

ACP – EU Fisheries Research Report Number 8

ACP-EU Fisheries Research Initiative

**Proceedings of the INCO-DEV International Workshop on
Information Systems for Policy and Technical Support in Fisheries
and Aquaculture**

Los Baños, Philippines, 5-7 June 2000

Edited by

Enrico Feoli

University of Trieste, Italy

and

Cornelia E. Nauen

Directorate General for Research, European Commission, Brussels, Belgium

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the European Commission concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of frontiers or boundaries.

Copyright belongs to the European Commission. Nevertheless, permission is hereby granted for reproduction in whole or part for educational, scientific or development related purposes, except those involving commercial sale on any medium whatsoever, provided that (1) full citation of the source is given and (2) notification is given in writing to the European Commission, Directorate General for Research, International Relations, 8 Square de Meeûs, B-1049 Brussels, Belgium.

Copies are available free of charge upon request from the Information Desk of the Directorate General for Research, International Relations, 8 Square de Meeûs, B-1049 Brussels, Belgium.

ACP-EU Fisheries Research Report Series

The ACP-EU Fisheries Research Reports are a series of publications that aim to share information about the development of the ACP-EU Fisheries Research Initiative and wider findings generated in order to maximise the impact of its activities. It includes proceedings of workshops and meetings, statements on policy and research activities under the Initiative. An increasing number of these, in fact, transcends the strict framework of ACP-EU bi-regional S&T cooperation, in line with the global nature of the issues at hand.

Abstract

The present report contains the proceedings of the INCO-DEV International Workshop on Information Systems for Policy and Technical Support in Fisheries and Aquaculture, convened in Los Baños, Philippines, 5-7 June 2000. It was convened to address issues associated with the difficult transition from abundance to scarcity in aquatic resources. Reliable information will spread the right perception of the productive capacity and result in more realistic assessment of decreasing benefits and rising costs. Conservation of aquatic biodiversity, ecosystem approaches to fisheries and aquaculture production and food quality and safety along the entire chain from production to the consumer are key concepts that will govern approaches to aquatic living resources in the future. International trade is a major driving force in bringing many of these problems to a head, while also offering opportunities for socio-economic development.

To this effect, scientists and other knowledgeable persons active in relation to these key aspects contribute a panorama of existing information resources, experience with their development, but also difficulties encountered. The papers point out avenues how global public goods necessary for the transition towards sustainability can be either created or more effectively shared. International cooperation based on mutual respect and interest, mobilising the best of science across continents to ensure trustworthy information and knowledge, is confirmed as a most useful approach to support societal demands for sustainable fisheries and aquaculture.

For bibliographic purposes this report should be cited as follows:

Feoli, E. & C.E. Nauen (eds.), 2001. Proceedings of the INCO-DEV International Workshop on Information Systems for Policy and Technical Support in Fisheries and Aquaculture. Los Baños, Philippines, 5-7 June 2000. Brussels, *ACP-EU Fish.Res.Rep.*, (8):132 p.
ISSN 1025-3971

Table of Contents

Introduction by <i>E. Feoli & C.E. Nauen</i>	1
<i>Rationale and wider context</i>	5
Importance of the historical dimension in policy and management of natural resource systems by <i>D. Pauly</i>	5
The European Research Area's contribution to international S&T cooperation for sustainable development with particular emphasis on aquatic resources by <i>C.E. Nauen</i>	11
Using the Internet to access and deliver information worldwide by <i>J.M. McGlade</i>	19
Advances in spatial data storage, retrieval and analysis with emphasis to developing countries needs for management fisheries and aquaculture by <i>M. Dragan, E. Feoli & M. Ferneti</i>	26
<i>Species databases</i>	38
The FishBase Information System: Key features and approaches (Extended summary) by <i>R. Froese</i>	38
Cephalopods: What makes them an ideal group for an Internet database by <i>U. Piatkowski & J.B. Wood</i>	42
Introduction to CephBase www.cephbase.utmb.edu by <i>J.B. Wood, R.K. O'Dor & U. Piatkowski</i>	47
CLAMBASE: A proposal from MNHN-InSys within the framework of a Global Marine Mollusca Database (Summary) by <i>P. Bouchet & N. Bailly</i>	53
Decapod Crustacea – existing databases and concepts (Abstract) by <i>M. Apel & M. Türkay</i>	55
AlgaeBase - The seaweed database by <i>M.D. Guiry & E. Nic Dhonncha</i>	56
Progress towards an information and communication system for aquatic animal diversity by <i>R.S.V. Pullin</i>	62
<i>Other information needs for sustainable development</i>	71
Social and economic database for analysis of fisheries policies: A conceptual framework by <i>U.R. Sumaila & R. Chuenpagdee</i>	71
Economic drivers and approaches to integrate economic factors into policy formulation and management - key problems (Abstract) by <i>U.R. Sumaila</i>	76
An overview of economic valuation techniques: A highlight on information needed for their application in developing countries by <i>A. Fauzi</i>	77
Introducing ITQs in Icelandic fisheries: Information needs by <i>T. Matthiasson</i>	83
Ecosystem based approaches to policy and management - key problems (Abstract) by <i>G. Fontenelle</i>	90
The multispecies model OSMOSE: Key features and link with FishBase (Extended summary) by <i>Y. Shin & P. Cury</i>	91

