



Counting (Gendered) Water Use At Home: Feminist Approaches In Practice

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Abstract

In recent years, international policy-making bodies, including UN agencies and major donors, have been vocal in demanding gender-disaggregated water-use data, a requirement that is also receiving attention in academic research. Although the data sought is presumably macro-scale official statistics of sectoral water consumption divided into male/female categories, the structure of such data and the means of collecting them remain unclear. The demand for gender-disaggregated data has arisen at a time when feminists have urged researchers to exercise caution in how they generate data, what might be considered as data, and what that information signifies to the users. Feminist scholars also caution against the “knowledge effect” produced by numerical data: an overwhelming conversion of complicated and contextually variable phenomena into unambiguous, clear, and impersonal measurements. Heeding their concerns, I argue in this article that the generation of official statistics cannot be the aim; in order to understand gendered water use, particularly at the microscopic scale of the household, tools must be consistent with broad feminist goals and ideologies. This would necessitate not merely the aggregation of statistical data – referred to here as “counting” – but also consideration of the circumstances in which it occurs and its envisioned purpose



and authorship, typified by questions such as “where does the counting take place?”, “who counts?” and “what purpose is the counting for?”. This research reflexivity and transparency is crucial, lest the numbers subsume decades of hydro-feminist insights by reducing gender equity to simplistic and replicable technologies. To substantiate my argument, I give examples of two recent “counting exercises” undertaken in India and Australia that were based in feminist philosophy and practice.

Counting Water

“Therefore a game is on – between data producing periphery and theory making centre ...” (Samaddar 2012, 42)

Background: data and myth

Samaddar here is referring to the demands that a hegemonic global centre of knowledge make for “factual data” from peripheral sites as a pre-condition for growth, policy-making and development. However, because factual data are not readily intelligible to those unfamiliar with local contexts, the information needs to be standardised and expressed as numbers in order to make each local context easily comparable to the other, and to allow data to be aggregated to higher geographical scales. The field of gender and water is not an exception; the manner in which the need for gender disaggregated data is presented as an absolutely crucial and urgent task makes the generation of numbers seem one of the strategic priorities.

Let me start by recounting the quiet frustration I felt listening to such a call for gender disaggregated data as the critical means, that – to me – seemed extremely misguided, by which to “expand WASH to scale” and “Moving access to scale” during the Fifth World Water Forum (WWF) held in Istanbul in March 2009. The WWF is a massive conference jamboree held every three years since 1997: one of the few global assemblies providing a platform for a large number of stakeholders – including water corporations and engineering companies – interested in water. The WWFs tend to set the direction of policy and action for smaller civil society organisations that depend on funding from governments, global agencies and water corporations. In the second WWF, held at The Hague, the Dutch government pledged to enhance the visibility of gender in thinking about water by funding the Gender and Water Alliance (GWA; see www.genderandwater.org) as an international advocacy body. By that time, a significant body of research by feminist scholars had highlighted the fundamental policy issues: the gender-blindness of water-related policy-making and planning, the gender-differentiated outcomes of some of these policies and projects, gender-differentiated uses of water for productive and reproductive purposes, gendered access to and rights over water, and the overall masculinity of water professionals, making women almost invisible in public spaces that deal with decision-making in relation to water. Following the creation of GWA, the United Nations established The Interagency Gender and Water Task Force (GWTF) through its Interagency

Network on Women and Gender Equality (IANWGE) in 2003, primarily to include a gender component in the “Water-for-Life” Decade, 2005–2015, led by UN-Water. It was intended that the Task Force would push the gender and water perspective to the forefront of the global policy-making agenda in order to mainstream gender into national and international programs for the Decade, and link the achievement of the Millennium Development Goals (MDGs) for gender equality with the water and sanitation goals.²

Owing to membership of the Steering Committee of GWA, I was fortunate to participate in the WWF discussions. With collective hopelessness, members of our group witnessed the dissolution of the notion and the significance of gender during the Forum debates, marking a return to the essentialist vocabulary of “women and water” and regressing to a “Women in Development” approach that is considered obsolete by most feminists and development scholars (see Sandler and Rao, 2012; England, 2010; Baden and Goetz, 1998). The epistemological shift these meetings signalled was a matter of concern. The fifth WWF was remarkable not only because of its size – the number of participants from countries across the globe – but also because of the presence of a significant number of heads of states, and the regional and thematic topic approaches set by the organising committee. The strong focus on official processes and presence made the WWF the site of several significant protests by civil society organisations, which held parallel meetings outside the conference venue. Inside the conference, the idea of “upscaling”³ was invoked repeatedly as the panacea for understanding the information drawn from small, grassroots-level initiatives, which were mostly funded by global bodies. As part of the highly structured approach of the conference, thematic issues – “boxes” – including panel sessions were arranged by specific organisations. One panel discussed “Keeping sanitation high on the agenda”, in which the representative of a global organisation insisted on the need for gender-disaggregated data on water, but had no answer when asked about the *scale* and *kind* of data to which she was referring. Further query also revealed that her mind was set on quantitative facts and figures that were produced by official sources, data that by their nature avoid engaging with the messy complexities produced by gender relations shaped in the local context, specific cultures, or the practicalities of data collection (Kloosterman *et al.*, 2012), and that seek to divide water use to different sectors and reduce it to male and female populations.

Such data are what Green (2012) describes as “killer facts”: facts that appear so effective that to many readers they eradicate alternative explanations, frequently

² The full report of its activities is available at http://www.unwater.org/downloads/tfReport2005_06.pdf (viewed on 17th August, 2014).

