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Overview of resources on gender-sensitive data related to water

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Overview of resources on gender-sensitive data related to water

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WWAP Gender Series n.4

This report was compiled in 2014 by Amber Fletcher (Department of Sociology and Social Studies, University of Regina, Canada) under the supervision of Joni Seager, as a baseline and technical support to the members of the Working Group on Sex-Disaggregated Indicators.
An update of 2015 literature was compiled by Roselie Schonewille (King's College London), under the supervision of Francesca Greco, Project Coordinator.

Contents

List of abbreviations

CIDA	Canadian International Development Agency
CGIAR	Consultative Group for International Agricultural Research
CSOs	Civil society organizations
DHS	Demographic and Health Survey
FAO	Food and Agriculture Organizations of the United Nations
FHH	Female-headed households
GEWAMED	Mainstreaming Gender Dimension into Water Resources Development and Management in the Mediterranean Region
GLAAS	Global Analysis and Assessment of Sanitation and Drinking-Water
GM	Gender mainstreaming
GPI	Gender Parity Index
IWRM	Integrated Water Resources Management
JMP	Joint Monitoring Programme for Water Supply and Sanitation (WHO/UNICEF)
LSMS	Living standards measurement survey
MDG	Millennium Development Goal
MHH	Male-headed households
MICS	Multiple Indicator Cluster Survey
NGOs	Non-governmental organizations
SEAGA	Socio-economic and gender analysis
UN DESA	United Nations Department of Economic and Social Affairs
UNECE	United Nations Economic Commission for Europe
UNECLAC/CEPAL	United Nations Economic Commission for Latin America and the Caribbean
UNESCAP	United Nations Economic Commission for Asia and the Pacific
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UNSD	United Nations Statistics Division
UN WWAP	United Nations World Water Assessment Programme
WAC	Water for African Cities
WASH	Water, sanitation and hygiene
WASSIP	Water and Sanitation Service Improvement Project
WEAI	Women's Empowerment in Agriculture Index
WHO	World Health Organization
WSP	World Bank Water and Sanitation Program
WUAs	Water users' associations

Overview

This report presents the results of a literature review on gender and water with particular emphasis on sex-disaggregated data and gender indicators. It provides an inventory of sex-disaggregated data produced or published between 2008 and early 2015. It also includes several key documents produced before 2008. The literature review covers official, scholarly and non-governmental literature and highlights significant initiatives to collect sex-disaggregated data in water and/or sanitation.

The purpose of this report is to inform and support the United Nations World Water Assessment Programme (UN WWAP) project to develop an indicators-based methodology to assess women's role and empowerment in the access, use and management of water resources. The report is divided into four sections: (1) Sex-disaggregated data on water; (2) Social data on water (not gender-disaggregated); (3) Policy support for gender mainstreaming and sex-disaggregated data; and (4) Overview of resources for indicators and methodology. Each section is divided into sub-levels and begins with a summary, which together illustrate the current state of sex-disaggregated data on gender and water.

Terminology disambiguation: The United Nations Educational, Scientific and Cultural Organization (UNESCO) uses the term "sex-disaggregated" data when referring to data related, on a separate basis, to females and males. This is due to the fact that UNESCO acknowledges that sex does not equate to the word "gender"; gender being a plural and multiple variable. In UN WWAP methodology for data-gathering, the term "sex" will be considered as a dual variable only (female and male). For the sake of adherence, it was decided to retain the terminology "gender-disaggregated" whenever this term was used in original external sources (non-UNESCO) that have been reviewed in this paper, even when the meaning of this term obviously refers to only "women and men".

Background

In many countries, women are the main providers and managers of water at the household level. Women's productive and reproductive roles are often highly dependent on water and differently dependent than men's. Many small-scale location-specific studies suggest that women and men express different priorities for water use and conservation and "household"-level analyses have limited value in revealing these kinds of gendered patterns. Access, use, management and authority over water resources are all highly gendered. For these reasons, women constitute distinctive key stakeholders in water policy and programmes – and are treated as such, at least in declarations of interest and in most major policy platforms in development broadly, and in water and sanitation sectors specifically.

Over the past two decades, the connected issues of gender and water have received considerable international policy attention. Principle 3 of the 1992 Dublin Statement on Water and Sustainable Development (ICWE, 1992) recognized women's central role in provisioning, managing and safeguarding water. Agenda 21, the action plan that resulted from the 1992 United Nations Conference on Environment and Development, strongly supported women's involvement in water management, governance and education (UNCED, 1992, see for example sections 18.12n; 18.19; 18.33; 18.34d; 18.45). The Johannesburg Plan of Implementation from the 2002 World Summit on Sustainable Development includes an agreement to: "support capacity-building for water and sanitation infrastructure and services development, ensuring that such infrastructure and services meet the needs of the poor and are gender-sensitive" (WSSD, 2002, paragraph 25a). Similarly, in 2002, the United Nations Committee on Economic, Social and Cultural Rights confirmed, in its General Comment on the Right to Water, women's important roles in water collection (CESCR, 2003).

In 2003, a resolution was adopted by the United Nations General Assembly (UNGA, 2003) to establish the International Decade for Action, "Water for Life" (2005-2015). The resolution called for "greater focus on water-related issues at all levels and on the implementation of water-related programmes and projects," while emphasizing "the participation and involvement of women in water-related development efforts." The Water for Life Decade corresponded with the timeline for the Millennium Development Goals (MDGs), which aimed "to halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation" (Target 7.C). More specifically, MDG 3 focused on gender equality and women's empowerment. In 2008, The United Nations Children's Fund (UNICEF) declared that the MDG Target 7.C on water and sanitation "cannot be met without the full participation of women – as care-givers, workers, beneficiaries of services and decision-makers in homes, communities and at national levels – and without addressing the inequities suffered by girls" (UNICEF, n.d.).

In addition to the gender focus in water and sanitation, gender mainstreaming (GM) has been recognized as an important strategy for achieving gender equality. The focus on GM emerged in particular during the Fourth World Conference on Women in 1995. The commitment to GM was reinforced through the 1995 Beijing Platform for Action and, as illustrated in this report, remains widely recognized today.

Recent years have brought further attention to gender and water issues. Gender was recognized as a necessary consideration in the Hyogo Framework for Action (2005-2015) on disaster risk management (UNISDR, 2005, Section 3.A.d), an issue that is particularly pertinent in light of growing concern about climate change. In 2010, the United Nations General Assembly declared safe drinking water and sanitation to be human rights (UNGA, 2010). Recently, attention has also shifted to the post-2015 development agenda. A global public consultation to identify inequality foci for the post-2015 period recommended that targets aimed at water and sanitation access (along with other targets with limiting levels of 100

per cent) be "worded in terms of improvement targets for those with the currently worst outcomes" (UNICEF/UN Women 2013, p. 75). This group includes women.

Despite strong international support and commitment to address gender issues in water and sanitation, the lack of sex-disaggregated data has hampered progress. Scholars, policymakers and practitioners alike recognize the need for specific indicators and gender-disaggregated data collection in the sector. In 2008, the United Nations Department of Economic and Social Affairs (UN DESA) and the UNUN-Water Decade Programme on Capacity Development (UNW-DPC) convened an Expert Group Meeting (EGM) to discuss the state of gender-disaggregated data. The meeting highlighted the pressing need for gender-disaggregated data in the water and sanitation sector, and identified a lengthy list of "Gender disaggregated water & sanitation indicators currently unrepresented or under-represented," while at the same time suggesting a short priority list of indicators to facilitate data collection(UN DESA/UNW-DPC, 2009).

Echoing the EGM 2008 call for gender-disaggregated data, scholars and non-governmental organizations (NGOs) have made a strong case for prioritizing the collection of gender-disaggregated data on water and the identification of priority indicators. The Gender and Water Alliance, for example, identifies gender-disaggregated data collection as a key component of a "minimum agenda" for making a difference in water management (CA/GWA/BE, n.d.).

The International Fund for Agricultural Development (IFAD) identifies the "unavailability of gender-disaggregated data" as one of the main reasons for the gap between policy commitments on water and gender and actual practice (IFAD, 2007). Geographer Joni Seager (2010) argues that the lack of gender-disaggregated data means that "gender is on the international water/sanitation agenda – in principle. In practice, it barely has any purchase at all." Economist Isha Ray, in a review of "women, water and development," concludes that "Impact evaluation, process documentation and success or failure analysis are all ultimately dependent on disaggregated data ... the lack of gender-disaggregated data on the impacts of water policies and underlying disagreements on how gender and development should be theorized, makes it difficult to reach robust conclusions on which policies can best assure poor women reliable access to water for their lives and livelihoods" (Ray, 2007, pp. 421 and 441).

1 Sex-disaggregated data on water

Existing sex-disaggregated data on water can be classified into several broad themes:
a) responsibility for, and time spent on, water collection; b) women as employees or decision-makers in public water institutions; c) women's role in, and access to, irrigation; d) women's role in, and access to, water and sanitation facilities.

Gender focus in major international surveys is limited and declining.
Although the World Health Organization (WHO)/UNICEF Joint Monitoring Programme (JMP) reports from 2008, 2010 and 2012 (WHO/UNICEF 2008, 2010 and 2012a) included gender-disaggregated data on water collection, gender was entirely absent in the 2013 update. The 2014 and 2015 reports (WHO/UNICE, 2014 and 2015) noted significant challenges associated with collecting gender-disaggregated data due to survey methods. The 2015 report reiterates the 2010 data on water collection and includes a narrative discussion of menstrual hygiene management, but presents no new data. Similarly, although the 2011 UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) survey (WHO, 2012) collected gender-disaggregated data on women in public water institutions and provisioning for women in water programs, there was no gender focus in the 2013-2014 survey instrument and therefore no gender-disaggregated data presented in the 2014 report (WHO, 2014).

However, UNICEF Multiple Indicator Cluster Surveys (MICS) continue to include questions about time spent on water collection and about the age/sex of the main collector.