Seafood health standards and trade- key problems <i>by C.A. Lima dos Santos</i>	94
Sanitary and Phyto-Sanitary Standards (SPS) and relevant environmental regulations in relation to trade in fishery products (Abstract) <i>by A. Tall</i>	105
<i>Developing country and user perspectives</i>	106
Developing country participation in FishBase. Critical biodiversity, fisheries management and trade issues <i>by B. Fabres</i>	106
Common names in FishBase: Key to more information on fish (Extended summary) <i>by M.L.D. Palomares & D. Pauly</i>	111
Africa: Bypassed or sidelined? <i>by K.N.I. Bell</i>	115
Information needs of small-scale fishing communities in South India (Abstract) <i>by S. Babu</i>	122
Coral Reef Information System and management in Hainan Province (Summary) <i>by Wang Lu</i> ..	123
Serving the information needs for Philippine aquatic resources research and development: The role of PCAMRD-DOST (Extended summary) <i>by C.R. Pagdilao, R. Hermes & E.C. Zaragoza</i> ..	125
<i>Annex</i>	128
List of participants	128

Introduction^a

by

Enrico Feoli^b & Cornelia E. Nauen^c

Background

These are the proceedings of an INCO -DEV International Workshop on Information Systems for Policy and Technical Support in Fisheries and Aquaculture, convened 5 -7 June 2000 in Los Baños, Philippines. The workshop focused on aquatic resources, which are globally in a state of crisis as reflected in estimates by the Food and Agriculture Organization of the UN that >75% of capture fisheries are overfished, fully exploited or in a state of recovery. Aquaculture production already supplies supposedly some 30% of fishery products for human consumption. More than 40% of all fishery and aquaculture production entered international trade in the 90s, contrary to other staple foods, namely rice and other cereals. Furthermore, harmful algal blooms (HABS) with their significant human health risks and impact on fish kills, compounded by species invasions, e.g. as engendered by ballast water exchange and other sources of species introductions, have increased substantially in recent times.

This requires developing new strategies to adapt production and consumption patterns with a view to ensuring harmony with the environment in the face of globalisation. In the context of fisheries resources, this implies focus on rehabilitation and facilitating progressive replacement of single stock-based, technocratic management approaches by ecosystem -based ones, which can also be sensitive to the economic, social and political dimensions of resources use. Reliable information on which to base policy and investment decisions is crucial to achieve societal agreement for such rehabilitation and deference of benefits.

Conventional approaches towards fisheries management have not reverted the general trend of ecosystem degradation and productivity loss and are ill equipped to address the new dimension of economic development epitomised by the above highlights. Introduction of ecosystem approaches to policy and management in the above comprehensive sense would be in line with the Ja karta Mandate under the Convention of Biological Diversity and similar demands endorsed in many international fora.

- a) Presented at the INCO-DEV International Workshop on Information Systems for Policy and Technical Support of Fisheries and Aquaculture, Los B años, Philippines, 5-7 June 2000;
- b) Department of Biology, University of Trieste, Via L. Giorgieri 10, 34127 Trieste, Italy. E-mail: feoli@univ.trieste.it
- c) European Commission, Directorate General for Research, 8, Square de Meeûs, 1049 Brussels, Belgium. E-mail: cornelia.nauen@cec.eu.int

Common names in FishBase: Key to more information on fish^a

by

Maria Lourdes D. Palomares^b and Daniel Pauly^c

Extended Summary

Claiming that the common (or 'local') names of fish are one of their most important attributes is an understatement. In fact, common names are all that most people know about most fish. This is evidenced by the increasing number of people accessing information on fish from the FishBase website through common names (19% of 1.6 M hits in February 2001; <http://19893.230.6/WebUse.cfm>). The facility of searching information using common names is made possible by the compilation in FishBase of about 109,000 common names in 205 languages for 64% of the more than 25,000 species of fish in the world (Froese & Pauly, 2000) .