³ See for example, the recommendation: ‘Scaling up the implementation of large operations based on successful pilot projects’ (WWF, nd., p. 93) or ‘Scaling up of financial support’ for water infrastructure in Africa (WWF, nd., p. 105).

having greater impact than research analysis which considers contextual, place-based analyses. An illustrative example of this is that “45.2 percent of countries do not produce any gender statistics related to water” (UNESCO, 2014): once sound-bite statistical claims such as these are reproduced in reports and stakeholder webpages with sufficient frequency they are set in concrete to achieve a self-fulfilling sense of unparalleled authenticity.⁴ Moreover, they create what Marilyn Strathern (2004, 17) has referred to as “portable knowledge”, used to generate data at the macro-scale of sectors by official agencies, and in calculating the water footprints of industries, agriculture and cities. If such data are divided into male-female numbers, they can easily lend themselves to illustrative graphs and maps to describe women’s conditions. Geographers have excelled in this kind of mapping. Although killer facts are intended for specific uses, they essentially are macro-scale, officially produced numbers that can be used to obfuscate significant feminist insights gained through years of action and advocacy (Ahmed, 2005). Eventually, the vast truckloads of material that feminist scholars have written to query the meanings of data – what is presented as valid data? who creates these data and for whom? – makes no sense to the exponents who demand gender disaggregated data from higher platforms of authority attributed by powerful international agencies. Why has this chasm between the understandings of advocates and policy makers developed? Where did we go wrong?

Querying the search for data

The panellist I mentioned above was referring to a 2008 UN Headquarters “Expert Group” meeting that was held at the UN headquarters in late 2008, and that identified, among a host of “problems”, the “astonishing lack” of comparable gender-disaggregated data in the water and sanitation sector (as reported by Seager, 2010, 1). The point made at that meeting is that numerical data on gendered water use is primarily needed to develop “gender indicators” by development planners,⁵ who consider the paucity or unavailability of this information as a primary stumbling block to establishing a gender-integrated policy regime that fits social/cultural structures to institutional culture, and the extent and seriousness of institutional commitments and accountability (Seager, 2010, 1).

Bear in mind that the experts at the meeting were voicing a general sentiment that has been felt strongly for some time across all groups dealing with

⁴ A senior researcher on gender, food and agriculture, Professor Cheryl Doss has been trying to bust some of the “numerical myths” often propagated to underline women’s roles in agriculture, food production and farm work (see for example <http://www.fao.org/docrep/013/am307e/am307e00.pdf>). According to her, the use of such data redirects attention away from the significance of agriculture for women.

⁵ For example, a recent World Bank (2014) project document notes the need for numbers and outlines some methods to track progress in regards to gender using gender-disaggregated data and indicators. Although this indicates an intention for strategies to *target* women, details on how this will be done and what specific measures are recommended are absent.

policy-making.⁶ Water-use data are generally sectoral at the macro-scale, and they generally pertain to small geographical units such as cities, villages and neighbourhoods (see Hoekstra and Chapagain, 2006, for example). Because this kind of water use data are collected by technical experts such as engineers who do not wish to invade the sacred domain of the household, they consistently refer to households as a single unit (Zwarteveen, 2006). Nonetheless, a large body of feminist research has questioned the traditional view that individuals within the household share the same preferences, share in household chores, or pool their resources, and has demonstrated that the rights, resources and responsibilities of household members – especially men and women – may be different (Quisumbing, 2003, 1). Consequent to the identification of a clear *need*, development practitioners, policy-making bodies, and the scholarly community have intensified their search for tools and methods⁷ that can generate sex- and/or gender-disaggregated numerical data.⁸ The formidable task of making quantitative data gender-disaggregated is particularly pronounced in what is seen by policymakers broadly as “the water and sanitation sector.” This paper is placed in the context of this heightened sense of a gap and the invigorated global search for gender-disaggregated data on water use.

I argue that like other such information, gender-disaggregated data must first of all apply to specific geographic scales, such as global, regional, national, or smaller political units of administration. Further, I argue that the generation of numbers cannot overwhelm the purpose for which data are gathered; in order to understand gendered water use, the tools must be consistent with broad feminist goals and ideologies, and be rooted in feminist insights gained through years of research and activism on gender equality. This strand of my argument is based on recent work by Llewelyn (2007) and Hochfield and Bassadien (2007). Feminist geographers have persistently underlined that feminist theory and research design are not mutually isolated; methodological pluralism is one of the ways in which to transform scientific paradigms (Dyck, 2002; Rocheleau, 1995). Translating feminist insights into operational tools would mean asking questions concerning context, authorship, and intent, namely: “who is conducting the research?”, “what is the ultimate goal of the project?” and “where does it take place?” – this is necessary lest the numbers subsume decades of insights by hydro-feminists and thereby reduce the complex world of power and resource inequities into an

⁶ See also http://www.un.org/waterforlifedecade/pdf/un_water_policy_brief_2_gender.pdf (accessed on 17th August 2014).

⁷ Following Harding *et al.* (1987, 3) I note the difference between method and methodology: the latter implies a theory and analysis of how research should proceed, whereas “method” comprises the techniques for gathering evidence.

⁸ The search occurs in other areas as well: see FAO’s 2003 booklet on gender-disaggregated data at http://www.onlinewomeninpolitics.org/sourcebook_files/Resources5/Gender-Disaggregated%20Data%20for%20Agriculture%20and%20Rural%20Development.pdf (viewed on 24th February, 2012).

inaccurately simplistic perception of the world as wholly comprehensible in terms of geography by numbers (Harding, 1991). To support my argument, I first outline the epistemological challenges involved in quantifying gendered water usage at the household scale, and then present the examples of two recent counting exercises undertaken by grassroots groups located in India and Australia to demonstrate that a robust analytical tool, based on sound feminist philosophy, would not merely aim to generate quantifiable data, but would also be participatory, inclusive, and reflexive for all concerned.

My argument is based on the position that numerical data tend to convey a sense of certainty, and produce a “knowledge effect” (Engle Merry, 2011, 584). Numbers are presented as authentic, yet they overwhelmingly convert complicated and contextually variable gender phenomena into unambiguous, clear, impersonal measures that lend themselves easily to a preconceived style of regulation and governance (Przybylo, 2013). The power of quantification is exercised through an obliteration of geographical scale, particularly microcosmic domains such as the household. Feminists have long been searching for alternatives to the positivist frameworks based on overtly quantitative methods, and their production and valorisation of certain *standards* of knowledge (Ackerly and True, 2010). They also note that the exact nature of data differ according to the “units under study” (Dijkstra and Hanmer, 2000). The disaggregation of secondary data pertaining to broader geographic scales, such as national political units, is still possible, but most important for feminist researchers now is the challenge of generating such data at the micro scale while taking into account hard-to-measure factors such as power relations and gender inequalities.

