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Rev 16

COMPENDIUM OF SOURCE DOCUMENTS FOR DRAFTING THE GUIDELINES TO COMPILE WATER ACCOUNTS AND STATISTICS

With specific relevance to the guidelines

1	World Meteorological Organization.- Guide to Hydrological Practices.- Volume I Hydrology – From Measurement to Hydrological Information (WMO No. 168) 2008 296 pages http://www.wmo.int/pages/prog/hwrp/publications.php *Detailed methodological guidance for the collection of data about the different components of the natural water cycle. It provides detailed explanations on how the different monitoring networks operate.*	WMO
2	World Meteorological Organization.- Climate and Meteorological information requirements for water management.-Technical Report Series No.1 - WMO 2012 (WMO, No. 1094) January 2012 117 pages http://www.wmo.int/pages/prog/hwrp/publications.php *The document provides guidance on how to use climate and meteorological information for a better understanding of the water cycle. It shows the linkages and synergies between the different data collection processes for water resources management.*	WMO
3	Eurostat.- Data Collection Manual for the OECD/Eurostat Joint Questionnaire on Inland Waters September 2008 157 pages http://ec.europa.eu/eurostat/ramon/coded_files/OECD_ESTAT_JQ_Manual_version_2_21.pdf *Descriptions about the different data items in the OECD questionnaire. Guidance on the compilation of the questionnaire and the explanation of the different items.*	Eurostat
4	FAO Aquastat publications can be found at: http://www.fao.org/nr/water/aquastat/catalogues/index2.stm Examples: FAO Aquastat.-Proceedings of expert workshop on water resources and use assessment methodologies in Latin America 2011 (Report in Spanish and English) 42 pages *Explains the data collection practices in Latin America based on a workshop with experts from water ministries or agencies in countries.*	FAO

5	FAO Aquastat.-Cooling water for energy generation and its impact on national-level water statistics 2011 4 pages *Concepts about water abstraction for energy generation in thermoelectric plants. Useful as a module to explain a specific issue.*	FAO
6	FAO.- Crop evapotranspiration - Guidelines for computing crop water requirements - FAO Irrigation and drainage paper 56 1998 15 pages http://www.fao.org/docrep/X0490E/X0490E00.htm Document as PDF in http://www.engr.scu.edu/~emaurer/classes/ceng140_watres/handouts/FAO_56_Evapotranspiration.pdf *Crop requirements of water.*	FAO
7	FAO Subregional Office for East and Southern Africa.- Crop Water Requirements and Irrigation Scheduling (Developed by Andreas P. Savva and Karen Frenken).- Irrigation Manual, Module 4. 2002 122 pages ftp://ftp.fao.org/agl/aglw/docs/irrigman4.pdf *Detailed guidelines for estimating crop requirements of water using reference evapotranspiration and coefficients.*	FAO
8	FAO.- Review of World Water Resources by Country.- (Water Report 23) 2003 127 pages http://www.fao.org/docrep/005/Y4473E/Y4473E00.HTM *The report presents the concepts and methodology applied in order to compute country-level water resources data. It presents and analyses the key findings at both global and regional levels. The report focuses on the work done through the Aquastat surveys to collect and analyse available information on water resources for all countries in the world.*	FAO
9	Healy, R.W., Winter, T.C., LaBaugh, J.W., and Franke, O.L., 2007, Water budgets: Foundations for effective water-resources and environmental management: U.S. Geological Survey Circular 1308 90 pages http://pubs.usgs.gov/circ/2007/1308/	USGS
10	US Geological Survey.-Guidelines for Preparation of State Water-Use Estimates for 2005 2007 28 pages http://pubs.usgs.gov/tm/2007/tm4e1/	USGS