In FishBase, the common names of a species used in different localities and languages are associated with its valid scientific name (see Froese, this vol.; Froese & Pauly, 2000). The most obvious use of common names in FishBase is thus to identify the scientific name of a fish, and thence to key biological information on the species, images depicting the species (with some in their normal habitat), maps showing its geographic range as well as global catches and aquaculture production data if any (from FAO databases). FishBase staff has strived to ensure that common names (at least the official English names and their variants) for the commercially important species of fish in the world are well covered in the database (see Palomares & Pauly, 2000). FishBase also includes common names used in trade as well as names of products, e.g., 'hamsi macunu' (Turkish; OECD, 1990), i.e., ground anchovy (*Engraulis encrasicolus*) packed in stone jars, covered with a mixture of common salt, saltpetre, bay salt, sal prunella, and a few grains of cochineal and allowed to ripen for 6 months before canning.

a) Updated version of a paper presented at the INCO -DEV International Workshop on Information Systems for Policy and Technical Support of Fisheries and Aquaculture, Los Baños, Philippines, 5-7 June 2000

b) FishBase Team, ICLARM, Collaborators' Center, IRRI, Los Baños, Laguna, Philippines. E-mail: m.palomares@cgiar.org;

c) Science Advisor, FishBase Project, and Professor, Fisheries Centre, 2204 Main Mall, University of British Columbia, Vancouver, B.C., Canada, V6T 1Z4. E-mail: d.pauly@fisheries.ubc.ca.

Other, less obvious, uses are to:

- ?? Preserve and make widely accessible ethno-ichthyological knowledge from endangered cultures (Palomares & Pauly, 1993; Palomares *et al.*, 1993; Pauly *et al.*, 1993);
- ?? Test qualitative and quantitative hypotheses about traditional classification schemes (see, e.g., Hunn, 1980; Berlin, 1992; Palomares *et al.*, 1997);
- ?? Enable mutual verification of facts from ethno-ichthyology and its scientific counterpart (see Johannes, 1981); and
- ?? Follow the evolution of the linguistic subset represented by fish names, in space and through history and test related hypotheses.

Since common names in FishBase are each assigned to a specific country and language uniquely defining a culture, a large fraction of what people belonging to a certain culture know about fishes (i.e., traditional, or local knowledge) can be captured through the common names page. Such knowledge on fish comes in various forms. One of the most useful to fish biology is the differentiation of species from one another, similar to the concept followed by scientists in giving scientific names to species. One example of local knowledge in this form is the information provided by an old Soninké fisher from Bakel (Senegal), Diabé Sow, who differentiates the 'silanne' (*Bagrus docmak*) and the 'dibbabe' (*Bagrus bajad*) as not belonging to the same species, due to differences in their barbels and adipose fin (Adams-Sow, 1996).

Another form of local knowledge is the etymology of common name. One example is the Shuswap name 'coctci'tcin' (used in British Columbia, Canada) for *Mylocheilus caurinus*, which is a Secwépemc word meaning, "having a bloody mouth" (see Compton *et al.*, 1994). Another is the Nass-Giksan (Canada) name, 'ha la mootxw', for *Thaleichthys pacificus* meaning 'for curing humanity' and refers to the oil which is extracted from this fish and used as medicine and as food preservative (Drake & Wilson, 1991).

Biological information on fish species accumulated by fishers through years of experience and living near or at the sea can also be captured through common names. This is best exemplified by the work of Johannes (1981) who reports, e.g., that according to fishers, the 'bebael' (Palauan name for *Siganus punctatus*), spawns in schools around new and full moons, during the low tide, near the outer reef edge with spawning activity peaking in October or November.

In the same manner, ecological information by experienced fishers is recorded. One good example is the differentiation applied by the Soninké (spoken in and around Bakel, Senegal) names given to white colored *Labeo senegalensis* living in sandy bottoms, 'dolla', and the black colored ones living in rocky areas, 'dolla binne' (Adams-Sow, 1996).

A final, amusing example is provided by a poem for school children penned by Mr. Javier C. Carcelar (a retired teacher) in Mapun (the language of the Cagayanon people from Pawalan, Philippines), where he recounts how the 'tul-ungan' (i.e., 'bumphead'), *Cheilinus undulatus*, got the bump on its head:

“Daw ano kasagbak di danen en tanan, Nakabatyag tul-ungan kanen dumalagan, Ta iya na kakulba manunggol pasangaan, Bumalikid kanen takong din may paryo apugan.”