National-level surveys have a gender focus.
A number of national living standards measurement surveys (LSMS) have collected, or are currently collecting, gender-disaggregated data on water collection. In addition, there have been some initiatives by national governments (e.g. Kenya, Uganda) and NGOs (e.g. in Tunisia) to collect gender-disaggregated water data at the national level.

Localized case studies provide rich data and identify emerging issues.
A large number of local-level case studies provide rich data while pointing out significant issues in gender and water more broadly. Due to the large number of existing case studies, only selected studies have been included in this report. These include:

- Case studies in countries where relatively little has been published about gender and water;
- Case studies using gender/water indicators; and
- Case studies that highlight a novel or under-researched issue in gender and water.

Key themes throughout all existing case studies include: inclusion of women in water management institutions (barriers and facilitators); women and participatory water programmes; the effects of climate change on gender and water access; water insecurity and gender-based violence; water insecurity, gender and mental health; gender and water privatization or commodification; gender issues in irrigation.

1.1 Global or multi-country data

1.1.1 FAO (Food and Agriculture Organization of the United Nations) AQUASTAT
http://www.fao.org/nr/water/aquastat/main/index.stm

Sex-disaggregated data were collected in a recent baseline study conducted by the FAO for an institutional capacity development project in Benin and Ethiopia.(Frenken and Kiersch, 2011). In both countries, the baseline survey collected sex-disaggregated data on irrigation users (male or female). In Ethiopia, the number of women and men on irrigation executive committees was also recorded. In addition, several recent AQUASTAT reports show attention to gender. FAO recently undertook a project to develop gender indicators (see FAO/CAWTAR Pilot project on gender-sensitive indicators for the FAO's AQUASTAT database in Section 3.1.4).

1.1.2 The World Bank[3]

1.1.2.1 World Bank Living Standards Measurement Surveys (LSMS) Dataset Finder.
http://iresearch.worldbank.org/lsms/lsmssurveyFinder.htm

The LSMS survey finder portal allows users to search for national survey instruments by topic, such as water and MDG categories. The latter includes a search for "Gender Equality and Empowerment."
A search was conducted using the "Gender Equality and Empowerment" criterion (surveys available in English; years 2005 to present) to identify LSMS data collected on gender and water. The search revealed that LSMS surveys in the following countries have collected gender-disaggregated data on the following water or sanitation topics:

- Ethiopian Rural Socioeconomic Survey (2011-12) – Chapter 6 (table 6.2, p.50) inquires about time spent on water collection by each household member (CSA/World Bank, 2013);
- Malawi Third Integrated Household Survey (2010-11) – Module E inquires about time spent on water collection by each household member;
- Serbia LSMS (2007) – Question B023 inquires about which family member spends the most time on water collection (gender-disaggregated) (SORS, 2007);
- Tajikstan LSMS (2009) – Module 6.8 inquires about time spent on water collection by household member (gender-disaggregated) (SSA, 2009);
- Tanzania National Panel Survey (2010-11) – Module 6.8 inquires about time spent on water collection by household member (gender-disaggregated);
- Timor-Leste Survey of Living Standards (2006) – Section 8 inquires about time spent on water collection by household member (gender-disaggregated);
- Uganda National Panel Survey (2011-12) – Section 8 inquires about time spent on water collection by household member (gender-disaggregated) (UBS, 2013).

1.1.3 UN. 2006. Gender, water and sanitation: Case studies on best practices

This 2006 UN report documents 15 case studies of gender mainstreaming in drinking water and/or sanitation projects. Although intended mostly as a policy support document that identifies best practices for GM in water projects, the context and outcomes of each case study provide qualitative data on the key gender and water issues in each country. Case studies include the following countries: Bangladesh, Brazil, Egypt, Ghana, Guatemala, India (two studies), Indonesia, Nicaragua, Nigeria, Pakistan, South Africa, Togo, Uganda and Zimbabwe. The case studies highlight such issues as: gendered differences in access to and

[3] Additional World Bank documents are included in Sections 2 and 3.

control of, community water and sanitation services; women's responsibility for water collection; and the need for gender-attentive workplace policies in the sector.

1.1.4 UN DESA. 2010. The world's women 2010: Trends and statistics

Chapter 7 ("Environment") provides global gender-disaggregated data on: water collection and associated time burdens; deaths associated with unsafe water, sanitation and hygiene issues; deaths associated with water-related extreme climate events (flooding, tsunamis, etc.). Data is drawn primarily from DHS and MICS, 2006 World Bank data and national statistics offices, and is computed by the United Nations Statistics Division (UNSD).

The data show that water collection, as well as deaths related to unsafe water or lack of sanitation services, continue to disproportionately affect women. The gendered effects of climate extremes vary by location. In some cases, climate extremes disproportionately affected men; in other locations, women were more affected.

1.1.5 UN-Habitat. 2013. State of women in cities 2012-2013: Gender and the prosperity of cities

This report contains a chapter on gender and urban infrastructure. Primary data were obtained from the UN-Habitat survey (n=619) administered in five cities (see table below). Respondents' perceptions of gender equity in access to water and sanitation infrastructure were recorded.

The most problematic aspect of urban infrastructure was sanitation and associated disease burden; 50 per cent or more of respondents in Bangalore, Kampala and Rio de Janeiro indicated that lack of adequate sanitation was a barrier for women in cities. While sanitation ranked last in terms of advancement, water infrastructure ranked third out of six in terms of infrastructure advancement (see Table 1 below).

Table 1.

Cities	Bangalore	Johannesburg	Kampala	Kingston	Rio de Janeiro	Total	Rank
Factors							
Transport	3.15	3.33	2.93	3.70	2.53	3.11	4
Water	2.60	3.48	2.97	3.92	3.09	3.16	3
Electricity	2.90	3.34	2.88	3.96	3.23	3.23	2
Sanitation	2.52	3.25	2.98	3.41	2.59	2.91	6
Telecommunication infrastructure	3.38	3.34	3.11	4.02	3.18	3.40	1
infrastructure for recreation	2.68	3.19	2.87	3.28	2.78	2.93	5
Note: Responses 1 least advanced to 5 most advanced							

Source: UN-Habitat (2013, table 2.2.1, p.38).

The UN-Habitat survey also found that 38 per cent of all respondents perceived "advanced" or "very advanced" gender equity in water access; this was highest in Kingston (62 per cent) and lowest in Bangalore (14 per cent). Access to sanitation was reported as "advanced" or "very advanced" by 33.5 per cent overall (highest in Kingston; lowest in Rio de Janeiro).

1.1.6 UNICEF Multiple Indicator Cluster Surveys (MICS)

http://www.unicef.org/statistics/index_24302.html

UNICEF assists countries in collecting data through its MICS instrument. Data for MICS5 (2012-2015) are available for some countries; other countries are still collecting data. The previous round of MICS (MICS4) was administered in 2009-2010. The MICS4 and MICS5 instruments both include a question about time spent on water collection (Question WS4: "How long does it take to go there, get water and come back?"), and asks about the sex and age of the main person collecting water (Question WS5).

1.1.7 UN Women

1.1.7.1 UN Women. 2011. Progress of the world's women 2011-2012: In pursuit of justice.

The UN-Women report contains a section on climate change framed by MDG 7. The section includes UN-Women's original content analysis of gender content in 423 national climate change adaptation plans. It found that 16 per cent of national water resource plans mention women as key stakeholders or primary participants in climate adaptation.

1.1.7.2 UN Women/UNSD (United Nations Statistics Division). 2014. Millennium Development Goals Gender Chart: Special edition for the 58th session of the Commission on the Status of Women.

The Chart assesses eight Millennium Development Goals on their gender dimensions. Goal number 7 on environmental sustainability shows the progress made on access to improved drinking water since 1990, and the improvement in access to sanitation since 1990. The importance of the progress in both areas for women and girls is mentioned. However, for both of these assessments, no sex-disaggregated data are available.

1.1.8 World Bank Water and Sanitation Program (WSP)

http://www.wsp.org/

The WSP's "Scaling Up Rural Sanitation" programme has resulted in country-specific reports containing small data points on gender, as follows:

1.1.8.1 Hanchett et al. 2011. Scaling up rural sanitation: Long term sustainability of improved sanitation in rural Bangladesh.

Qualitative and quantitative data from 53 Union Parishads (political regions) showed that, at least 4.5 years after regions were declared "open defecation free," female-headed households were 2.5 times more likely to use an improved or shared latrine than male-headed households.

1.1.8.2 Cameron and Shah. 2010. Scaling up rural sanitation: Findings from the impact evaluation baseline survey in Indonesia.

A baseline survey to inform future evaluation of programs found that 15 per cent of women reported feeling unsafe while using the toilet facility at night.

1.1.9 WHO Programme on Gender, Women and Health

http://www.who.int/gender/en/

In 2009, the WHO announced its strategy to promote and facilitate gender mainstreaming. The same year, the WHO released a major report on women's health, which contains some sex-disaggregated data on water and sanitation described in Table 1.

1.1.9.1 WHO. 2009. Women and health: Today's evidence, tomorrow's agenda.

This report cites the JMP data on women and water collection. It also presents 2004 WHO data that identifies unsafe water, sanitation and hygiene as the second leading cause of death for girls under five in low-income countries (after childhood underweight), causing 410 deaths per 100,000 children. Unsafe water, sanitation and hygiene was also the second leading cause of death for girls under five in middle-income countries (after suboptimal breastfeeding), at a death rate of 98 per 100,000 children (Table 2, p. 21).

In 2011 the WHO released a mid-term review of its gender strategy, entitled Gender mainstreaming in WHO: What is next? Report of the mid-term review of the WHO gender strategy (WHO, 2011). More specifically,,, Strategic Direction 3 referred to "Promoting the Use of Sex-Disaggregated Data and Gender Analysis." However, the report does not mention water or sanitation issues.

