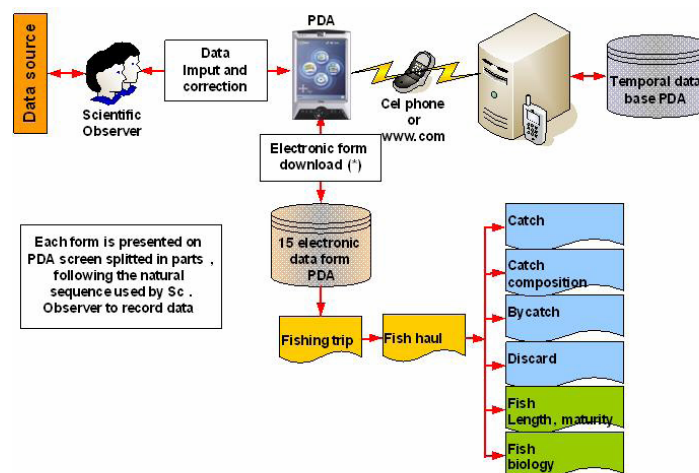

Figure 1. Data collection and transmission with Personal Digital Assistant. *Electronic data form download to PDA, implies that Sc. Observer must connect PDA to data base, select the   fisheries in which will collect data, and download automatically to PDA the needed forms.

Results

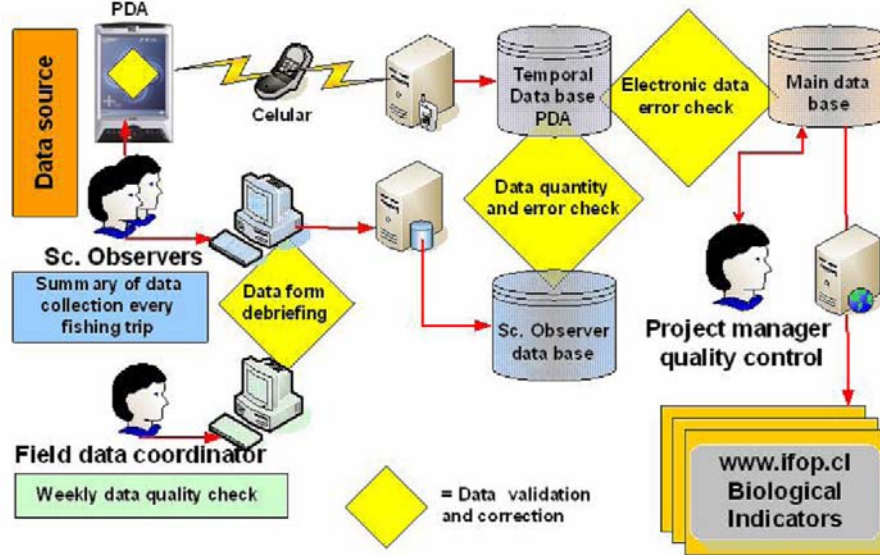The general configuration of the system is displayed in figures 1 and 2.

Figure 2. Procedure for data quantity and error control

Main attained changes:

ACTIVITY	Year 2006	Year 2009
Time delay between data collection and input in main data base	. 80 days delay	15 days delay
Report of data requirement fulfillment regarding quantity, opportunity and coverage	No report	Monthly report
Report of data error	No report	Monthly report
Automatic publication of	No report	Monthly report**

**Monthly report per fisheries including trends of last 5 years of following indicators: landings, effort, size distribution, mean size and sexual maturity indices.