Deliverable D4.1

Version:	FINAL
Date:	30/04/11
Author:	ICLARM
Dissemination status:	PU
Document reference:	

Deliverable_D4.1_M9-18

Feedback report about data use
WP4: M9-18

STATUS: FINAL VERSION

Project acronym:	BIOFRESH
Project name:	Biodiversity of Freshwater Ecosystems: Status, Trends, Pressures, and Conservation Priorities
Call and Contract:	FP7-ENV-2008-1
Grant agreement no.:	226874
Project Duration:	01/11/2009 – 30.04.2014 (54 months)
Co-ordinator:	Leibniz-Institute of Freshwater Ecology and Inland Fisheries at Forschungsverbund Berlin e.V., Germany
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	ICLARM, International Center for Living Aquatic Resources Management, Malaysia
	IRD, Institut de Recherche pour le Développement, France
	UDE, Universität Duisburg-Essen, Germany
	IUCN, International Union for Conservation of Nature, Switzerland
	UOXF.AC, Oxford University, UK
	UB, Universitat de Barcelona, Spain
	UFZ, Helmholtz Zentrum für Umweltforschung, Germany
	UCL, University College of London, UK
	EAWAG, Eidgenössische Anstalt für Wasserversorgung, Abwasserreinigung und Gewässerschutz, Switzerland
	UCBL, Université Claude Bernard - Lyon 1, France
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	ECOLOGIC, Ecologic GmbH Institut für Internationale und Europäische Umweltpolitik, Germany
	EC-ERC, Commission of the European Communities - Directorate General Joint Research Centre, Italy
	UD, University of Debrecin, Hungary
	NRM, Naturhistoriska riksmuseet, Sweden

BIOFRESH

Biodiversity of Freshwater Ecosystems: Status, Trends, Pressures, and Conservation Priorities

Project no. 226874

Large scale collaborative project

Deliverable number	D 4.1
Deliverable name	Feedback report about data use
WP no.	WP4
Lead Beneficiary (full name and Acronym)	WorldFish (formerly ICLARM)
Nature	Written report
delivery date from Annex I (proj. month)	M9-18
Delivered	Yes
Actual forecast delivery date	2011-04-30
Comments	

Project funded by the European Commission within the Seventh Framework Programme Dissemination Level		
PU	Public	✓
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

This project is supported by funding from the specific programme 'Cooperation', theme 'Environment (including Climate Change)' under the 7th Research Framework Programme of the European Union.

Name of the Authors	Name of the Partner	Logo of the Partner
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In case the report consists of the delivery of materials (guidelines, manuscripts, etc)

Delivery name	Delivery file name	From Partner	To Partner

Introduction

This deliverable corresponds to the Task 4.1 of the WP4 to follow up the encoding and use of the data and information following the data requirements of the research workpackages WPs4-7 (see D3.1a). This report covers the entire first period (M1-18). The report month 9 was skipped because we realised it was too early in the project, but the first report for the task 3.2 (D3.2) covered actually the report 4.1 month 9 (same for Tasks 5.1, 6.1, 7.1).

The first period was mainly used for fish information. The second period will focus on other groups.

Use of data

Up to now, the data mainly used for this workpackage are the data owned by each of the partner, except for the shapefiles of ecoregions.

Efforts are being made to complete the metadatabase in order to integrate these partner datasets in the portal.

Work realised

The completion of the databases from Stygofauna Mundi (Botosaneanu 1986) and from Limnofauna Europaea (Illies 1978; Hof et al. 2008) are the major achievements for that period (see D3.2a for details): The Stygofauna Mundi contains 36 groups and 2,338 species-group taxa in total, with 2,839 assignments in 120 ecoregions , 2,816 in 158 countries, 3,328 in 32 habitats; the Limnofauna Europaea contains 14,020 species-group records with their assignment in 43 habitats, and 70,290 assignments 25 ecoregions.

Occurrences data were collected for the Ebro catchments (about 200) and assessed.

Work is ongoing to assign fish species to WWF freshwater ecoregions.
Work is ongoing to assign fish species to European catchments with FVB.IGB.

More sophisticated tools were develop to match names between lists (e.g., for matching IUCN names, see below).

Dataset identification and assessment

The following datasets were identified, and assessed:
- Limnofauna Europaea, see above;
- ca 80 check-lists from freshwater bodies entered or checked in FishBase (10 remains to enter, or to check when it is updates), ca. 20 databases on websites. About half of the data remain to assign to proper geographical areas as requested by the WP4 (see D3.2a);
ca. 500 freshwater ecosystems are recorded in FishBase (rivers, lakes, main catchments) with

half of them with a reasonably complete list of fish species. This represents >33,000 records with ca. 1,300 entered and 2,000 updated during the period.
- The last update list of IUCN for fishes (2010-4) contains 9,067 items of which about 8,850 could be matched in FishBase (note that this part of the work is done in collaboration with Catalogue of Life in another European project, 4D4Life). The remaining ones are non-described species, and stocks. In the second period, we will match these stocks with the ecosystem to match the WP4 needs. Work is ongoing to help IUCN to correct about 200 names that are misspelled, under another combination, or real synonyms.
- Shape files for the Freshwater Ecoregions of the World were retrieved and put in the portal.

In addition, a complete cross-check between FishBase and Catalog of Fishes was undertaken about the validity of fish species and names. This is a major task because it helps to make interoperable much more datasets through names (e.g., with GBIF occurrences data) , including their synonyms, misspellings, and different combinations.

The decision was taken by the project to create a database on the freshwater fish species, on the basis of the fauna published by Kottelat and Freyhof (2007). This database will complete the information that FishBase does not or cannot manage like infra-national information, (e.g., sites and detailed information on distribution), or comprehensive taxonomy.
This database will aggregate the results of previous European projects on freshwater fishes (e.g., EFI+). Discussion are ongoing about data structure and data management.

Adequacy and gaps in datasets

The first issue is to evaluate the completeness of datasets. On the one hand, it is rarely possible to ascertain it, on the other hand it would be satisfying to develop some criteria against which we could develop one "completeness" index. Several attempts were done but either are too flexible, or require too much work. Work ongoing.

The second issue is the difficulty of overlapping various geographical systems (e.g., Freshwater Ecosystems of the World and catchments) to derive information gathered under one system to the other. It requires to establish joint tables, which is time consuming, and not entirely satisfying (e.g., one has to check the results visually after the automatic assignments).

The third issue is that names and occurrences data require time-consuming work to clean them. In most of the cases, the WPs have to check them as well and discard obvious outliers or not reliable data. The development of reliability indices is needed if we want to provide data quickly usable in various analyses.

The fourth issue is to get some of the datasets published in gray literature that could be useful to assign species to relevant ecosystem and geographical areas (not to speak about language issues). These studies are often cited in papers, but usually hard to localize and get.

The two first issues are more about adequacy, the third one about gaps.