1.1.10 WHO/UNICEF JMP for Water Supply and Sanitation

http://www.wssinfo.org

The WHO/UNICEF JMP was established to monitor progress on MDG 7(c): reduction by half of the proportion of people without sustainable access to safe drinking water and basic sanitation. In 2008, the JMP released its last comprehensive report on progress toward this goal. Updates to the 2008 report were released in 2010, 2012, 2013, 2014 and 2015 as new data were obtained by the JMP.

The 2012 update report announced that MDG 7(c) had been met in 2010. Thereafter, the JMP's activity shifted toward creating new targets for the post-2015 development agenda. These new targets are presented in the 2013 update report.

Unlike the previous reports, there is a noticeable absence of gender-disaggregated data in the 2013 JMP update. Although the main 2008 report, along with its 2010 and 2012 updates, reported gender-disaggregated data on water collection, the gender focus disappeared in 2013. Despite its overarching focus on inequality, the 2014 update mentions gender only briefly, in a broader discussion about lack of intra-household data. No new sex-disaggregated data are presented in the 2014 or 2015 reports.

Furthermore, although gender was mentioned as a component of some indicators (access to gender-segregated facilities in schools and hospitals) during the post-2015 target negotiations in The Hague (see WHO/UNICEF 2012b below in Section 3.1.22), none of the resulting targets or indicators presented in the 2013 update report mentions gender, with the exception of a reference to menstrual hygiene facilities. This indicates that, in the absence of other interventions, the shortage of sex-disaggregated data will likely continue into the future.

1.1.10.1 WHO/UNICEF. 2015. Progress on sanitation and drinking water: 2015 update and MDG assessment.

The 2015 update contains no new sex-disaggregated data. The only mention of sex or gender is in a short section on menstrual hygiene management.

1.1.10.2 WHO/UNICEF. 2014. Progress on drinking water and sanitation: 2014 update.

The 2014 update contains no new sex-disaggregated data. Gender is discussed in a brief section about the challenges of collecting intra-household data. The limitations of collecting data based on male or female headship of households is aptly noted.

1.1.10.3 WHO/UNICEF. 2013. Progress on drinking water and sanitation: 2013 update.

This document draws from the JMP's database of over 1,700 surveys. The updated data include 230 new datasets from 117 countries. Data is sourced from the International Household Survey Network hosted by the World Bank as well as household surveys from national statistics offices.

Data included in the 2013 update are: global rates of access to improved sanitation, open defecation

and access to drinking water. No data presented in the 2013 update are gender-disaggregated. The report also presents four key targets for the post-2015 Development Agenda, with associated indicators. These indicators were established during two consultations in 2011 (Berlin) and 2012 (The Hague) (see WHO/UNICEF, 2012b in Section 3..1.22 for details). The 2012 consultation involved four working groups: i) Water Supply; ii) Sanitation; iii) Hygiene; and iv) a cross-sectoral group on Equity and Non-Discrimination (END). A with a fifth group on Communications and Advocacy was eventually added. Gender is implicitly included in one target ("inequalities in access should be eliminated") and is a component of several indicators. However, none of the targets or indicators is specifically or explicitly focused on gender.

1.1.10.4 WHO/UNICEF. 2012a. Progress on drinking water and sanitation: 2012 update.

Gender content in the 2012 update is exclusively focused on water collection. A one-page section of the report is dedicated to the topic "Gender and the Burden of Collecting Water." Data drawn from MICS and Demographic and Health Survey (DHS) (2006-2009) in 25 sub-Saharan African countries show that women perform 62 per cent of water collection in the region. Data on time spent doing water collection is also presented.

1.1.10.5 WHO/UNICEF. 2010. Progress on drinking water and sanitation: 2010 update.

Gender content in the 2010 update is exclusively focused on water collection. The 2010 update presents data on gender and water collection gathered from MICS and DHS surveys (2005 to 2008) in 45 developing countries. The data show that women performed 64 per cent of water collection.

1.1.10.6 WHO/UNICEF. 2008. Progress on drinking water and sanitation: Special focus on sanitation.

The Core Questions guiding data collection for this report included a question on gender and drinking water collection. The data are drawn from 2005-6 MICS and a series of 2006 DHS in 35 developing countries. The data show that women were disproportionately responsible for drinking water collection at a rate of 64 per cent.

1.1.11 WHO/UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS)

http://www.who.int/water_sanitation_health/glaas/en/

The GLAAS program mandate is to "monitor the inputs required to extend and sustain water, sanitation and hygiene (WASH) systems and services" (WHO, 2012, p.3). To this end, the GLAAS survey collects data on water and sanitation services through a survey of national governments. Questions examine the "enabling environment" (i.e. policy, financing, human resources) for WASH.

Although the 2011 survey (as presented in WHO, 2012) collected gender-disaggregated data on human resources and on provisioning for women in WASH programs, the gender focus seems to have entirely disappeared in the 2013-2014 survey and, as a result, there are no sex-disaggregated data in the 2014 report.

1.1.11.1 WHO. 2014. UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) 2014 Report: Investing in water and sanitation: Increasing access, reducing inequalities

Despite the 2014 report's focus on inequality, no sex-disaggregated data are presented. The only mention of gender in the report is a general recognition that investing in water infrastructure leads to improved school attendance and completion rates for girls, as well as increased comfort, privacy and safety for women.

1.1.11.2 WHO. 2012. UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLASS) 2012 Report: The challenge of extending and sustaining services.

The 2012 GLAAS report contains 2011 data collected from 74 developing countries and 24 external agencies. Section 4.4 presents gender-disaggregated data on human resources in water and sanitation, which shows that women constitute less than 10 per cent of the professional workforce in half the surveyed countries.

The 2011 GLAAS survey also inquired about provisions for women in national sanitation and drinking water strategies (menstrual hygiene provisions are specifically mentioned). Of the 74 countries surveyed, 31 had no specific provisions for women in relation to their sanitation policies/strategies, 30 had provisions for women but none specific to menstrual hygiene and 10 had provisions that include menstrual hygiene. As for drinking water, 22 countries had no specific provisions for women, 22 had provisions without reference to menstrual hygiene and 27 had provisions with reference to menstrual hygiene (WHO, 2012, Fig. 7.4, p. 65).

1.1.12 WWAP. 2014. The United Nations World Water Development Report 2014: Water and energy

The 2014 World Water Development Report is gender mainstreamed. The analysis is mostly high-level description with few original or secondary data. The report notes that in-depth analysis was limited by lack of gender-disaggregated data (p. 3) and calls for more gender-disaggregated data on social and gendered implications of water issues (p. 45).

The report's gender analysis is contained mostly within the box on page 21. The report also contains two case studies of initiatives that have benefited women and girls in particular ways (e.g. safe drinking water and irrigation access, p. 55). The report calls for gender-sensitive water and energy governance. It also calls for gender-equity benchmarking, gender audits for accountability and production of more gender-disaggregated data in the water and energy sectors (p. 105).

The broad gender analysis is framed by several key facts:

- the disproportionate levels of poverty amongst women and children (p. 21);
- women and girls' disproportionate responsibility for water-related work (p. 21); and
- women's disproportionate exposure to water borne illnesses (p. 21)

1.1.12.1 WWAP. 2015. The United Nations World Water Development Report 2015: Water for a sustainable world.

The 2015 World Water Development Report is gender mainstreamed. Gender analysis exists throughout the report, but supporting data are drawn from secondary sources and the WWDR does not present new data. The report highlights the pressing need, in the post-2015 development agenda, for indicators that disaggregate data by sex. The report discusses on-going gender inequalities associated with lack of drinking water and sanitation facilities. It cites secondary statistics on the beneficial effects of reducing water carrying time – benefits that include, for example, decreasing child mortality and increasing girls' school attendance. Importantly, the 2015 report also acknowledges the gender-differentiated impacts of climate change and water-related disaster.

1.2 Regional data

1.2.1 UN-Habitat/GWA. 2006. Synthesis report of rapid gender and pro-poor assessments in 17 African cities of the Water for African Cities (WAC) II Programme: Navigating gender cities

This 2006 report documents the results of Rapid Gender and Pro-Poor Assessments conducted in 17 African cities as part of the UN-Habitat WAC II Programme. The data are primarily qualitative and were derived through one-month assessments in cooperation with stakeholder groups. Each stakeholder group included approximately 10 representatives of local and national government, nonprofit organizations and women's groups, utilities engineers and university gender experts.

The report provides a narrative gender analysis, interspersed with case studies from selected cities or initiatives, on the six priority areas of the WAC Programme:

- Pro-poor Water Governance and Follow-up Investments
- Sanitation for the Urban Poor
- Urban Catchment Management
- Water Demand Management
- Water Education in Schools and Communities
- Advocacy, Awareness-raising and Information Exchange

The report includes an overview of the major policy frameworks related to gender and/or water in each country. Some quantitative data are provided on the gender composition amongst water engineers and technicians in selected countries or cities (i.e. Senegal, p. 32; Dar es Salaam, Tanzania, p. 34; Lusaka, Zambia, p. 35).

1.3 National Data

1.3.1 Ghana

1.3.1.1 Nauges and Strand. 2011. Water hauling and girl's school attendance: Some new evidence from Ghana.

This report contains an econometric analysis of data from four rounds of the DHS in Ghana. The analysis found that a 15-minute reduction in time spent hauling water can increase the proportion of girls (aged 5 to 15) attending school by 8 to 12 per cent.

1.3.2 Kenya

1.3.2.1 Government of Kenya/World Bank. 2007- ongoing. Water and Sanitation Service Improvement Project (WASSIP).

Gender mainstreaming was initiated in the WASSIP program at its mid-term review in 2011. At this time, gender-disaggregated monitoring of existing water and sanitation projects began and gender dimensions were included in the WASSIP socioeconomic baseline survey. Some limited findings are presented in a short newsletter by Torkesson et al. (2011).

