

Chapter 7

Challenging Scientific Inertia in Fisheries Management

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ABSTRACT

The chapter reviews and analyses the scientific inertia, prevailing in western fisheries management system, which affects some general assumptions: equilibrium in fishery ecosystems, large spawning stocks, which produces large new generations; and fishing activities as main and only factor, which have an impact on targeted stock size. Due to those subjective assumptions the author observes that the external environmental and social factors might be disregarded. It appears that the management applied only by systems output data – valid for all sorts of fishing systems – is taken as appropriate approach, which by any means appears to be a method that would not take into consideration many other issues in stock condition and sustainability. This system seems to be supported for years by the scientists, governmental institutions and the sector, in spite of the abundance of books, case studies and researches, published by independent experts, which are attempting to set real dimensions in the official fishery science and its consequent management.

INTRODUCTION

The adequacy and validity of the Western World fisheries science and the consequent fisheries management in the, so called, “developed countries” is critically discussed. The reliability of mathematical/statistical models of fish population dynamics supported by acoustic surveys, which generate single-species stock assessments, is inherently dependent on stable and comprehensive real-time field data. However, even if such data

are available, the equilibrium assumptions, on which the fisheries management is based, might be misleading, although accepted by official science. Other misleading assumptions, pointed out by the chapter author, are that the natural mortality constant and the fishing mortality rates may serve as the only factors determining the fish stocks size fluctuations. Management, which is based on those assumptions, often does not pay sufficient attention to the human factor in fishing activities, while disregarding most if not all

environmental, abiotic and biotic, natural and anthropogenic factors that do affect fluctuations of fish populations' size.

Currently a number of generations of western fisheries scientists have been trained in line with this paradigm, to which they stick due to mental and institutional inertia. However, since fisheries presents a dynamic process where fish, fisherman, and ever-changing environment interact, it is not surprising that the western fisheries management cannot be but deficient. In addition such canonical assumptions as: the larger is the spawning stock, the larger is the recruitment, single species catch management is the cure for all diseases, fishing must be size selective, and models can be still valid without input of environmental data, must be seriously questioned. For over a century, scientists, independent of the institutional pressure and inertia have been notifying the real issues in fisheries ecology, publishing scientific reports, books and papers, trying to set a realistic and appropriate course for fish stock management, so far, however, with little success. Currently, only too many fishery-management scientists are spending most of their time in operating, analyzing, and discussing computer models in their efforts to circumvent insufficient information and large data flaws. They do it by manipulating their models, while using mathematical/statistical exercises. Unfortunately this practice comes at the expense of sea-born research, on-board sampling, data collection, and analysis, and keeps the scientists away from seas, fish, and also from fishermen and their knowledge. One of the objectives of this chapter is to send a warning to the marine scientists and fisheries managers in the developing countries, who have been educated and/or trained in Western European and North American countries. Some of them might have been coming from southern and eastern countries, where native science either hasn't yet developed locally, or has developed with different, often traditional approach. Notwithstanding, they might be very impressed with the modelling methodology and

paradigm, as well as with the output-management system they were taught at the various Western fisheries institutions. Coming back home, they would quite naturally be inclined to introduce the knowledge they had acquired in their national or local fisheries. They should, however be very judicious about some of the western procedures they've been taught. Not only that uncritical copying of the Western official fisheries science and management methodology is a bad thing to do, but also that often those are wrong even for the West's own fisheries.

BACKGROUND

1. On Scientists Associated with the Official Management of Fisheries

Fisheries management worldwide has become a business in its own right with a vested interest in expansion and perpetuation of its own bureaucratic system, supposed to "prevent the oceans from being stripped bare". Obviously, management is unable to manage directly fish stocks or the marine environment, all it can do is to manage people. Quick in blaming the fishermen for overfishing, the government's management is not prepared to take the blame for their own wrong decisions when they harm the resources, fishermen and their industry. Scientists, employed by governments, depend personally and institutionally on their administrations' political and economical interests. Managers insist on clear-cut scientific advice, presented with precisely calculated numbers. Accordingly, their scientists feed the available data and information into the various mathematical models unable to represent the fisheries ecosystem in a comprehensive manner and its dynamics in real time. What they really produce are mostly highly approximated data, though presented in precise figures, pretending to depict the current state of the stock. Because a number of factors are not taken into consideration, such results are

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