Indeed, the intra-household domain is no longer the *terra incognita* that it used to be; in recent years research into this microscopic arena of gender contestations has flourished. Two broad strands of research can be detected: one follows the established path of model-building or quantitative time-use surveys; the other takes the less-travelled path, applying qualitative research approaches used by those who believe in the involvement of research participants. These two domains of knowledge rarely converse with each other, producing different senses of the universe they study and leading to poor cross-fertilisation of ideas and little mutual enrichment. There is, consequently, discernible confusion over exactly what is meant by “data”, and this issue has rarely been debated within and between the two domains. While feminist critiques of science have suggested a closer assessment of the nature of objectivity and the categories used for counting (Harding, 1986), feminist empiricists have made women and their interests and contributions more visible through the use of quantitative measures and choropleth mapping which have been important contributions to geography (Seager, 2009; Raju *et al.*, 1999). However, such mapping based on officially-produced statistics has the potential to decontextualize data, a danger in dealing with households as some feminists would point out. Instead of a conversation, a default assumption reigns among those following positivist tools in mapping gender: official statistics only – to the

exclusion of critical specificity – continues to be seen by them as valid, respectable, and reliable data, even where it ignores, neglects, or fails to illuminate aspects of gendered water use at the microscopic scale of the household. As a result, gender-disaggregated statistics generally become equated with numbers that are only disaggregated on the basis of sex (Warren, 2007).

Hoping to initiate a conversation and to show what is being done around the world to generate gender disaggregated data, I briefly introduce two recent tools – the *Water Diary* and the *Gender Equity Gauge* – that were developed and used in two widely differing contexts. The *Water Diary* was developed partly to generate robust gender-disaggregated numerical and textual intra-household water-use data in urban Australia (Lahiri-Dutt and Harriden, 2008). The *Gender Equity Gauge* was conceived by a group of feminist scholar-practitioners to address growing gender inequities in access to water and associated decision-making processes in rural India and Nepal (SOPPECOM, 2011). Through these two examples, I show that the practical, participatory and transformative elements of these tools not only generate numbers but also address feminist concerns over research methodologies.

To start with, the following sections of the paper present a critique of contemporary global separation of gendered water use in both less and more affluent contexts, and discuss the nature of the household within a critique of water epistemologies from a feminist perspective. The purpose is to move away from the dominant conceptualisation of household water supply and use as a predominantly *technical problem* by global policymakers without engaging with gender inequality within the household. In my view, this problematic conceptual location of water use obscures persisting gender inequalities within households. The examples are meant to suggest approaches that can produce gender-disaggregated data to illuminate the challenges of gender equality at home.

Looking for data in familiar places?

The intrahousehold “black box” remains partly because of contradictions within the discipline of economics – and between economics and other disciplines such as sociology – regarding what constitutes a household and how it operates. Under the circumstances, the acquisition of intra-household gendered data poses a particular challenge to water specialists for two reasons: first, the very nature of households as repositories of gendered power relations; and, second, the poor acknowledgement of existing gender disparities within households in more affluent nations.

To begin with, the household constitutes contested terrain where bargaining for power and adherence to culture results in complex combinations of sex- and/or gender-based divisions of labour. Feminist economists (such as Agarwal, 1997) have pointed out that the household is not really the level playing field imagined by neo-classical economists. Recognising households as sites of resource conflict and bargaining means attention must be paid not just to differences *between*, but also *within* households (Kabeer, 1997). Within households the differences among

individuals may arise depending on their gender, age, occupation, and differences in income-earning capacities. Each of these disparities leads to inequities in power and authority within households, reflected in water chores and usage patterns. For water scholars, particularly those working on water use through a gender lens, intra-household water use has therefore continued to pose a difficult challenge, making it a poorly-understood unit of study. In more developed countries the latest forms of directed water metering – known popularly as smart meters – are able to record when and how much, but only in a very general manner. With smart meters it is possible to keep track of where water is used and when it is used within a household; the use can be indirectly extrapolated to guess who might have been at home at the time. Still, it is impossible to pinpoint precisely who used the water. Most quantitative data-based water-use studies in urban contexts of more affluent countries do not move beyond comparing different income group households (e.g., Troy, 2008).

In countries where water access itself is a major issue, no such meters exist, and the close relationship between household chores and water use is well established.⁹ The focus is on existing, and often inequitable, gender-based divisions of labour within the household associated with gender chores, making it impossible to clinically investigate water use within the home without paying due attention to the domains of unpaid work and divisions of domestic labour.

In more affluent nations where inequities in access to water are not the obvious issue, feminists have been debating how household chores are accomplished and by whom, and although some of these sexually-based divisions of labour are showing signs of change in more affluent countries, gender roles remain most persistent within homes (Bianchi *et al.*, 2012).¹⁰ Brines (1994) point out that the division of labor within households not only persists but also leads to the segregation of private space. Bittman and Wajcman (2004), note that the more a husband depends on his wife, the less he works at home, possibly to reassert his masculinity within the home. Feminist sociologists (Coltrane, 2000) explain this phenomenon with the notion of ‘doing’ gender, that is, individuals performing the internalized gender-role expectations held by others. Bryson (2007) describes the reorganization of personal lives at home as an extension of the time discipline of capitalism: a linear, goal-oriented, commodified ‘clock time’, analysed with “time diaries” (Sayer, 2005).

⁹ For example, see the “24-hour day” in Gender and Water Alliance (GWA) Training of Trainers in Integrated Water Resource Management Manual. This and other modules are available from <http://genderandwater.org/en/gwa-products/capacity-building/tot-modules> accessed on 8th August, 2013.

¹⁰ A growing body of literature (see Kim and Zepeda, 2004; Alston, 2006; also Burns and Preston, 2010 for a discussion of the gender wage gap in Australia) observes that the intra-household domain within wealthy countries is not exactly the level playing field it is presented as.