1.3.3 Uganda

1.3.3.1 Government of Uganda. 2009. Water and environment sector performance report.

This government report used an indicator to assess women's participation in water sector decision-making. The indicator was: "% of water user committees/water boards with at least one woman holding

a key position."[4] Accordingly, the report provides national data on percentages of women holding key positions in these organizations, as well as the Ministry of Water and Environment and the National Water and Sewerage Corporation. Data were drawn from the 2009 Water and Sanitation Survey responses, district water offices and the Ministry's own Gender Analysis Survey (MWE, 2009).

1.4 Local-level data and case studies

1.4.1 Bolivia

Gender and the psychological effects of water insecurity

1.4.1.1 Wutich. 2009. Intra-household disparities in women and men's experience of water insecurity and emotional distress in urban Bolivia.

This study used participant observation and interviews with 24 male/female household pairs (n=48) in one neighbourhood within the city of Cochabamba, Bolivia. The study found that women were statistically more likely to experience wasted time, lost income and water cutbacks due to water insecurity. Women were also more likely than men to experience fear and anger as emotional responses to water security; however, women and men were equally likely to report feeling worry, annoyance and anger at family members due to water shortage. As water supply became very low, gendered roles in relation to water-seeking became more fluid and flexible.

1.4.2 Ethiopia

Indicators and resource portfolios

1.4.2.1 Torkelsson and Tassew. 2008. Quantifying women's and men's rural resource portfolios: Empirical evidence from Western Shoa in Ethiopia

This article is based on quantitative surveys and qualitative interviews conducted in four farming communities in the Oromiya region of Western Shoa, Ethiopia, in 2006. Two surveys were conducted with a sample of 604 men and women. The data that pertain to water are as follows:

- Women held primary responsibility for water collection and approximately half of the participants walked at least 30 minutes per day to collect water and one-quarter walked more than one hour per day;
- 43 per cent of participants had access to improved water sources;
- One-third of respondents had access to irrigation, with no significant difference between women and men; however, a smaller number of women heads of households had access to irrigation than male household heads (18 per cent of female heads compared to 35 per cent of male heads). The authors attribute this to differential land access, with which irrigation is associated (p. 468).

Various types of agricultural resources (e.ge.g. land, water) were quantified as indicators to determine participants' overall resource portfolios.

1.4.3 Ghana

Gender, data and indicators for IWRM

1.4.3.1 Lasiter and Stawicki. 2014. Linking knowledge: A qualitative analysis of gender and IWRM-related policies in the upper east region of Ghana

This document describes a qualitative research project in Ghana's Upper East Region. The project

[4] A "key position" was considered to be one of the following: Chairperson, Vice-Chairperson, Secretary, or Treasurer.

examined women's roles and concerns in relation to water, their self-organizing processes in relation to water management and the role of government policies in women's water management activities. The researchers conducted key informant interviews with government representatives and focus groups with female community members. They found that water (in particular, access to safe drinking water and irrigation water) was a key concern for women. The report emphasizes that, due to a rigid gendered division of labour, it is crucial to collect gender-disaggregated baseline data prior to designing and implementing IWRM policies. Time budgets are a recommended method for collecting this data. Moreover, the use of clearly defined indicators and measurable outcomes are recommended as a means to move from GM rhetoric to action.

1.4.4 India

Gender in public-private partnerships for water development

1.4.4.1 Raha et al. 2013. Does watershed development implemented through public private partnership empower women? A case review from Rajasthan, Western India

This study involved interviews and focus groups with men and women in five villages throughout Rajasthan. It examined a rural watershed development policy carried out in a drought-prone region through public-private partnership. The study found significant gaps between policy objectives and realities, which was attributed primarily to patriarchal social structures. The paper recommends the complementary use of both women-specific and gender-neutral activities to enhance women's participation. The paper argues that the public-private partnership approach can be made conducive with gender inclusive approaches.

1.4.5 Kenya

Gender and wastewater irrigation

1.4.5.1 Masai. 2013. Assessment of farmers' perceptions of health risks of untreated wastewater used for crop production in Mali Saba, Nairobi – A gender prospective

This thesis used 75 structured surveys to examine gender differences in wastewater irrigation in Nairobi. Women constituted 60 per cent of the farmers using untreated wastewater. Women were less likely to use protective gear when irrigating than men (85 per cent of women unprotected versus 75 per cent of men). No significant association was found between gender and risk of enteric diseases from using untreated wastewater for crops.

1.4.6 Mongolia

Gender roles and equality in water collection and management

1.4.6.1 Hawkins and Seager. 2010. Gender and water in Mongolia.

This study involved surveys (n=131), interviews (n=16) and participatory rural appraisal in both rural and urban areas of Mongolia. The article provides primary, gender-disaggregated data on water collection (time spent, distance travelled) and household water use in both rural and urban areas of Mongolia. Data also include gender differences in priorities for water use, technology/animal assisted water collection and formal (institutional) water management. Overall, the study found that gender roles were relatively fluid compared to other contexts and that responsibility for water collection and use at the household level is relatively equitable. In both rural and urban study areas, men were more responsible for water collection than women. This is largely attributed to men's time availability for collecting water while women are engaged in other household tasks. Men had more responsibility for water collection involving vehicles or animals, whereas women's involvement was higher (but still not as high as men's) in water collection by hand. Men are overrepresented in formal (institutional) water management. Regarding gender equality and water indicators, the study suggested the "intriguing possibility that

the extent of gender rigidity in water collection—a feature that is relatively accessible to empirical observation by outsiders—might have value as a surrogate indicator of the nature of overall gender equity" (p. 28).

1.5 Empirical research and data analysis

1.5.1 International Water Management Institute (IWMI)

The IMWI is a non-profit organization that conducts scientific research on water and land resources in developing countries. The organization has an active research program on poverty, gender and water. The most recent publications are presented below.

In 2002, the IWMI created a "Gender Performance Indicator for Irrigation," which was applied and tested in nine case studies in Asia and Africa. Details on the indicators are provided in Annex A (van Koppen, 2002a).

In 2014, the IWMI launched a gender strategy with the CGIAR Research Program on Water, Land and Ecosystems, which suggests that more gender-disaggregated research will be produced in the future.

1.5.1.1 Doss and Kieran. 2014. Standards for Collecting Sex-Disaggregated Data for Gender Analysis: A Guide for CGIAR Researchers

The document stresses that in gender analysis, the focus should not only be on women – men also need to be consulted.

1.5.1.2 Kevany and Huisingh. 2013. A review of progress in empowerment of women in rural water management decision-making process

This article provides a useful review of existing scholarly literature on women's empowerment in rural water management. The article highlights seven dominant themes in the literature:

1 - Water insecurity contributes to poor mental well-being;
2 - Spiritual and physical well-being being undermined by eco-disequilibrium and disrespect;
3 - Gender violence is associated with unsafe and inaccessible water;
4 - Climate change, inconsistencies in rainfall, harvests, community income and global pressures in commodity trading have dramatic impacts on rural well-being and gender equality;
5 - Legislation that prohibits women's entitlement to resources and land creates numerous problems;
6 - Gender inequality is maintained by political philosophies, policies and practices; and
7 - Strategies to privatize and commercialize water are rapidly expanding.

1.5.1.3 Sommer et al. 2015. Violence, gender and WASH: spurring action on a complex, under-documented and sensitive topic

An often underrepresented aspect of the WASH sector is the vulnerability to violence experienced by girls and women. There is insufficient documentation on this type of violence and vulnerability. Therefore, a toolkit has been developed aimed at making access to water, sanitation and hygiene safer. The toolkit, accessible at http://violence-wash.lboro.ac.uk/, provides methodology and guidance for collecting data on these sensitive issues. However, current evidence around the topic still has many gaps. There is no clear comprehension of the scope of the violence experienced by girls, boys, men and women related to WASH. Data is needed, for example, on the risks of fetching water from far away, access by women and girls to sanitation in slums, and vulnerability of women when disputes arise at water collection points.

1.5.1.4 Sullivan et al. 2003. The water poverty index: Development and application at the community scale

The Water Poverty Index was based on empirical research in 12 communities – four in each of South

Africa, Tanzania and Sri Lanka. The index contains one gender-disaggregated indicator: "% of water carried by women."

Gender data collected during the pilot study of the Water Poverty Index are reported in this paper on the Gender and Water Index (van Koppen, 2002b). These data show a strong gendered division of labour in terms of water collection. Women collected water in 83 to 91 per cent of households. Gender-disaggregated data were also collected for daily time spent on water collection (for women, the maximum country average was 416 minutes in Tanzania's dry season; the minimum country average was 97 minutes in Sri Lanka) and amount of water collected.

1.5.1.5 van Koppen et al. 2012. Gender aspects of small-scale private irrigation in Africa

This paper presents a gender-disaggregated analysis of irrigation uptake in Ghana and Zambia. The research drew on existing household survey and census data, which had been differentiated by male-headed households (MHH) and female-headed households (FHH). With the caveat that male-headed households formed the majority of the sample in each country, the study found that FHHs adopted irrigation at two-thirds the rate of MHHs. A key difference was that FHHs tended to adopt manual irrigation technologies (e.g. buckets) whereas MHHs utilized motorized technologies and river diversion. Female ownership of land was linked to high adoption rates of irrigation.

1.5.1.6 Williams et al. 2012. Gender in aquaculture and fisheries: Moving the agenda forward.

This book of conference proceedings contains a number of case studies focusing primarily on women's roles in the fishing industry. Case studies are from the following countries: Bangladesh, China, India, Indonesia, Japan, Korea, Namibia, Nepal, Philippines, Thailand and Vietnam.