	The report provides guidelines for preparation of State water-use estimates. Water-use categories, data elements, aggregation levels, and documentation requirements are defined for the 2005 national water-use compilation. This information is useful both to those who prepare the estimates and to those who use the data.	
11	US Geological Survey.-Documentation of Methods and Inventory of Irrigation Data Collected for the 2000 and 2005 U.S. Geological Survey Estimated Use of Water in the United States, Comparison of USGS-Compiled Irrigation Data to Other Sources, and Recommendations for Future Compilations. Scientific Investigations Report 2011–5166 2011 72 pages http://store.usgs.gov/b2c_usgs/b2c/start/(xcm=r3standardpitrex_prd&carea=0000000100&citem=00000001000000000003)/.do *The purpose of this report is to document the data sources and methods used by each WSC to estimate crop irrigated acreage and irrigation withdrawals, to compare irrigation data reported in the 2005 USGS water-use compilation to data available from other published sources, to make recommendations about available sources of data and methods used to estimate irrigation withdrawals and irrigated acreage, and to recommend guidelines for documenting methods and data sources for future water-use compilations.*	USGS
12	US Geological Survey.- Estimated Use of Water in the United States in 2005. Circular 1344. 2009 53 pages http://pubs.usgs.gov/circ/1344/ *The report presents water-use estimates by source and by State for eight categories of water use for 2005. Sources include surface water and groundwater, both fresh and saline. Categories include public supply, domestic, irrigation, livestock, aquaculture, industrial, mining, and thermoelectric power*	USGS
13	US Geological Survey.- Methods for Estimating Water Withdrawals for Mining in the United States, 2005.- Scientific Investigations Report 2009–5053 2009 14 pages http://pubs.usgs.gov/sir/2009/5053/ *The report documents methods used to estimate abstractions of fresh and saline groundwater and surface water for mining during 2005 for the United States, Puerto Rico, and the U.S. Virgin Islands. Abstractions of water were estimated for nonfuels- and coal-mining operations in all States and for oil and gas operations in six states. Nonfuels mining includes extraction of*	USGS

	metallic and nonmetallic minerals. Metallic minerals include ores of iron, copper, lead, zinc, gold, silver, ferroalloys, uranium, radium, vanadium, and others. Nonmetallic minerals include dimension and crushed stone, sand, gravel, various clays, chemical and fertilizer minerals, and various other nonmetallic, nonfuels minerals. Coal includes bituminous coal, lignite, and anthracite. Oil and gas includes crude petroleum, natural gas, and natural gas liquids.	
14	US Geological Survey.-Methods for Estimating Water Withdrawals for Aquaculture in the United States, 2005.- Scientific Investigations Report 2009–5042 2009 14 pages http://pubs.usgs.gov/sir/2009/5042/pdf/sir2009-5042.pdf *The report documents methods used to estimate withdrawals of fresh ground water and surface water for aquaculture in 2005 for each county and county-equivalent in the United States, Puerto Rico, and the U.S. Virgin Islands by using aquaculture statistics and estimated water-use coefficients and water-replacement rates.*	USA
15	US Geological Survey.- Method for Estimating Water Withdrawals for Livestock in the United States, 2005.- Scientific Investigations Report 2009–5041 2009 7 pages http://pubs.usgs.gov/sir/2009/5041/pdf/sir2009-5041.pdf *This report documents a method used to estimate withdrawals of fresh ground water and surface water for livestock in 2005 for each county and county equivalent in the United States, Puerto Rico, and the U.S. Virgin Islands by using estimated water-use coefficients and livestock-population data. Categories of livestock included dairy cattle, beef and other cattle, hogs and pigs, laying hens, broilers and other chickens, turkeys, sheep and lambs, all goats, and horses (including ponies, mules, burros, and donkeys).*	USA
16	INEGI (National Statistics and Geography Institute of Mexico).- Methodology for the Preparation of the 2009 Economic Censuses. 2010 63 pages http://www.inegi.org.mx/est/contenidos/espanol/proyectos/censos/ce2009/metodologia.asp *Concepts and definitions for the preparation of the economic censuses in Mexico. Includes the census applied to the establishments that perform water supply and sanitation activities (ISIC 36 and 37)*	Mexico
17	CONAGUA.- Standard Method for the Determination of the Availability of Water (NOM-011-CNA.-2000 April 2002 16 pages *Concepts and definitions for the preparation of the economic censuses in*	Mexico