It then becomes apparent that we should continue to focus on the valuation of women and men's contributions and needs in both more and less affluent countries to think about inequitable power relations at the intra-household scale (Brown, 2013). Significantly, it is these relations between time and tasks that display the commonalities between women's experiences in richer and poorer countries, and considerably diminish the idea that gender-disaggregated water data is important simply in terms of its capacity to solve a development problem (propounded for example by Ilahi, 2000). It is true that in less affluent nations, gender relations assumes a vitally important role in shaping water use at the intimate scale of the inhabited space of the home (Sultana, 2011), but the poor voice of women becomes evident across the board in water management (Berry and Molland, 2010), including in the households of more affluent nations.

The consequent challenge in measuring household water use is to develop methods that are based in feminist praxis. These practices include tools that are participatory (involve research subjects as participants in generating data themselves); that promote reflexivity and sensitisation (creating awareness of what their own water-use behaviours and practices are); that have the potential to be transformative (change behaviours through that awareness); that highlight women's practices and knowledge; and that are robust enough to adapt to diverse circumstances and situations. Such tools do not need to be "either-or", but would be able to combine quantitative and qualitative data.

Whether rural or urban, affluent or poor, the household poses a major epistemological challenge to feminist research into water-usage. Arguably, one dimension of this challenge is the reluctance of gender specialists researching water use to be regarded as feminists. In water studies, policy-making, and ground-level action, the term "gender experts" – but not "feminist" – is widely used, leading to male-female interpretations of data that generally avoid getting into the gendered politics of water. Moreover, water-use experts are often women from developed donor countries funding water-related projects in developing countries (see White, 2006, for a commentary on power inequities inherent in such relationships). Therefore, it is not uncommon to see a general tendency to regard water issues as pertaining to *the Other* in literature on water, as though all the gendered dimensions of water are to be found in poorer regions and in poorer countries, and that gender relations cannot be understood through water use (Ahmed and Zwarteveen, 2012, 14). The remaining countries – generally predominantly white, middle-class, industrialised societies – are presumed to confront neither water use problems in relation to gender, nor a compelling need for gender-disaggregated data.

Feminist Epistemologies and Gender-Disaggregated Data

Methodologies are often confused with epistemologies and research methods (Beetham and Demetriades, 2007, 199). Feminist researchers have shown that many conventional methodologies, epistemologies, and methods, while

claiming to be scientifically “objective”, are in reality just the opposite. Instead, they neglect women’s knowledge and show bias in favour of male perspectives (Harding and Hintikka, 1987). Methodologies used for research on gender were developed from critiques of particular sex, class, and race biases found in dominant and conventional research methodologies. In order to take into consideration gender in all its complexities, a crucial aspect of feminist epistemologies is their ability to adapt to disparate circumstances and situations. For Beetham and Demetriades (2007, 200), the recognition that there is no one specific method or combination of methods that necessarily make research “feminist” is crucial to the concept of research from a gender perspective. This research derives instead from an approach that is considerate of the multifaceted nature of gender and the hierarchical power relations that disadvantage women in favour of men. Thus, the research approach itself – the research framework – is critically important: “the emphasis ... is on using methods which can best answer particular research questions, but always using them in ways which are consistent with broad feminist goals and ideology” (Jayaratne and Stewart, 1991, 91). Echoing this sentiment, Brooks and Hesse-Biber (2007, 4) note that feminism is connected in principle to feminist struggles, and its goal is to “foster empowerment and emancipation”; feminist researchers “emphasize the synergy and interlinkages between epistemology, methodology, and method and are interested in the different ways that a researcher’s perspective on reality interact with, and influence, how she goes about collecting and analysing data”.

From the calls for sectoral gender-disaggregated data, it appears that research on women has fallen into an epistemological quagmire for two reasons: first is the problematic understanding of data, or what constitutes the right kind of data, and second is the need for placement of research on gender and water within the context of development. To deal with the first, a surprising prioritisation of quantitative data and analysis ensues from the conceptualisation of the water and sanitation sector as largely a technical, technological, engineering or biophysical field, rather than a holistic part of the context of gender inequality. Hence, while the 2008 UN Expert Group report critiqued the dominant conceptualisation of household water supply and use as a predominantly *technical problem* – and the framing of it in such a way as to locate the problem within the “common” or gender-neutral area – it still contributed to the conceptual lack of clarity by not identifying the roots of gender inequality within the household. Indeed, this problematic conceptual location of water use obscures the gender inequalities within households and prevents the full development of methods that are able to generate gender-disaggregated data.

The placement of gendered water use within the array of technological fixes is needed to solve this problem. However, in addition to this, gender research in water use has remained static because the perceived need for gender-disaggregated data has been restricted within the field of development (UN, 2008), marked by deliberation of women’s rights over or access to water, most commonly in poor

countries and, with rare exceptions, by feminists based in affluent nations (Sangameswaran, 2012, 112). Such a trend has followed the rise of Gender and Development theory, which adopts the recommendation of the Beijing Platform for Action (1995) that gender mainstreaming should integrate men and women's concerns into all stages of policy-making and project implementation. As a consequence, efforts to produce gender-disaggregated data are primarily invested in the form of toolkits targeted at development practitioners.

Within the water sector, non-governmental agencies have sought to disaggregate data along gender lines on the direct or indirect impacts of water- and sanitation-related development projects. However, more often than not these well-meaning tools disaggregate secondary, official data along gender lines, or collect and/or use the data collected through simple field methods such as rapid rural appraisal in gender-sensitive ways. Thus, although well-intentioned, these tools may reduce gender to a supplement to conventional methodologies.

In the next section I outline two feminist methods that have been developed and used in two different contexts in recent years. These are the *Water Diary* (WD), and the *Gender Equity Gauge* (GEG). I have been closely involved in the development of both tools. On the first, jointly with Kate Harriden, I developed one of the first measures of intra-household water use (Lahiri-Dutt and Harriden, 2008). The tool was used on a wider basis by Harriden (2013) in two successive surveys (WD 08 and WD 09 surveys) in the Australian Capital Territory (ACT), coinciding with a severe phase of drought in the area and resultant acute awareness of the limited nature of water supplies, as well as water restrictions imposed on all households.¹¹ The second of these three *Water Diary* studies was funded by GWA, where I was an elected member of the Steering Committee.