1.5.1.7 Winkler et al. 2014. Measuring What We Treasure and Treasuring What We Measure: Post-2015 Monitoring for the Promotion of Equality in the Water, Sanitation and Hygiene Sector

The article aims to identify lessons learned from the MDG framework to improve the new Sustainable Development Goals (SDG) post-2015 framework, in order to include even the most marginalized in society. In particular, goals, targets and indicators need to be assessed by human rights law. A JMP (WHO/UNICEF) case study from the Working Group on Equity and Non-Discrimination is used to show how equality should be integrated. Finally, suggestions are made for monitoring in the WASH sector. The article creates a framework for the WASH sector on comprehensive monitoring with the main goal of reducing inequalities. The framework calls for sex-disaggregated data to be able to analyze intra-household inequalities which disproportionately affect women. In particular, menstrual hygiene management could serve as a proxy for data on discrimination against women and girls in WASH. It is noted that monitoring needs to be accompanied by specific targets.

2 Social data on water[3]

Many reports examine both water and gender, but separately.
There is a clear trend in many international and national reports and initiatives – including some with a stated "gender and water" focus – to include water data that is not gender-disaggregated and gender-disaggregated data that is not water-focused. In some cases, the two topics are linked in a general way, with overarching statements but little actual data. The most common topics for gender-disaggregated data are: political representation, employment and income, education and health issues such as maternal mortality, contraception and HIV/AIDS.

International survey instruments could be revised to obtain gender-disaggregated data.
In some cases, such as DHS, this would require only minor adjustments.

There are some regional efforts to establish gender and water indicators for data collection.
In 2013, UNESCAP held a regional consultation to develop gender and water indicators for its statistical regime.

2.1 Global or multi-country data

2.1.1 UN. 2013. The Millennium Development Goals Report.

The MDG report provides global, aggregated data on people living with and without access to safe drinking water and basic sanitation. These data are not gender disaggregated and the report does not provide declaration of interest and support for gender-specific approaches to water and sanitation. However, the report does provide declaration of interest and support for addressing gender issues in other areas (e.g. decision-making power) and provides some data toward MDG 3 ("Promote Gender Equality and Empower Women"); these data focus on gender inequality in employment, education, literacy, politics and the household.

2.1.2 The UN-Water Federated Water Monitoring System (FWMS) and Key Water Indicator Portal (KWIP)

http://www.unwater.org/kwiphttp://www.unwater.org/kwip
http://www.unwater.org/activities/multi-agency-featured-projects/indicators/en/

The Key Water Indicator Portal contains data (currently sourced from the Joint Monitoring Programme, although the site description indicates that other sources may be added) for two social indicators:

1. percentage of population with access to improved water sources, and
2. percentage of population with access to improved sanitation.

Data can be searched by country or viewed on a global map. Data are not gender-disaggregated.

[3] The section reviews literature and initiatives related to water that contain social information, excluding gender-disaggregated.

2.1.3 UN-Water. 2013. Proceedings of the UN-Water project on the safe use of wastewater in agriculture

This document reports the findings of a two-year project involving five regional workshops with approximately 160 participants (mostly government representatives) from over 73 countries in Africa, Asia and Latin America. The report presents qualitative data collected during the workshops. Topics include: capacity needs and gaps in wastewater management, economic issues related to wastewater use and policy frameworks for wastewater management and use. No data are gender-disaggregated.

2.1.4 United States Agency for International Development (USAID) Demographic and Health Surveys (DHS) Program 2008-2013

http://www.dhsprogram.com/What-We-Do/Survey-Types/DHS.cfm

DHS are nationally representative, large sample household surveys administered every five years. Interim DHS with smaller sample sizes are also conducted between standard DHS rounds. The 2008-2013 DHS included questions about household water and toilet facilities. Question 104 asks about the length of time to reach water, obtain it and return. Although these questions are not gender-disaggregated, the DHS presents an opportunity for collecting gender-disaggregated data – if such questions were added. Similarly, the DHS Women's Survey inquires about a number of issues specific to women (i.e. childbirth). None of these examine water, but could be altered to do so.

2.1.5 World Bank. World Development Indicators

http://data.worldbank.org/products/wdi

Data for the World Development Indicators are sourced from both World Bank surveys and other official international sources (e.g. the JMP). The water indicators address: (1) proportion of population with access to improved water and sanitation (total, rural and urban) and (2) investment in water and sanitation with private participation (US$). Gender-disaggregated data indicators cover themes such as education, reproductive and sexual health, and employment. None of the gender indicators relate to water or sanitation..

2.1.6 WHO. 2015. World Health Statistics 2015

The WHO's 2015 report draws on JMP data to present the percentage of world population with access to improved drinking water and sanitation. This data is not sex-disaggregated. The report does contain sex-disaggregated data on other health issues and health behaviours, such as life expectancy, alcohol consumption and blood pressure; however, none of these sex-disaggregated health data are water-related.

2.2 Regional data

2.2.1 United Nations Economic Commission for Europe (UNECE) Gender Statistics Database

www.unece.org/stats/gender

Gender-related indicators pertain to employment, work/life balance, education, decision-making, fertility/population and internet use. None of the gender-disaggregated indicators pertains to water or sanitation. The UNECE also collects data on two water-related indicators: carriage of goods by inland waterways and protected marine areas. Neither is gender-disaggregated.

2.2.2 United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)

2.2.2.1 UNESCAP. 2014. Statistical Yearbook for Asia and the Pacific

The yearbook contains data on water availability per person, as well as access to water and sanitation services, for a number of countries in the region. Although the data on access to water and sanitation services are disaggregated by rural/urban, none of the water-related data are disaggregated by sex. However, women's disproportionate responsibility for water collection is mentioned in general terms. The yearbook also contains sex-disaggregated data on employment and literacy rates, women's involvement in research, violence against women and other gender issues.

2.2.2.2 UNESCAP. 2013. Gender, statistics and gender indicators: Developing a regional core set of gender statistics and indicators in Asia and the Pacific

UNESCAP held a regional consultative workshop to develop gender indicators for statistical efforts in the region. The recommended indicators cover water carrying (gender-disaggregated), household access to drinking water and improved sanitation, and schools with access to water and sanitation (including separate sanitation facilities for girls).

2.2.3 United Nations Economic Commission for Latin America and the Caribbean (UNECLAC) CEPALSTAT Database: Statistics and indicators

http://estadisticas.cepal.org/cepalstat/WEB_CEPALSTAT/estadisticasIndicadores.asp?idioma=i

CEPALSTAT indicators include access to drinking water and sanitation, but this data is not gender-disaggregated. Gender indicators pertain to work, health, population, violence, etc., but not water or sanitation.

2.3 National data

2.3.1 UN-Water Country Briefs Project. 2013

http://www.unwater.org/activities/multi-agency-featured-projects/country-briefs/en/

The UN-Water Country Briefs were produced as a pilot project to develop a comprehensive snapshot of water data at the national level. To date, briefs have been developed for 13 countries: Bangladesh, Chile, Ghana, Guyana, Kyrgyzstan, Mexico, Mongolia, Oman, Philippines, The Gambia, United Republic of Tanzania, Viet Nam and Zambia.

Data are gathered from secondary sources, including from the World Bank, AQUASTAT and official country data. No gender-disaggregated information is available, with the exception of the country's rating on the United Nations Development Programme (UNDP) Gender Inequality Index. However, the briefs acknowledge that, "it is virtually impossible to find national-level gender-disaggregated data for almost all themes contained in the UN-Water Country Briefs."

2.3.2 Mexico

2.3.2.1 UNECLAC/FAO/UNIDO/UN-Habitat/PAHO/UNESCO/UNODC/UNDP/ Veracruz Women's Institute/Veracruz Institute for PublicPublicPublic/Tabasco Water and Sanitation Commission/ Chiapas Water Institute/Chiapas Civil Protection Unit/Chiapas Institute for Public Information. Joint Programme on Establishing Effective and Democratic Water and Sanitation Management in Mexico to Support the Achievement of the MDGs.

http://www.unwomen.org/mdgf/C/Mexico_C.html

2.3.2.2 UNDP. 2011a. Agenda municipal para la igualdad de género [Water and Development: Municipal Agenda for Gender Equality]: Chiapas

and

2.3.2.3 UNDP. 2011b. Agua y desarrollo. Agenda municipal para la igualdad de género [Water and Development: Municipal Agenda for Gender Equality]: Veracruz

Under the Joint Programme on Establishing Effective and Democratic Water and Sanitation Management in Mexico to Support the Achievement of the MDGs, two Spanish-language reports on gender, water and sanitation in the Mexican states of Chiapas and Veracruz were published (see above UNDP publications). The reports contain gender-disaggregated data on education, income and political participation for several municipalities in each state, but the data on water access and resources are not gender-disaggregated. However, the reports also mention that women are primarily responsible for water collection but have less power in water-related decisions.

3 Policy support for gender mainstreaming and sex-disaggregated data

There is strong support for gender-disaggregated data collection at all levels.
Gender-disaggregated data on access to clean water and improved sanitation are particularly emphasized.

There is strong declaration of interest and policy support for mainstreaming gender in water policies and programmes.
Recent emphasis is on IWRM frameworks, which are generally seen as conducive to gender inclusion.

In recent years, declarations of interest and policy emphasis have shifted from the MDGs to the post-2015 agenda.
In this context, water and gender discussions have focused primarily on access to improved water and sanitation.

Despite declarations of interest and support, lack of gender-disaggregated data is self-reinforcing across levels.
Initiatives to collect gender-disaggregated data, such as the FAO/CAWTAR pilot project to create gender indicators for AQUASTAT, are limited by a lack of national-level gender-disaggregated data. However, as shown in Sections 1 and 2, national data collection capacity is often limited to what is included in international survey instruments, such as DHS or MICS.

3.1 Global or multi-country support

3.1.1 Food and Agriculture Organization of the United Nations (FAO)

3.1.1.1 Socio-economic and gender analysis (SEAGA)

http://www.fao.org/gender/seaga/seaga-home/en/

The SEAGA program is a partnership between the FAO, ILO, World Bank and UNDP. Its primary purpose is to provide support for socio-economic and gender analysis in organizational initiatives. Currently, the website contains a variety of handbooks and technical guides for supporting gender analysis.