“Everyone was happy and made a lot of noise, and even the humphead wrasse ran to join the fun, but it crashed into a brain coral because of its haste, and that's how he got the bump on his head” [translation by Yasmin Arquiza and Ernesto Sta. Cruz; see Arquiza & White, 1994].

Information potentially useful from traditional or local knowledge is considerable and cannot be put aside. FishBase provides the infrastructure to capture and preserve such knowledge for future use, to the extent that it pertains to fishes. However, since this knowledge is language- and culture-specific, FishBase staff hope that collaborators wishing to widen the coverage of their own ethno-ichthyological knowledge as captured in the common names page of FishBase will eventually take in the responsibility of improving its contents, especially now that the facility of entering and/or modifying common names records is available through the Internet (www.fishbase.org/search.cfm).

Further reading

- Adams-Sow, A. (ed.), 1996. Poissons et Pêches du Fleuve Sénégal. Dakar, Sénégal, Fédération des Paysans Organisés du Département de Bakel, 106 p.
- Arquiza, Y. & A. White, 1994. Tales from Tubbataha: natural history, resource use and conservation of the Tubbataha reefs, Palawan, Philippines. Puerto Princesa City, Palawan, Philippines, Bandillo ng Palawan Foundation, Inc., 73 p.
- Berlin, B., 1992. Ethnobiological classifications: principles of categorization of plants and animals in traditional societies. Princeton, Princeton University Press, 335 p.
- Christensen, V. & D. Pauly, 1993. Trophic models of aquatic ecosystems. *ICLARM Conf.Proc.*, 26:390 p.
- Compton, B., M. Thomas & J. Michel, 1994. The sucker: a fish full of bones, coyotes, coots and clam shells. pp. 54-78. *In: Collected papers of the 29th International Conference on Salish and Neighbouring Languages held 11-13 August 1994 at the Salish Kootenai College, Pablo, Montana.*
- Drake, A. & L. Wilson, 1991. Eulachon, a fish to cure humanity. University of British Columbia, Canada, UBC Museum of Anthropology, Museum Note No. 32, 37 p.
- Froese, R., 2001. The FishBase information system: key features and approaches. Brussels, *ACP-EU Fish.Res.Rep.*, (8):38-41.
- Froese, R. & D. Pauly, 2000. FishBase 2000. Concepts, design and data sources. Los Baños, Laguna, Philippines, ICLARM, 344 p. distributed with 4 CD ROMs.
- Hunn, E., 1980. Sahaptin fish classification. *Northw.Anthropol.Res. Notes*, 14(1):1-19.
- Johannes, R.E., 1981. Words of the lagoon: fishing and marine lore in Palau District of Micronesia. Berkeley, University of California Press, 245 p.
- Organisation for Economic Co-operation and Development. 1990. Multilingual dictionary of fish and fish products. Oxford, Fishing News Books.
- Palomares, M.L.D. & D. Pauly, 1993. FishBase as a repository of ethnoichthyology or indigenous knowledge of fishes. Paper presented at the International Symposium on Indigenous Knowledge (IK) and Sustainable Development, 20 -26 September, Silang, Cavite, Philippines. (Abstract in *Indigenous Knowledge and Development Monitor*, 1(2):18
- Palomares, M.L.D. & D. Pauly, 2000. The COMMON NAMES table. pp. 85 -92 *IN* R. Froese & D. Pauly (eds.). FishBase 2000. Concepts, design and data sources. Los Baños, Laguna, Philippines, ICLARM, 344 p.
- Palomares, M.L.D., R. Froese & D. Pauly, 1993. On traditional knowledge, fish and database: a call for contributions. *SPC Trad.Mar.Resourc.Manage.Knowl.Info. Bull.*, (2):17-19.
- Palomares, M.L.D., C.V. Garilao & D. Pauly, 1997. On the biological information content of common names: a quantitative case study of Philippine fishes. pp. 861-866. *IN* B. Séret & J.-Y. Sire (eds.). Proceedings of the 5th Indo-Pacific Fish Conference, Nouméa. Paris, Société Française d'Ichtyologie.
- Pauly, D., M.L.D. Palomares & R. Froese, 1993. Some prose on a database of indigenous knowledge on fish. *Indigenous Knowledge and Development Monitor*, 1(1):26-27.