The second of these tools, the *Gender Equity Gauge* (GEG), was developed by a group of gender water researchers working in the NGO research organisation in India, called the Society for Promoting Participative Eco-system Management (SOPPECOM), the primary researcher in the study being Ms Seema Kulkarni. I was a member of the Advisory Board along with prominent feminist water researchers based in India and abroad. A team of local researchers undertook the field exercise on GEG primarily under the supervision of Seema Kulkarni, who also played the key role in compiling and publishing the report on the Society's website. As one of the members of the advisory group, my specific tasks involved assisting in the full development of the tool and in critical analysis of the material presented in the reports, individually and in a workshop discussion. The project was also funded by the GWA.

¹¹ I was less involved in the two latter surveys, excepting in my advisory role and as a member of one of the participating households.

The Water Diary

A curious look at an A. J. Nielson's Radio Use Survey delivered at home, together with the use of "food diaries" and "time diaries" to measure gender differences in paid and unpaid work in middle-class homes in India (Sil and Lahiri-Dutt, forthcoming), were the inspirations behind the development of a similar tool to undertake an exercise on water use studies. The diary as a tool to explore household dynamics has recently become popularised by Collins *et al.* (2009), and a number of studies have adopted variations of the tool (see Lahiri-Dutt and Samanta, 2013, for a more qualitative approach to financial diaries). The initial study was trialled in the accessible urban areas of the ACT as funding required to test the tool in the context of the Global South was difficult to secure. The WD I created for the early stages of research went through successive phases of refinement and redesign by Ms Kate Harriden, the Principal of New Flows Research, and the Director of Household Water Researcher Network. Previously, Allon and Sofoulis (2007), building on the work of Sofoulis *et al.* (2006), had used WD to produce data of a qualitative nature on water use in urban homes in Sydney. The tool we used is simple: participants volunteer to keep a record – the *Water Diary* – of all their and their guests' water uses at home for seven days, in a hard-cover WD booklet. This includes details of the purpose the water was used for, the time of the activity, who used the water, and the amount of water used. Many participants required additional training to estimate and record the amounts of water they used. The diary approach also gathers qualitative data about household water-use practices and water-chore performance through either a questionnaire or interview (see Harriden, 2013). The participants are self-selected, so their involvement and enthusiasm make this data-generation exercise highly participatory. The booklet also contains a questionnaire, which provides household characteristics – using identification keys such as "F1" to signify the oldest female – and qualitative insights into the water-use data. Water-use data pertained to roughly 30-minute blocks, covering the 24 hours of the day. Using the identification key generated on the household information page (for example, F1, M1), participants record the time they performed a water-using activity. Depending on the activity type, they can record water consumption by the types of uses – washing machine, dishwasher, toilet flush, washing dishes by hand, bath, food preparation/drinking, cleaning, pets, pool/spa, shower, bath, garden, air-conditioner, and miscellaneous – the amount of time that water flowed, and the number of litres used (see Lahiri-Dutt and Harriden, 2008; Harriden, 2013).

Gender Equity Gauge

The *Gender Equity Gauge* (GEG, also called the *Social and Gender Equity Gauge*) marked the first phase of a feminist project commenced by a group of grassroots researchers in the late 1990s. The main purpose of the GEG was to develop and demonstrate a tool that can potentially capture the social and gender inequities in the uses of water in rural homes in South Asia to establish the relation

between water and equity and map access to quality and quantity of water by different social groups. The development of the tool, along with pilot testing, constituted the salient features of the project. The GEG was trialled in 2011 in Nepal and India, and analysis of the primary and secondary data was undertaken at the Society for Promoting Participative Eco-system Management (SOPPECOM). In India the study was located in the western Indian state of Maharashtra in its northern drought-prone district of Ahmednagar. In Nepal the study was located in the hill region district of Kavre Palanchok, and the Terai region of Chitwan. Both districts are in the central part of Nepal and capture the diverse geographical conditions of the country. A sample of 300 households was studied in India, and 182 for both districts in Nepal, totalling 482 households for both countries.

The GEG project focused on multiple inequities as they are experienced by women of different social groups, and adopts a definition of equity as a structural phenomenon that links micro-processes and mechanisms of distribution and representation to larger dynamics of global market systems. In this sense, the project engaged with the larger questions of who benefits from certain kinds of water development and why. The understanding of equity as relational was based on the realisation that the meaning of equity depends on specific social and material conditions at a given time. This constituted an explicit departure from the more abstract definition of “equality” that often invokes notions of equity or justice. The latter abstract definition is based on normative Western models of liberalism, outlining *ideals* of justice rather than examining what it signifies in practice; often it presents individual autonomy both as the starting point and the goal of development proposals towards increased social equality. The tools used to assess inequities at the household level hinged upon a survey instrument, focus group discussions, spatial mapping, and field observations. Teams of six to eight researchers were deployed to visit households in each of the areas because unlike the more literate ACT residents, most households in GEG survey had little or no education. The households were also low-income and generally low-caste.

The GEG was based on the premise that inequities in water use can best be conceptualised in terms of differences in *water control*. Water control is at the heart of thinking about how water resources are managed at home, in communities and at macro-scales, and can be conceived as a process of *politically contested resource use*. Contestation refers to a range of interaction patterns in water management, including negotiation and struggle, and also less-explicit and longer-term disputations and controversies. The idea of water control also conveys the notion that there is something at stake in water use, and that different individuals or groups involved have different interests; some groups of people are better situated than others to secure access to water, to control water resources, and to determine water regulations.