3.1.1.2 FAO/CAWTAR (Food and Agriculture Organization of the United Nations/Centre of Arab Women for Training and Research) Pilot project on gender-sensitive indicators for the FAO's AQUASTAT database. (See also Annex A for an overview of the indicators.)

http://www.cawtar.org/image_fr/doc/pdf/pilar2/project1

From approximately 2006 to 2009, FAO collaborated with the Centre of Arab Women for Training and Research (CAWTAR) to develop gender-sensitive indicators for use in the FAO's water database, AQUASTAT. The pilot project was based in Morocco, Tunisia and Algeria and involved a survey of approximately 100 women (findings are presented in FAO/CAWTAR, 2010).

This project did not move beyond the pilot stage. A 2014 document from AQUASTAT, entitled "Understanding AQUASTAT: FAO's Global Water Information" (FAO, 2014) explained that the indicators initiative has been limited by lack of gender-disaggregated data on water at the national level.

In addition, FAO AQUASTAT reports from 2012 (FAO; 2012) and 2013 (FAO, 2013) on irrigation in Asia include a number of statistics on women's involvement in agriculture generally, although neither contains primary data on gender and water specifically.

3.1.2 UN DESA/UNW-DPC. 2009. Gender-disaggregated data on water and sanitation: Expert group meeting report

This document reports on the expert group meeting held in December 2008. The key purpose of the meeting was to support gender equity efforts in water and sanitation by highlighting the need for gender-disaggregated data. The report provides an assessment of the state of gender-disaggregated data at the time of publication. It identifies obstacles to the development, collection and use of gender-disaggregated data in the water and sanitation sector. It also presents a list of suggested indicators to address data needs (see indicators in Annex A).

3.1.3 World Bank

The World Bank hosts several websites dedicated to the topic of gender (http://water.worldbank.org/related-topics/gender) and water/sanitation and http://water.worldbank.org/shw-resource-guide/promotion/gender-hygiene-and-sanitation). The pages contain a variety of resources and tools for mainstreaming gender in water and sanitation.

The most significant recent World Bank publications (that include gender and water) are:

3.1.3.1 World Bank. 2012. World Development Report 2012: Gender equality and development.

The report provides declarations of interest and support for clean water and sanitation services as part of its "Agenda for Global Action." Priority area 1 of the agenda, "Closing Gender Gaps in Human Endowments," features a sub-priority to "increase access to clean water" through three methods: (1) financial support, (2) fostering innovation and learning and (3) leveraging partnerships (p. 38). Throughout the report, water and sanitation services are promoted as a means to reduce illness and mortality amongst girls and women. The key recommendation on water is to increase funding for piped water to point of use. Water infrastructure is linked to increased time availability for women (i.e. less time collecting water).

Data (from the International Labour Organization) are presented on the percentage of women (0.5 per cent) versus men (1 per cent) employed in the "Electricity, Gas and Steam, Water" sector internationally. In particular, Box 2.1 (p. 86) discusses gender in relation to climate change (e.g. flooding and drought) and cites women's increased vulnerability in lower income countries. Box 7.1 (p. 291) provides case studies from Senegal and Cambodia of policies that increased water access; however, no link to gender is made here.

3.1.3.2 World Bank/WSP. 2010. Water and Sanitation Program Working Paper: Gender in water and sanitation

This working paper represents the World Bank's support of gender analysis in its Water and Sanitation Program. The document provides a general overview of guidelines and best practices for addressing gender inequality in water/sanitation policy (e.g. gender mainstreaming) and at the operational level in the sector (e.g. inclusion, monitoring and evaluation).

3.1.4 WHO/UNICEF. 2012b. Report of the second consultation on post-2015 monitoring of drinking water, sanitation and hygiene

This report outlines the discussions held at the second JMP consultation about water and sanitation for the post-2015 development agenda. The report presents four targets for the agenda; in summary, these targets are: elimination of all open defecation by 2025; equitable access for all to basic drinking water, hand washing, sanitation and menstrual hygiene facilities at home and in schools by 2030 and further progress by 2040; drinking water and sanitation services delivered in affordable and sustainable ways.

The report does not provide data. Gender is included as a consideration in the overall goal to reduce inequalities, but does not form its own goal or target. Access to menstrual hygiene facilities is mentioned.

Gender-separated sanitation in schools is included as a component of Indicator 4 ("Percentage of pupils enrolled in primary and secondary schools providing basic drinking water, adequate sanitation and adequate hygiene services") and in hospitals as a component of Indicator 5 ("Percentage of beneficiaries using hospitals, health centres and clinics providing basic drinking-water, adequate sanitation and adequate hygiene"). Indicator 7 ("Percentage of population using an adequate sanitation facility") does address gender by measuring the percentage of households in which all members (men and women, boys and girls) use the sanitation facility. Although this Indicator seems premised on the collection of gender-disaggregated data, it is not specifically mentioned.

It is notable that although gender is identified in this report, the 2013 update (WHO/UNICEF, 2013) presents only an overview of the targets and, therefore, gender is not mentioned.

3.1.5 World Bank

The World Bank hosts several websites dedicated to the topic of gender and water/sanitation. The pages contain a variety of resources and tools for mainstreaming gender in water and sanitation.

The most significant recent World Bank publications (that include gender and water) are:

3.1.5.1 World Bank. 2012. World Development Report 2012: Gender equality and development.

The report provides declarations of interest and support for clean water and sanitation services as part of its "Agenda for Global Action." Priority area no. 1 of the agenda, "Closing Gender Gaps in Human Endowments," features a sub-priority to "increase access to clean water" through three methods: (1) financial support, (2.e.g.4e.g. inclusion; monitoring and evaluation).

3.2 Regional support

3.2.1 AMCOW. 2011. AMCOW policy and strategy for mainstreaming gender in the water sector in Africa

AMCOW has expressed its support for gender mainstreaming in water initiatives throughout its member countries. The collection of gender-disaggregated data is explicitly recognized in the strategy: strategic objective no. 4 includes a recommended action to "Develop and promote adoption of a research framework to guide water sector stakeholders on generating sex-disaggregated data" (p. 25).

3.2.2 Mainstreaming Gender Dimension into Water Resources Development and Management in the Mediterranean Region (GEWAMED)

http://www.gewamed.net

The objective of the GEWAMED project is to support GM in IWRM throughout the Mediterranean region (14 countries) by building a knowledge base on gender and water. Its website contains an online library of documents related to GM and water management, some of which have been produced by GEWAMED projects and workshops.

3.3 National or local-level support

3.3.1 Egypt

3.3.1.1 MWRI. 2010. Overview of mainstreaming gender dimensions into water resources management in Egypt.

This report is intended to support gender mainstreaming in Egyptian water resources management. It provides data on gender (in)equality in Egypt but very little related to water specifically. The report strongly calls for gender-disaggregated data to support GM in the water sector.

3.3.1.2 MWRI/MSEA. 2009. Report of national seminar on key policy to mainstreaming gender in water management.

Originating from a GEWAMED project to establish policy recommendations on gender and water, these reports provide declarations of interest and support for GM in water resources management. The 13 recommendations acknowledge, in very general terms, the need for gender analysis and inclusion of women (as stakeholders, planners and decision-makers) in IWRM. One of the recommendations highlights the need for data on women's involvement with water resources in various Egyptian governorates.

3.3.2 Kenya

3.3.2.1 The Kenya Agricultural Productivity and Agribusiness Project (KAPAP). 2009 to September 2015.

This project, conducted by World Bank Kenya and the Government of Kenya, included a national gender-disaggregated baseline survey. Methods included interviews (n=4,052) with both the primary farmer and one other household member (of a different sex from the primary farmer) in 2,529 households across 33 districts. Targeting the primary farmer as opposed to "head of household" ensured gender balance in the participants, as women are likely to be primary farmers but not necessarily considered heads of households. Over half of the primary farmers interviewed were women.
Publicly available key findings thus far (Torkelsson, 2014; Wandera and Ambuko, 2012) have focused on economic issues with little information on water; however, the project has provided strong declarations of interest and support for gender-disaggregated water data and suggests a methodology for collecting disaggregated data.

3.3.2.2 JICA/ASCU. 2011. Mapping existing gender-disaggregated data and methodologies in agriculture and rural development in Kenya.

This report provides a comprehensive assessment of existing gender-disaggregated data in the Kenyan agricultural sector. The document provides an overview of methods for collecting gender-disaggregated data in agriculture. Interviews were conducted with experts on gender and development to identify the most effective methods, and tips for data collection are presented.

3.4 NGO Literature

3.4.1 CA/GWA/BE. 2006. Effective gender mainstreaming in water management for sustainable livelihoods: From guidelines to practice.

This report describes the gaps between declaration of interest and support for GM in water management and implementation in practice. The report identifies six key knowledge gaps where data is needed:

1. General information about numbers of women and men in relation to water, including: labour contributions to (irrigated) farming, construction and maintenance of water infrastructures, time

spent by women and men on fetching water, on other water-related activities such as watering cattle or washing clothes, etc.;
2. Information about how water-rights and powers are divided between men and women;
3. Information about trends in (1) and (2). Of particular relevance here are trends related to migratory labour;
4. Qualitative information is needed to establish intra-household and inter-household patterns of organizing water rights and responsibilities, and of managing agricultural and livestock enterprises;
5. Information to assess gender-gaps at other levels than that of the end-users. Numbers of male and female students in water education, numbers of female and male water professionals in government and non-government sectors, and numbers of male and female water policymakers at different levels; and
6. In-depth studies on how the water profession has been historically constructed as a masculine domain and how ideas of good professionalism are linked to cultural masculinities (pp. 12-13).