	Mexico. Includes the census applied to the establishments that perform water supply and sanitation activities (ISIC 36 and 37)	
18	Australian Bureau of Meteorology.- Pilot National Water Account. February 2010 359 pages *http://www.bom.gov.au/water/nwa/2010/nwa/pilot-national-water-account* *Demonstration document with the water accounts of Australia and the methodology used to compile them. It presents the results for different regions and catchments.*	Australia
19	US Environmental Protection Agency (EPA).- Volunteer Stream Monitoring: A Methods Manual.- Office of Water 4503F, EPA 841-B-97-003 November 1997 227 pages http://water.epa.gov/type/rsl/monitoring/stream_index.cfm *Complete and clear overview of the main variables that need to be monitored for water resources management. Good explanation of the methodologies, especially for water quality assessment*	USA
20	Water Quality Assessments - A Guide to Use of Biota, Sediments and Water in Environmental Monitoring -Second Edition. UNESCO/WHO/UNEP 1996 609 pages www.who.int/**water**_sanitation.../resources**quality**/wqabegin.pdf *Publication intended to harmonize and synthesize the assessment of the hydrological regime and quality changes brought about by nature and man. Offers good descriptions of the methodologies available for monitoring water quality.*	UNESCO
21	Manual on Environment Statistics, Chapter 4, Emission to Water (Materials used in the Subregional Training Workshops on Environment Statistics in the ESCAP region, 2000-2001).- ESCAP September 2001 85 pages *http://www.unescap.org/stat/envstat/envstatws.asp* *Offers guidance for the collection of water quality data. The publication does not seem to be finished.*	UNESCAP
22	Dutch Waterflow Accounts, with preliminary results for 2003 and 2004. Eurostat Report. Graveland, C. (2006). Eurostat paper, describes compilation practice in 2005 / 2006. Available at: http://www.cbs.nl/nl-NL/menu/themas/macro-economie/methoden/dataverzameling/overigedataverzameling/default.htm. *The water accounts have been developed by Statistics Netherlands since the last part of the nineties. In 2005 / 2006 compilation had to be updated and improved in order to come up with good quality data and to achieve reasonable coverage again after some water statistics were stopped for couple of years.*	Netherlands

23	Annual publication by CBS on Environmental Accounts describing Dutch environmental Accounts including Water Accounts with a chapter (ch.4) on water use & water emissions and Thematic chapters on the waterbalance (ch.9) and on water quality (ch.10). Environmental Accounts of the Netherlands 2011 (2012, chapters 4, 9 & 10).	Netherlands
24	Annual publication by CBS on Environmental Accounts with a chapter (3) on water use, water emissions and regional Water Accounts. Environmental Accounts of the Netherlands 2010 (2011, chapter 3).	Netherlands
25	Annual publication by CBS on Environmental Accounts with chapters on water use, on water emissions and on regional Water Accounts. Environmental Accounts of the Netherlands 2009 (2010, chapter 3, 10, 11).	Netherlands
26	StatLine table (=Statistical database NSI (Dutch CBS)): Milieurekeningen (Environmental Accounts); watergebruik (Water use).	Netherlands
27	VEWIN, Association of Dutch Water Companies. VEWIN; Website contains all kinds of reports, regulations, and statistics of water (use) at the national scale and of water (supply) companies within the country. It shows for example annual reports with water statistics from all water companies in the country. It shows Use and supply. Figures contain abstractions (ground and surface water), deliveries to households and to industry.	Netherlands
28	Compendium voor de Leefomgeving / Compendium of the Lived Environment (by CBS, PBL, en WUR) (is in Dutch): State of green economy assessment / report – National level. *It's a web based State of the Environment in the Netherlands, gives facts and figures of the Dutch environment (unfortunately only in Dutch).* *Show all kind of environmental information including water, water use, water quality, water management, Water pollution control, water infrastructure within the country.* Compendiumvoordeleefomgeving (National Compendium for , Dossier watergebruik (Dossier water use);	Netherlands
29	Improvement of waterflows in the National Water Balance; Water Stocks; feasibility of Water Balances per River basin. Graveland, C. and K. Baas (2012). Final report. Discussion paper (201222). The Hague/Heerlen, 2012. http://www.cbs.nl/NR/rdonlyres/4D4F4520-6A71-4477-A358-308C0A1ABA37/0/201222x10pub.pdf. *Report describes research project conducted by Statistics Netherlands in 2011 and 2012 about improving the national water balance as well as on compilation of water balance data per river basin. The regionalisation of water statistics is listed as an international priority, parallel to further improving national data on water flows. Although in recent years the NSI already has compiled national and regional figures on abstraction of groundwater and surface water, on water use by households and for the different industries, water data for compiling a water balance for the national territory, as well as for the river basins, by no means was complete and could be improved in several respects. The scope of the research*	Netherlands