The critical issues examined by the GEG were who has control over water and who makes decisions around its use. This involved exploration of three issues: *access* to water; the specific *chores and activities* around water; and *participation*

in decision-making and/or planning processes related to water. The analysis of data broadly looked at how gender, caste and community/village leadership influence access to water. The method robustly examines the inequities in access to water and land resources, as well as the gendered dimensions of water use and access through the work that women engage in.¹²

Between them, the two tools described above were used in widely diverse contexts, but similarly yielded results that point to gross gender inequalities in water chores that are directly correlated to the sexually based division in the performance of household responsibilities. Many commonalities among research contexts were apparent; for example, the gendered nature of task allocation within the household. These similarities reiterate Anderson's (2005, 452) view that gender inequalities in the Global North are also increasingly a matter of economic justice for women, and that, based on our current and refined understanding of differences within the category of women, time has arrived for feminists to begin to examine the commonalities arising from persistent gender inequalities in access to resources (Lahiri-Dutt, 2006).

Reflecting further on the two tools, the GEG was marked by more freedom of inquiry, which is a hallmark of sound feminist analytical approaches. It created space for the integration of insights into the different realities of socially diverse groups of people, enabling a broader, shared understanding of a complex social context. This is because of researchers' clearer understanding of social and gender inequities in low-income rural areas than among urban and high-income demographics, and the engagement and contributions of a large advisory team with many years of experience in researching gendered water use in the field.¹³ However, the WD was more participatory and led to an overall increase in the awareness of the participants' personal sense of the absolute amounts of water use, encouraged reflection of water wastages, and resulted in some changes in water-usage behaviour. As a tool, in addition to compiling a set of results, the WD led to heightened levels of reflexive awareness that can potentially lead to change. The WD also ensured that engagement with participant households was protracted – usually a continuous block of 7 days – whereas the GEG needed to be based initially on the more conventional one-time survey, supplemented by focus group discussions and interviews. Regardless of the disparities and failings of the two approaches, considered together, these studies created new epistemological spaces in which traditional research tools could function: interviews and diarised records generated situated and collaborative knowledge on a little-known area of women's and men's lives.

¹² The full report that emerged from the GEG exercise is available from the SOPPECOM website: <http://www.soppecom.org/team.htm> accessed on 8th August, 2013.

¹³ For example, the larger team included Professor Amita Shah (Director of Gujarat Institute of Development Research), Dr Sara Ahmed (the then Chairperson of GWA) and Dr Margreet Zwartveen (Wageningen University).

Studying Water Use in Households: From Feminist Insights to Analytical Tools

Rocheleau (1995, 465) suggests that rather than adding women to existing and standard methods of empirical research, it is possible to incorporate feminist perspectives into research designs that can be applied to diverse social contexts. In this way it is possible to address questions of gender in water policy. Similarly, Jackson (2006, 516–517) argues that feminist research begins “from below” to enhance objectivity and the portability of knowledge, building solidarity across class and educational divisions, and predisposing us to the use of languages which “include” rather than exclude. This is an important task. In a scenario of increasingly uncertain water supplies and growing water demands, one needs to understand intra-household water use in both rural and urban areas in order to create a body of knowledge that can contribute to more effective and efficient water policies, and to services that address demand management. Unless water suppliers know who uses the water, management policy is unlikely to succeed. Restrictive measures will not accurately identify and address those who use water, how much water they use, and why. Through such identification, institutional managers would be able to address how water use reflects ongoing gender inequities and commonalities.

This is where an approach firmly rooted in feminist theory and practice assumes great significance. Methodology that is grounded in feminism would resist containment within a specific discipline. More importantly, as the examples of WD and GEG have shown, the specific tool would contain practical, participatory, and transformative elements of feminist philosophy and ensure the critical political feminist insights of gender inequality. As the experience of using these tools demonstrates, the generation of quantitative data is necessary but not sufficient: the processes and tools that generate gender-disaggregated data must also be considered. Unless they incorporate sound feminist perspective, their capacity will be severely limited. This is where tools such as WD and GEG are useful in efforts to define the inequities of power affecting women’s lives.

Finally, we might reconsider whether a tool developed by feminists for breadth of use by other disciplines needs to be replicable. While devising a tool that is replicable without reference to contextual particularities cannot be the ultimate feminist objective, replicability itself can be a beneficial attribute. A feminist tool can, as indicated by both WD and GEG, be adapted to the specific context in which it is being deployed. For example, a current challenge exists in using WD in households with little or no literacy, thereby developing a participatory manner of mobilising research assistance to record water usage accurately.

Where to from here? Feminists in their research have continually emphasised the need to capture the everyday lives of women and household members, but the messiness of everyday life precludes the development of sophisticated tools capable of capturing the complexities of such daily chores.

Adkins (2009, 336) argues for “new forms of measure” not “because they are external to or outside of reality, nor because they make reality, but because they are part of reality.” In the short space of this paper I could not delve into the many finer details of subjective observation and experience, or the structural and institutional constraints encountered by researchers during the research process, but one can hope to ignite further discussion.

As Samaddar observed (2012, 42), the production of data and the self-referential exercises of producing knowledge are drawing closer together in the postcolonial world. One might note Smart’s (2009, 305) argument that methods ought to be devised with a purpose relevant to those participating in that research, and should be tailored to constitute a means of knowledge co-construction. Eventually, as feminist researchers, we can begin to see methods as fluid and capable of change depending on their specific purpose or circumstances. Following this line of thinking, I end by noting that debates over methodologies should not cease with questions regarding the purpose and process of collecting and analysing data. In thinking about water use by women and men at home, we need to explore how to represent the gendered worlds and experiences of those who comprise what until recently has been the unquestioned atomistic unit of understanding: the household.

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References

- Ackerly, B. and J. True. 2010. *Doing Feminist Research in Political and Social Science*. London and New York: Palgrave Macmillan.
- Adkins, L. 2009. Feminism after measure. *Feminist Theory*, 10(3), 323-339.
- Agarwal, B. 1997. “Bargaining” and gender relations: Within and beyond the household. *Feminist Economics* 3(1), 1–51.
- Ahmed, S. 2005. *Flowing Upstream: Empowering Women Through Water Management Initiatives in India*. New Delhi: Foundation Books.

