

editorial



Fisheries management requires an understanding of the biological characteristics of harvested fish stocks and also an assessment of their status. This is a significant challenge in tropical countries given the multi-species, multi-gear nature of the fisheries. In the early 1980s, there was concern regarding the lack of information in developing countries for assessing the status of fish stocks. There were also many debates regarding the appropriate methods for investigating population dynamics of tropical stocks. Length-based methods were suggested at that time as a reliable approach for estimating growth and mortality parameters of well-sampled populations. Given the multi-species nature of many fisheries, the method was regarded as inexpensive and rapid, yet providing reliable results.

The use of length-based methods was also facilitated by the design of computer programs for this purpose. The WorldFish Center has played a major role in the development and dissemination of length-based methods for tropical fish stock assessment. This started with the series of ELEFAN programs and culminated in the release of the widely used FAO and WorldFish stock assessment tools, namely FISAT software. At the same time, FAO organized several training courses on the length-based fish stock assessment methods for tropical countries. A network of stock assessments experts – Network of Tropical Fisheries Scientists (NTFS) - was also established to assist fisheries scientists in developing countries.

The main alternatives to the length-based methods are age-based methods that rely on aging fish using skeletal structures (e.g., otoliths). However, the age-based methods are more difficult and expensive than length based methods, which is an important consideration in multi-species fisheries. Logistical, expertise and time constraints may be reasons why the age-based methods have not been widely used in the assessment of multi-species stocks in tropical regions. Over the past two decades, the ability to determine the age of tropical species has increased. There have also been many long-lived, tropical species identified for which length-based methods are not appropriate. This has added to our knowledge and also the need for the age-based methods, where appropriate.

The debate over the use of length-based versus age-based methods in estimating the growth parameters of fish has been going on for a long time. In this issue of NAGA, Pilling and Halls contributed to this debate by retrospectively examining the factors that have driven the selection of the method used in assessing fisheries. Their analysis covers both temperate and tropical fisheries in developed and developing countries. Their results indicate that the use of length-based methods has been generally associated with small, fast-growing species, which suggests that the methods are selected appropriately. It is also interesting, but probably not surprising, to note that age-based methods tend to be employed in stock assessments in developed countries.

There has been growing interest and expertise in developing countries on the age-based methods. We would like to conclude by encouraging the use of age-based methods to validate growth estimates based on the analysis of length frequencies that have been undertaken in the tropics. This could be a great contribution to science and clarification on the robustness of the methods.

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Our commitment:

WorldFish Center is committed to contributing to food security and poverty eradication in developing countries.

We aim for:

- poverty eradication;
- a healthier, better nourished human family;
- reduced pressure on fragile natural resources; and
- people-centered policies for sustainable development.

A way to achieve this:

Through research, partnership, capacity building and policy support, we promote sustainable development and use of living aquatic resources based on environmentally sound management. The research thrusts are:

- improving productivity;
- protecting the environment;
- saving biodiversity;
- improving policies; and
- strengthening national programs.

We believe this work will be most successful when undertaken in partnership with national governments and nongovernmental institutions, and with the participation of users of the research results.

Our corporate makeup:

WorldFish Center is an autonomous, non-government, nonprofit organization, established as an international center in 1977. The Center is an operational entity with programs funded by grants from private foundations and governments.

WorldFish Center is governed by an International Board of Trustees and policies are implemented by the Director General.



WorldFish Center is one of the 16 international research centers of the Consultative Group on International Agricultural Research (CGIAR) that has initiated the public awareness campaign, Future Harvest.