3.4.2 Marcoes. 2015. Achieving gender justice in Indonesia's Forest and Land Governance Sector: How civil society organizations can respond to mining and plantation industry impacts

This is a framework for gender analysis, as well as accurate sex-disaggregated data and gender expertise. In order to understand the gender impact of mining and plantation industries, three tools are suggested. These are: sex-disaggregated data, Gender Impact Assessments (GIAs) and ethnographic approaches. Furthermore, the document also provides recommendations for CSOs on working towards gender justice.

4 Overview of resources on indicators and methodology

The section is an overview of key literature related to gender indicators and methodology, including those discussing the development of indicators for sex-disaggregated data collection.

4.1 Alkire et al. 2013. The Women's Empowerment in Agriculture index.

The Women's Empowerment in Agriculture Index (WEAI) is an aggregate, survey-based index to measure women's empowerment in agriculture. This working paper describes the background rationale and construction of the index, including an indicator selection.

The WEAI index measures women's empowerment in five areas of agriculture: (1) decisions about agricultural production, (2) access to and decision-making power about productive resources, (3) control of use of income, (4) leadership in the community and (5) time allocation. A second sub-index, the Gender Parity Index (GPI), is used to measure overall gender parity by the percentage of women whose empowerment score meets or exceeds that of the men in their household. The GPI is used to illustrate an "empowerment gap" that exists in households that have not reached gender parity on empowerment. The index was piloted in 2011 in three countries associated with USAID's Feed the Future program zones: Bangladesh, Guatemala and Uganda. The primary method of data collection was quantitative surveys, but qualitative case studies were also used.

Aside from ownership of fishponds, which is part of the "ownership of assets" indicator, the index does not contain indicators specific to water. However, the index presents an opportunity to obtain data on gender and water, if such indicators were added.

4.2 BRIDGE. Gender Indicators Cutting Edge Pack

In this information pack, BRIDGE offers several documents to assist with the development of gender indicators. The overview report suggests methods for developing qualitative and quantitative indicators and addresses the measurement of difficult-to-measure concepts. The supporting resources collection suggests key documents for further reading. There is also an overview brief that summarizes the aforementioned information.

4.3 CIDA. 1997. Guide to gender-sensitive indicators

The Canadian International Development Agency has already created a list of indicators in 1997 concerning gender sensitivity. The organization assesses gender sensitivity at four levels, which are the input, process, output and outcome level. The input indicators deal with data on personnel and staff through different industries and institutions, as well as funding levels. The process indicators focus on community level water facilities and women's role in decision making and their use of the facilities. The output indicators monitor the progress in this. Outcome indicators had not yet been covered by the time of publication.

4.4 Doss. 2013. Collecting Sex-Disaggregated Data to Improve Development Policies.

The article explains the need for sex-disaggregated data, especially on access to assets and ownership, on which data is now only collected at the household level. Sex-disaggregated data on issues such as fetching water, collecting fuel, agricultural land ownership and access to agricultural assets is of interest not only to policy makers, but also to macroeconomists. Household level data does not reveal underlying dynamics in the household, which are important in issues regarding access to resources. On collecting sex-disaggregated data, the author states that it is a matter of simply asking a few additional questions. For each asset owned by the household, ask who owns it, what the value of the assets is and ask about the rights over these assets.

4.5 Doss and Kieran. 2014. Standards for Collecting Sex-Disaggregated Data for Gender Analysis: A Guide for CGIAR Researchers.

Guide for CGIAR researchers on how to collect sex-disaggregated data and how to conduct gender analysis in agricultural research. It provides the reader with simple steps and guidelines on collecting data. First of all, the researcher should identify the appropriate research question and the accompanying methodology. Second, it is important to assess if any additional budget is needed to collect the sex-disaggregated data. Third, the appropriate unit of analysis needs to be identified, which could be any level from individual through community to value chain. Fourth, the researcher needs to assess who should provide the information, i.e., who the respondent will be. For the correct data, ask the "who" question and provide the answer by coding the relevant people. The document furthermore stresses that in gender analysis, the focus should not only be on women; men also need to be consulted.

4.6 Ferdous et al. 2015. Closing the Relevance Gap: Lessons in Co-Developing Gender Transformative Research Approaches with Development Partners and Communities.

This resource provides an overview of the process of creating the Gender and Inclusion Toolbox, for research in Climate Change and Agriculture. The Toolbox, which aims to be gender transformative, is created through a process of social learning. This document provides guidance on how to create a gender toolbox and gives insight into the lessons learned along the way. Important in the development of the toolbox were strategic partnerships with development organizations, in order to create a development-oriented research resource. Moreover, co-learning and language are emphasized, in which it was specifically important to move away from technical language.

4.7 GEWAMED/GWA/FAO. 2012. Passport to mainstreaming gender in water programmes: Key questions for interventions in the agricultural sector.

This document is intended as a rapid appraisal guide for doing gender analysis in agricultural water management projects. The document identifies six priority areas and provides detailed questions to ask for each, including questions for various contingencies (see Table 2 next page).

4.8 Jost et al. 2014. Gender and Inclusion Toolbox: Participatory Research in Climate Change and Agriculture.

This toolbox is designed for NGO practitioners and programme designers in order to integrate gender and social differentiation frameworks. In particular, it will assist in collecting sex-disaggregated data at the beginning stage of climate change and agriculture related projects. First, the toolbox provides a conceptual overview on both gender and climate change related concepts. Second, team-based learning activities are listed to provide support in understanding the gender concepts. Third, a logistics

and planning guide is provided for the preparation and implementation of the project. Fourth, extensive participatory research tools are provided.

Table 2.

1. **Access to land and water** (e.g., use and distribution, land tenure and water rights)
a) Questions for proposed irrigation systems (e.g., Who currently uses the water source? Will the irrigation system change access for women and men? How will farmers outside the area be affected?)
b) Questions related to re-allocation of land (e.g., Who currently uses the land, how will re-allocation change this, what are the selection criteria being allocated land?)
2. **Farming context** (e.g., women and men's different roles, responsibilities, decision-making power, access to resources and outputs)
a) Questions about farming practices
b) Questions about means of production
c) Questions about the benefit from agricultural outputs
3. **Multiple use of water** (e.g., activities that use water, conflicts about water and balancing/negotiating competing demands or priorities, water collection roles)
a) Questions about drinking water (collection, access, quality)
b) Multiple-use water systems and child labour
4. **Management of irrigation systems** (focus on Water User Associations: farmer representation, representation and interests of women, decisions on site location, membership, barriers, procedures and rules)
5. **Water distribution, irrigation practices and maintenance** (focus on practices of irrigation associations: type of water distribution, access to information by irrigators, delivery flow, procedures during water shortages, fees, violation of rules)
a) Key questions for maintenance and construction activities of irrigation systems
b) Key questions for irrigation practices at the farm level
c) Questions for the case of an on-farm well
6. **Environmental issues** (e.g., pollution, water shortage, disaster, climate change)
a) Questions related to water quantity
b) Questions related to water quality
c) Questions related to water re-use
d) Questions related to natural disasters
e) Questions related to climate change

4.9 Salara et al. 2012. Core gender indicators for assessing the socio-economic status of agricultural and rural population.

The purpose of this paper is to suggest gender indicators for the FAO/World Bank/UNSD's "Global Strategy to Improve Agricultural and Rural Statistics." One of the 18 indicators is water-related: "Percentage of holdings/households with irrigated land by land use type and sex of holder/household head." The indicator is recommended for use at the holder and sub-holder levels, which may allow for more consideration of women's access to irrigation when they are sub-holders (i.e. managers of certain aspects of an agricultural operation). It is suggested that the "sub-holder" concept allows more consideration of intra-household decision-making and divisions of labour (see Table 3 next page).

Table 3.

Livelihood Framework, Elements			Global Strategy, Key variables	Gender indicator		SEAGA*					
				Holding/Household	Subholding	1	2	3	4	5	6
Livelihood assets	Human	Household/ holding composition	Sex	Percentage of holding/households by sex of the holder/ household head	available	X	X				X
		Household/ holding composition	Household composition	Avarege holding/household size by sex of holder/household head		X	X				X
		Household/ holding composition	Age in completed years	Average age of the holder/household head and household members by sex of holder/household head	applicable	X					X
		Employment	Number of family/hired workers	Percentage of holdings/households with hired labour by sex of holder/household head	applicable	X					X
		Food security status	Household consumption	Percentage of holdings/households by sex of holder/ household head with the risk of food shortage (past)				X			X
		Education	Highest level of education	Percentage of holdings/households with holder/household head with education level over a CERTAIN level by sex				X	X		X
		Knowledge	N/A	Percentage of holdings/households receiving agricultural extension services by sources of agricultural extension services and sex of holder/household head				X	X	X	X
	Social	Networks and organizations	N/A	Percentage of holdings/households participating in "agricultural" collective actions by sex of holder/household head				X	X		X
	Natural	Land	Land cover and use	Average area of holding by land use type and sex of the holder/household head	applicable		X	X			X
		Livestock	Livestock	Average number of livestock by species and sex of holder/ household head	applicable		X	X			X
		Forestry	N/A	Average area of forest and other wooded land as primary land use by sex of holder/household head	applicable		X	X			X
		Aquacolture	N/A	Average area of aquacolture by sex of holder/household head	applicable		X	X			X
	Physical	Irrigation	Irrigation	Percentage of holdings/households with irrigated land by land use type and sex of holder/household head	applicable			X			X
		Pesticides/ Fertilizers	Pesticides/ Fertilizers	Percentage of holdings/households using chemicals by type of chemicals and sex of holder/houshold head	applicable			X			X
		Agricultural machinery	Machinery	Percentage of holdings/households with selected machinery and equipment by sex of holder/household head	applicable		X	X			X
	Financial	Credit and loans	N/A	Percentage of holdings/households receiving credit for agricultural purposes by sex of holder/houshold head				X		X	X
Livelihood strategies		Livelihood strategies	Area harvested and planted	Percentage of holdings/housholds by type of farming [crop (temporary, permanent), livestock, aquacolture and forestry] and sex of the holder/household head	applicable	X		X			X
		Other income sources	Total income of the household	Percentage of holdings/households with other gainful activity in the household by type of activity and sex of holder/household head		X		X			X

Note: *SEAGA: 1-who does what; 2-who owns what; 3-who has access to/control what; 4-who knows what; 5-who benefits; 6-who should be included in development programme.