- Ahmed, S. and M. Zwartveen. 2012. Gender and water in South Asia: Revisiting perspectives, policies and practices. In M. Zwartveen, S. Ahmed and S. R. Gautam (eds.), *Diverting the Flow: Gender Equity and Water in South Asia*. New Delhi: Zubaan, pp. 3-30.
- Allon, F. and Z. Sofoulis. 2007. Everyday water: Cultures in transition. *Australian Geographer* 37(1), 151-79.
- Alston, M. 2006. Gender implications of water management in Australian agriculture. In, K. Lahiri-Dutt (ed.), *Fluid Bonds: Views on Gender and Water*. Kolkata: Stree, pp. 246-57.
- Anderson, M. L. 2005. Thinking about women: A quarter century's view (Sociologists for Women in Society Lecture). *Gender and Society* 19(4), 437-55.
- Baden, S. and A. M. Goetz. 1998. 'Who needs [Sex] when you can have [Gender]?' *Feminist Review* 56, 3-25.
- Beetham, G. and J. Demetriades. 2007. Feminist research methodologies and development: Overview and practical applications. *Gender and Development* 15(2), 199-216.
- Beijing Platform for Action. 1995. Summary available from <http://www.un.org/womenwatch/daw/beijing/platform/> viewed on 21st October, 2014.
- Berry, K. and E. Molland. 2010. *Social Participation in Water Governance and Management*. London: Earthscan.
- Bianchi, S. M., L. C. Sayer, M. A. Milkie and J. P. Robinson. 2012. Housework: Who did, does or will do it, and how much does it matter? *Social Forces* 91(1), 55-63.
- Bittman, M., and Wajcman, J. 2004. The rush hour: The quality of leisure time and gender equity. In, N. Folbre and M. Bittman (eds.), *Family Time: The Social Organization of Care*. London: Routledge, pp. 152-78.
- Brooks, A. and S. N. Hesse-Biber. 2007. An invitation to feminist research, In, S. N. Hesse-Biber and P. L. Leavy (eds.), *Feminist Research Practice: A Primer*. Thousand Oaks: Sage Publications, pp. 1-26.
- Brines, J. 1994. Economic dependency, gender and the division of labor at home. *American Journal of Sociology* 100, 652-88.
- Brown J. 2013. Can participation change the geography of water? Lessons from South Africa. *Annals of The Association of American Geographers* 103(2), 271-79.
- Bryson, Valerie. 2007. *Gender and the Politics of Time: Feminist Theory and Contemporary Debates*. Bristol: Polity Press.

- Burns, A. and A. Preston 2010. Is Australia really a world leader in closing the gender gap? *Feminist Economics* 16(4), 81-103.
- Collins, D., J. S. Morduch, S. Rutherford, and O. Ruthven. 2009. *Portfolios of the Poor: How the World's Poor Live on \$2 a Day*. Princeton and Oxford: Princeton University Press.
- Coltrane, S. 2000. Research on household labor: Modeling and measuring the social embeddedness of routine family work. *Journal of Marriage and Family* 62(4), 1208-33
- Dijkstra, A. G. and L. C. Hanmer. 2000. Measuring socio-economic gender inequality: Toward an alternative to the UNDP gender related development index. *Feminist Economics* 6(2), 41-75.
- Dyck, I. 2002. Further notes on feminist research: Embodied knowledge in place. In, P. Moss (ed.), *Feminist Geography in Practice: Research and Methods*. Oxford: Blackwell, pp. 234-44.
- England, Paula. 2010. The gender revolution: Uneven and stalled. *Gender and Society*, 24(2), 149-166.
- Engle Merry, S. 2011. Measuring the world: Indicators, human rights, and global governance. *Current Anthropology* 32 (Supplement 3), 583-95.
- Green, D. 2012. How to write killer facts and graphics: What are your best examples? Available from <http://oxfamblogs.org/fp2p/how-to-write-killer-facts-and-graphics-what-are-your-best-examples/> (viewed on 24th August 2014).
- Harding, S. 1991. *Whose Science? Whose Knowledge? Thinking from Women's Lives*. Ithaca, New York: Cornell University Press.
- Harding, S. and M. B. a. 1987. *Discovering Reality: Feminist Perspectives on Epistemology, Metaphysics, Methodology, and Philosophy of Science*. Dordrecht: Kluwer.
- Harding, S. 1986. *The Science Question in Feminism*. Ithaca: Cornell University Press.
- Harriden, K. 2013. Water diaries: Generate intra-household water use data – generate water use behaviour change. *Journal of Water, Sanitation and Hygiene for Development* 3(1), 70-80.
- Hochfeld, T. and S. R. Bassadien. 2007. Participation, values, and implementation: Three research challenges in developing gender-sensitive indicators. *Gender and Development* 15(2), 217-30.
- Hoekstra, A.Y. and A.K. Chapagain. 2006. Water footprints of nations: Water use by people as a function of their consumption pattern. *Water Resource Manager* 21(1), 35-48.