	encompassed all incoming and outgoing flows of fresh water and an assessment of the fresh water stocks in the Dutch territory. *The objectives of the research in detail were: 1.Start from existing data, and compile a national water balance for the Dutch national territory for a single year (2009). For that purpose missing parts should be filled in, while improving the quality of the data underlying the different parts of the balance and; 2.* *Collect data at disaggregated level and attempt to compile water balance data for the country's four river basins districts and; 3. When data would prove to be sufficient, develop method and make assessment of existing stocks (resources) of freshwater in the country for groundwater, surface water and soil water.*	
30	Water abstraction and use at the river basin level, Final Report on EU Water Statistics Grant. Statistics Netherlands. Baas, K. and C. Graveland (2011). The Hague/Heerlen, 2011. Discussion paper (201113). ISSN: 1572–0314. http://www.cbs.nl/NR/rdonlyres/ACFC0821-CBA7-4A9E-B4F8-71797170E095/0/2011x1013.pdf *This report describes a project in which methods have been developed to compile water abstraction and water use data at the level of River Basins in the Netherlands, for the years 2004-2008. In general, the methods used build upon existing national data and compilation practices on water abstraction and drinking water use. Compilation aspects is dealt with in detail. An additional objective of the project was to improve observation and / or estimation of water use where necessary and possible. In order to enable the regional distribution of national water data, in the first phase of the project a linkage between municipalities, River Basins as well as Public Water Supply (PWS) areas has been established.*	Netherlands
31	'Living with water: not without Water Statistics.' Baas, Kees and Cor Graveland. Statistics Netherlands. Paper for the 58th World Statistics Congress (WSC). Dublin 2011. http://isi2011.congressplanner.eu/pdfs/450236.pdf *Paper describes the long history (since 1970-ies) of Water Statistics and the more recent history of Water Accounts (since 1990-ies) in the Netherlands. These two pieces of information are established to an important source of information for Dutch water policies. The paper reviews water management, including Integrated Water Resource Management (IWRM), along the main water related issues within the country. Moreover, it deals with the use and application of Water Statistics and Water Accounts currently compiled by Statistics Netherlands, the resulting indicators, and uses in policy and research. In particular it looks in detail after the different stages in the policy cycle and the connected water accounts and water statistics data.*	Netherlands

