

The Global Water System Lexicon

A GWSP Fast-Track Activity

Introduction

The Global Water System Lexicon is one of the fast-track activities initiated at the first meeting of the Scientific Steering Committee of the Global Water System Project in February 2005. This document gives a brief description of the aims of the Lexicon and the process of its implementation.

Background

How are human actions changing the global water system and what are the environmental and socio-economic feedbacks arising from the anthropogenic changes in the global water system? – This is the key overarching question that the Global Water System Project (GWSP) addresses. In order to take a *holistic view* of the Global Water System, and to answer questions concerning the key mechanisms of anthropogenic and environmental change, it is necessary to draw from and integrate the viewpoints of *different scientific disciplines*.

In the GWSP the integration of the different scientific perspectives on the overall system will be done according to the *principles of systems science*. Fundamental for systems science is the identification/cognition of the overall structure of the system and to describe the elements of the structure. The components, elements and interlinkages considered important to answer the key research question will make up the '*conceptual model*' of the Global Water System. A problem in building and describing such a conceptual model is that the same term may have various definitions and meanings in different scientific disciplines – and even *within* the scientific disciplines involved. To get a consistent description and understanding of the Global Water System it is therefore necessary to make precise *definitions of the terms* used to describe (name) the system's components and their characteristics. The collection of all of these definitions constitutes the Global Water System Lexicon.

The Global Water System Lexicon

Since there are already many water-related lexicons available online¹ the Global Water System Lexicon will *focus* on terms used to describe the *conceptual model* of the Global Water System, and will be tailored to cover the *research niche of the GWSP* - viz. to (i) focus on global environmental change, (ii) be science driven but policy-relevant, (iii) take a global perspective but taking local- and watershed processes into account, (iv) take a broad temporal perspective considering past, present and future time domains, (v) be interdisciplinary and integrative, and finally (vi) focus on fresh water. In addition to that, the Lexicon should support the *goals and visions of the GWSP*, which are to (a) gain a new understanding about the global water system, (b) refine the society's view of water and (c) create a vision of future possible states of the global water system.

Each term used to describe the Global Water System will get *one particular definition* agreed on by the GWSP community – although other definitions often used for the term might be listed in order to get an overview of different disciplinary perceptions. The terms in the Lexicon and their descriptions will be in English, although translations of the terms into other languages might eventually be provided.

A novel feature of the proposed development of the Lexicon will be an open *online* discussion and debate on definitions of the terms that can be added, modified and extended as Lexicon entries *online*. Such *interactive participation* of scientists will contribute usefully to the GWSP goal of promoting a discourse between the various scientific disciplines. In addition, the Lexicon might eventually incorporate the option of *linking* entries to detailed *articles* relevant to the terms.

¹ e.g., UNESCO International Glossary of Hydrology (<http://www.cig.ensmp.fr/~hubert/glu/aglo.htm>), Water Words Dictionary of the Nevada Division of Water Resources (<http://water.nv.gov/Water%20planning/dict-1/ww-index.htm>), USGS Water Resources Glossaries (<http://water.usgs.gov/glossaries.html>)

The GWS Lexicon will *not* be a *consolidation* of all available/published definitions of water-related terms but concentrate on the integrative and inter-disciplinary purpose it has for the GWSP. Furthermore, the Lexicon will *not* be an *encyclopaedia*, because that can be developed only at a later stage of the GWSP implementation (possibly using the detailed articles mentioned above).

Ultimate Goal

The purpose and intent of the GWS Lexicon is to provide the basis for a *coherent description* of the *elements* of the Global Water System by giving a collective set of term *definitions agreed by all project participants*. The GWS Lexicon will enable a consistent description of the Global Water System and its components and will help *reduce miscommunications* between scientists from various disciplines that are caused by differing definitions of terms in different scientific fields or by divergent views of the same system. Discussions related to terms with multiple meanings used by different scientific disciplines will be included to promote awareness of any differences, and to show why a particular definition is chosen and preferred within the GWSP. In addition, linking terms visually using a *graphical notation* will be used to provide a first overview of how the conceptual model of the Global Water System can be described.

Implementation

As a Fast-Track Activity, the Lexicon will *start simple* and will evolve and mature in parallel with the entire Global Water System Project. The development of the Lexicon will be *linked* with other GWSP activities, especially with the fast-track activity 'Digital Atlas', with the development of an extensive information system, and with other projects related to the activities 4.2 (The GWS-Discourse: Integrating the Natural Science and Social Science Approaches to the Global Water System), and 4.3 (development of world water models and the analysis of scenarios) as described in the GWSP Framework Document.

The *International Project Office (IPO)* of the GWSP will *develop* and *host* the infrastructure needed for the Lexicon. The first set of definition of terms will mainly be provided and discussed by members of the Scientific Steering Committee and the IPO. For the initial release only the IPO will be able to make new entries into the Lexicon. Later versions of the Lexicon will provide for possible editing by GWSP participants. The IPO will *check* the definitions of the terms for consistency on a regular basis.

A growing number of articles and (edited) discussions may finally form the basis for a Global Water System Encyclopaedia.

Get Involved

If you are interested in getting involved in the development of the Global Water System Lexicon or if you have any questions related to this Fast-Track Activity please contact Marcel Endejan (see contact information given below).

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