Source: Salara et al. (2012, Table 4, p. 2. Reproduced with permission from the copyright holder, FAO)

4.10 Sida. 2015. Gender Tool Box: Women, Water, Sanitation and Hygiene.

Toolbox created by the Swedish International Development Cooperation Agency in order to promote the removal of gender disparities in the WASH sector. The toolbox has identified entry points for the organization to promote gender mainstreaming, which are found at the policy level, in operations, in monitoring and evaluation frameworks, and in strengthening the voices of women and men. Perhaps most valuable is the list of example indicators on which sex-disaggregated data can be collected, such as the time spent on fetching water, share of schools with separate toilets for boys and girls, and the extensive of gender specific objectives in WASH. Most of these indicators are comparable to indicators present in the WWAP Gender Toolkit, and their importance is therefore emphasized.

4.11 UN DESA/UNW-DPC. 2009. Gender-disaggregated data on water and sanitation: Expert group meeting report. (See also summary in Section 2)

In an expert group meeting report on gender-disaggregated data on water and sanitation, UN DESA together with UNW-DPC have created a list of indicators concerning eight water and sanitation related issues. At the household level, the use and perception of water and sanitation is assessed, as well as the decision making on these issues. At a governmental level, the indicators assess public expenditure and the water and sanitation status and public locations and schools, as well as health related issues.

4.12 UNECA. 2011. The African Gender and Development Index 2011: Promoting gender equality in Africa.

A composite index consisting of two parts, a Gender Status Index (GSI) and the African Women's Progress Scoreboard (AWPS). The index addresses quantitative measures but also qualitative policy aspects of gender in Africa. The index contains no water or sanitation indicators.

4.13 UNECE. 2010. Conference of European Statisticians. Task force on indicators of gender equality.

In 2010, the UNECE Work Session on Gender Statistics and the Bureau of the Conference of European Statisticians established a task force on indicators of gender equality. The goal was to identify indicators for monitoring gender equality in the UNECE region. Guided by the Steering Group, the Task Force reviewed existing indicators and established selection criteria for more indicators. One of the areas identified is "Women and the Environment." The most recent update (dated January 2013) stated that the report on indicators would be finalized in March 2014 and would be followed by data collection. No further updates are currently available on the Task Force's website. In November 2010, the Conference of European Statisticians (CES) established the Task Force on Indicators of Gender Equality, to improve the monitoring of gender equality in the UNECE region by consolidating and systematizing the existing proliferation of gender-relevant statistical indicators. This publication contains the result of the work of that Task Force, which was endorsed by CES in October 2014. It presents a set of 115 gender equality indicators recommended for use in countries participating in the work of CES. The indicators are grouped in eight thematic domains inspired by the Beijing Platform for Action and categorized into 42 headline indicators and 73 supporting indicators. The proposals are based on the consideration of policy needs, existing indicator frameworks, relevance to the measurement of gender equality and international availability.

4.14 UNESCAP. 2013. Gender, statistics and gender indicators: Developing a regional core set of gender statistics and indicators in Asia and the Pacific.

In 2013, member states at the 44th Session of the United Nations Statistical Commission agreed to use a Global Minimum Set of Gender Indicators for national surveys. In response, UNESCAP held a regional consultative workshop to develop a framework and core set of gender statistics and indicators for the Asia-Pacific region.

The recommended water- or sanitation-related indicators are listed in Table 4 below. Similar indicators are also presented for rural women, who are identified as a priority group.

Table 4.

Domain 1: "Poverty, Access to Time-Saving Infrastructure and Services"
Supporting Indicator 5: Average time taken each day to carry water in the dry season by age and sex of the carrier
Supporting Indicator 9: Percentage of households with access to sources of drinking water
Supporting Indicator 10: Percentage of households with access to improved sanitation
Domain 4: "Equal Access to Gender-Responsive Education and Information"
Supporting Indicator 48: Proportion of schools without access to water by level of school and rural/urban location
Supporting Indicator 49: Proportion of schools without toilet facilities by level of school and rural/urban location
Supporting Indicator 50: Proportion of schools without separate toilet facilities for girls by level of school and rural/urban location

Source: UNESCAP (2013).

4.15 van Koppen. 2002b. Towards a gender and water index.

Stemming from experience with the Water Poverty Index, van Koppen states the need for a gender and water index and identifies several key "attributes" (i.e. indicators) as an initial step. Drawing on the global literature, she suggests two types of indicators: (1) Direct Gender and Water Attributes (i.e. wherein there is a direct and clear relation between gender and water use/management); (2) Integrated Gender and Water Attributes (i.e. conditions or "prior issues" that can affect the direct attributes and therefore must be addressed as a prerequisite). These integrated attributes align with the emerging emphasis on IWRM as a more comprehensive approach to water management. The focus is on the performance of river basins.

Van Koppen has created a list of indicators that the author considered should be included in a Gender and Water Index for gender assessments of the performance of river basins. The 10 indicators are either direct or integrated attributes and focus on three different issues. First is the minimum and shared intra-household costs for domestic water, second concerns the equal (self-) employment and other benefits from water for productive uses, and the third issue regards the equal participation in water related decision-making. The list of indicators was created after a review of the literature, and all indicators are policy relevant and can be measured empirically.

4.16 World Bank/FAO/IFAD. 2009. Gender in Agriculture Sourcebook.

Module 7 of the sourcebook, entitled "Gender Mainstreaming in Agricultural Water Management," highlights key issues related to gender, water and agriculture. The module includes 12 indicators and associated methods for monitoring and evaluating gender in agricultural water management. The indicators identified are listed in Table 5 next page.

Table 5.

Indicator	Sources of verification and tools
Number and frequency of women, men, and other disadvantaged persons consulted during detailed design and implementation	– Community meeting minutes and records of prioritization and votes
Percentage of women and men actively participating in planning sessions for water allocation program for drinking water and agricultural irrigation	– Meeting minutes – Technical plans indicating water uses and timetable
Percentage of women and men actively participating in water user groups	– Case studies – Meeting minutes or administrative records
By year x of project operation, operational costs are covered with user fees and maintenance fees collected to agreed level	– Bank account records – Women's user groups
Percentage of women and men members of operations and management committees of irrigation projects	– Meeting minutes
Women, men, and ethnic minorities in positions of management or leadership in water user groups	– Meeting minutes – Women's user group committee records
Community satisfaction (disaggregated by gender) regarding water distribution schedules and access	– Focus groups – Interviews, before and after
x percent of women and men among total trainees receiving training in the appropriate use of irrigation for high-value crop production	– Training records
Access of women and men to support services, such as credit and extension (such as percentage of women in agricultural training and of women clients of credit institutions)	– Extension department records – Interviews with women in target groups
Access of landless women and men to water from irrigation schemes	– Community meeting minutes
Among surveyed women in target group, x percent rate their access to water for agricultural and domestic use as having improved during the period covered by the program or project	– Interviews with women in target groups (for instance, a sample of women in the defined area); ideally the interviews should be conducted before and after any project or program activities
Changes in relevant dimensions of well-being, disaggregated by gender and wealth group: Food and other products, household income, labor and other costs for water conveyance, water quality for drinking, and water quantity for hygiene	– Household surveys – Water quality testing by project or local environment department

Source: World Bank/FAO/IFAD (2009, table 6.1, p. 234, © World Bank. https://openknowledge.worldbank.org/handle/10986/6603 License: Creative Commons Attribution CC BY 3.0 IGO).

4.17 Sagardoy. 2006. Gender indicators for monitoring progress in water management.

This paper provides a set of gender and water indicators intended mainly for the agricultural sector. It provides simple percentage calculation formulas for each indicator.

The topics and indicators suggested are listed in Table 6 next page.

Table 6.

Gender and Farm Management
Indicator No.1: Percentage of farms run by females
Indicator No. 2: Percentage of cultivated area run by females
Indicator No. 3: Percentage of the average size of farms run by females compared to those of males
Gender and Irrigated Farm Management
Indicator No. 4: Percentage of [irrigated] farms run by females
Indicator No. 5: Percentage of cultivated [irrigated] area run by females
Indicator No. 6: Percentage of the average size of [irrigated] farms run by females compared to those of males
Gender Labour Contribution in Agriculture
Indicator No. 7: Percentage of female labour contribution to agriculture [measured by number of days spent working in agriculture]
Indicator No. 8: Average number of females / males days used in a average [sic] [measured by total number of days contributed by females divided by total number of farms managed by females]
Access to, and Empowerment in, Water Management Institutions
Indicator No. 9: Percentage of women employed in a selected ministry [selected Ministry/Ministries should be those most involved in agriculture]
Indicator No. 10: Percentage of decision making women employed in a selected ministry [measured by number of women at Director level and above]

Source: Sagardoy (2006).

4.18 van Koppen. 2002a. A gender performance indicator for irrigation: Concepts tools and application

This paper presents an indicator to measure gender inclusivity in irrigation programmes. The indicator requires two key pieces of information: (1) the gender of farm decision-makers in the irrigation scheme and (2) inclusion of female and male farm decision-makers in: (a) water access, (b) forums and (c) leadership positions. Application of the indicator is demonstrated through several case studies (Table 7).

Table 7.

Categorical and concretized land rights	Categorical membership rights	Concretized water rights at farm level	Concretized inclusion in forums	Concretized inclusion as leaders	Ability to function as leaders
-	-	+	-	-	-
Main performer: Agency					

Source: van Koppen (2002a, Table 3, p.15. Reproduced with permission from IWMI).

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