32	Regional analysis: Differences in emission-intensity due to differences in economic structure or environmental efficiency? Journal of Sustainable Development, Vol 2, No 3. Rossum, M. van and van de Grift, M. (2009). www.ccsenet.org/journal/index.php/jsd/article/download/3297/3684/3297-12917-1-PB[1].pdf *Article deals with analysis of emission data related to economy (production) based upon water figures compiled in NAMWA. Reference is made to a number of for emissions relevant data sources.*	
33	ABS (Australian Bureau of Statistics).- Questionnaire for Water Supply and Sewerage Services Survey 2010-2011. 2011 *Sample of the questionnaire used for the survey to collect physical and monetary information from water supply and sewerage service industries in Australia during 2010-11.*	Australia
34	ABS (Australian Bureau of Statistics).-Questionnaire for the Economic Activity Survey 2010-2011. 2011 24 pages *Sample of the questionnaire used for the 2010-2011 survey to Australian industries.*	Australia
35	INEGI (National Statistics and Geography Institute of Mexico).- Questionnaires for the 2009 census to the establishments that perform water supply and sanitation activities (ISIC 36 and 37). 2010 32 pages (In Spanish) http://www.inegi.org.mx/est/contenidos/proyectos/aspectosmetodologicos/cuestionarios/default.aspx In Spanish *Sample of the questionnaire used for the 2009 census of the establishments that perform water supply and sanitation activities.*	Mexico
36	Statistics Canada.-Questionnaire for the Survey of Drinking Water Plants. Reporting Year 2011. 2012 16 pages *Sample of the questionnaire used in the survey to collect detailed information concerning the quantity and quality of water processed by facilities that withdraw raw water from the environment and produce potable water for consumption in Canada in 2011.*	Canada

37	Friends of the Chair on Integrated Economic Statistics.- Guidelines on Integrated Economic Statistics (Draft subject to final editing) February 2012 169 pages http://unstats.un.org/unsd/statcom/doc12/RD-IntegratedEcoStats.pdf *Present the integration framework of economic statistics based on best current practices for the entire spectrum of statistical agencies, from countries with centralized and decentralized statistical systems, as well as from countries at different stages of economic and statistical development.*	UNSD
38	Eurostat.- Eurostat Manual of Supply, Use and Input-Output Tables. September 2008 588 pages http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-RA-07-013/EN/KS-RA-07-013-EN.PDF *Detailed manual explaining the way in which supply and use tables are compiled. It shows the relationship between the supply and use tables and the input-output tables. It has practical numeric examples. It does not address the issue of data collection.*	Eurostat
39	Eurostat, INSEE, Planistat.- Introduction to National Accounts, Kangaré Manual. First edition in 1979 then revised and translated into French and Spanish. Last revision in Spanish shown in ECLAC link: http://www.eclac.cl/publicaciones/xml/8/28418/Kangare_manual.pdf 99 pages *A practical guide widely used, mainly in developing countries, to train people on how to compile national accounts. The manual is organized around the example of a fictitious country named "Kangaré".*	Eurostat
40	United Nations.- National Accounts: A Practical Introduction (ST/ESA/STAT/SER.F/85) 2003 139 pages http://unstats.un.org/unsd/EconStatKB/Attachment35.aspx *Practical guide on how to compile national accounts. It shows the compilation in the standard tables following an example. It does not address the issue of data collection.*	UNSD
41	INEGI (National Statistics and Geography Institute of Mexico).- Questionnaires for the 2009 census to the establishments that perform water supply and sanitation activities (ISIC 36 and 37). 2010 32 pages (In Spanish) http://www.inegi.org.mx/est/contenidos/proyectos/aspectosmetodologicos/cuestionarios/default.aspx In Spanish	Mexico

	Sample of the questionnaire used for the 2009 census of the establishments that perform water supply and sanitation activities.	
42	CONAGUA (National Water Commission of Mexico).- Statistics on Water in Mexico. 181 pages (In Spanish) http://www.conagua.gob.mx/english07/publications/EAM2010Ingles_Baja.pdf English version 2010 http://www.conagua.gob.mx/CONAGUA07/Publicaciones/Publicaciones/SGP-1-11-EAM2011.pdf Spanish version 2011	Mexico