- Ilahi, N. 2000. The intra-household allocation of time and tasks: What have we learnt from the empirical literature? *Policy Research Report on Gender and Development, Working Paper Series no. 13*. Washington DC: Development Research Group, Poverty Reduction and Economic Management Network, The World Bank.
- Jackson, C. 2006. Feminism spoken here: Epistemologies for interdisciplinary development research. *Development and Change* 37(3), 525-47.
- Jayarathne, T.E. and A.J. Stewart. 1991. Quantitative and qualitative methods in the social sciences: Current feminist issues and practical strategies. In, M.M. Fonow and J.A. Cook (eds.), *Beyond Methodology: Feminist Scholarship as Lived Research*. Bloomington, IN: Indiana University Press, pp. 81-99.
- Kabeer, N. 1997. Women, wages and intra-household power relations in urban Bangladesh. *Development and Change* 28, 261-302.
- Kim, J. and L. Zepeda. 2004. When the work is never done: Time allocation in US family farm households. *Feminist Economics* 10(1), 115-39.
- Kloosterman, J., E. Benning and R. Fyles, 2012. Measuring the unmeasurable: Gender mainstreaming and cultural change. *Gender and Development*, 20(3), 531-45.
- Lahiri-Dutt, K. 2006. Introduction: Reflected on water. In, K. Lahiri-Dutt (ed.), *Fluid Bonds: Views on Gender and Water*. Calcutta: Stree, pp. 1-25.
- Lahiri-Dutt, K. and Harriden, K. 2008. Act on gender: A peep into intra-household water use in the Australian Capital Territory (ACT) Region. *Rural Society* 18(3), 230-43.
- Lahiri-Dutt, K. and G. Samanta. 2013. How do the poor handle money? What do the financial diaries of char dwellers tell us about financial inclusion? *Space and Culture, India* 1(1), 1-15.
- Llewelyn, S. 2007. A neutral feminist observer? Observation-based research and the politics of feminist knowledge making. *Gender and Development* 15(2), 299-310.
- Przybylo, E. 2013. Producing facts: Empirical asexuality and the scientific study of sex. *Feminism and Psychology* 23(2), 224-42.
- Quisumbing, A. 2003. What have we learned from research on household allocation? In, A. Quisumbing (ed.), *Household Decisions, Gender, and Development: A Synthesis of Recent Research*. Washington, D.C.: International Food Policy Research Institute, pp. 1-18.
- Raju, S., P. J. Atkins, N. Kumar and J. Townsend. 1999. *The Atlas of Women and Men in India*. New Delhi: Kali for Women.

- Rocheleau, D. 1995. Maps, numbers, text, and context: Mixing methods in feminist political ecology. *Professional Geographer* 47(4), 458-66.
- Samaddar, R. 2012. What is postcolonial predicament? *Economic and Political Weekly* 47(9), 41-6.
- Sandler, J. and A. Rao. 2012. The elephant in the room and the dragons at the gate: Strategising for gender equality in the 21st century. *Gender & Development* 20(3), 547-62,
- Sangameswaran, P. 2012. The right to water in different discourses. In, M. Zwarteveen, S. Ahmed and S. R. Gautam (eds.), *Diverting the Flow: Gender Equity and Water in South Asia*. New Delhi: Zubaan, pp. 111-36.
- Sayer, L. C. 2005. Gender, time and inequality: Trends in women's and men's paid work, unpaid work and free time. *Social Forces* 84(1), 285-303.
- Seager, J. 2010. Gender and water: Good rhetoric but it doesn't "count". *Geoforum* 41(1), 1-3.
- Seager, J. 2009. *The Atlas of Women in the World, 4th Edition*. London: Earthscan.
- Sil, P. and K. Lahiri-Dutt. Forthcoming. Women's 'double day' in middle-class homes in urban India. *Contemporary South Asia*.
- Smart, C. 2009. Shifting horizons: Reflections on qualitative methods. *Feminist Theory* 10(3), 295-308.
- Society for Promoting Participative Eco-system Management (SOPPECOM). 2011. *Social and Gender Equity Gauge: Piloting the Tool for Assessing Inequities in the Water Sector India and Nepal*. Pune: SOPPECOM, available from <http://www.soppecom.org/publications.htm> (accessed on 5th August, 2013).
- Sofoulis, Z, C. Williams, M. Cambell, P. Rossiter and J. Humphry. 2006. *Demand Management through Cultural Innovation: User Models*. Sydney: Centre for Cultural Research, University of Western Sydney.
- Strathern, M. 2004. *Commons and Borderlands: Working Paper on Interdisciplinarity, Accountability and the Flow of Knowledge*. Oxford: Sean Kingston Publishing.
- Sultana, F. 2011. Spaces of power, places of hardship: Rethinking spaces and places through a gendered geography of water. In, S. Raju (ed.), *Gendered Geographies: Interrogating Space and Place in South Asia*. Oxford University Press: Delhi, pp. 293-306.
- Troy, P. (ed.). 2008. *Troubled Waters: Confronting the Water Crisis in Australia's Cities*. Canberra: ANU E Press.
- United Nations (UN). 2008. *Expert Group Meeting Report: Gender-Disaggregated Data on Water and Sanitation*. New York: United Nations.

- United Nations Educational, Scientific and Cultural Organization (UNESCO). 2014. *UN WWAP UNESCO Project for Gender Sensitive Water Monitoring Assessment and Reporting*. Available from <http://www.unesco.org/new/en/natural-sciences/environment/water/wwap/water-and-gender/> (viewed on 24th August, 2014).
- UNW-DPC. 2009. *Gender-disaggregated Data on Water and Sanitation Knowledge*, No 1, UNW-DPC Series. Bonn, Germany: United Nations University, UN-Water Decade Programme on Capacity Development, Available from <http://www.unwater.unu.edu/file/get/51> (accessed on 24th March 2013).
- Warren, H. 2007. Using gender analysis frameworks: Theoretical and practical reflections. *Gender and Development* 15(2), 187–98.
- White, S. C. 2006. The “gender lens”: A racial blinder? *Progress in Development Studies* 6(1), 55–67.
- World Bank. 2014. *Project Appraisal Document on a proposed credit in the amount of SDR 133.2 Million (US\$205 million equivalent) to the Federal Democratic Republic of Ethiopia for a ‘Water Supply, Sanitation and Hygiene Project’ (PAD 639)*. Washington D.C.: World Bank and International Development Association.
- World Water Forum. n.d., *Duniya su Forumu Final Report*. Available at http://www.worldwatercouncil.org/fileadmin/world_water_council/document/s/world_water_forum_5/WWF5_Final_Report_ENG.pdf (viewed on 17th August 2014).
- Zwarteveen, M. 2006. *Wedlock or Deadlock? Feminists Attempts to Engage Irrigation Engineers*. Wageningen: Wageningen University Press. Full last name 1st author, Full first name 1st author, Full first name 2nd author Full last name 2nd author, and Full First name 3rd author Full last name 3rd author. YEAR. Title of the article. *Journal/Book Title* Volume(Issue), pg-pg.
- Doe, Ramona, Esther Doe, and Anna Maria Doe. 1994. The First Declaration of the Lacandon Jungle. *The Journal of Collective Rebellion* (11)17, 19-83.