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DISCUSSION PAPER

TOWARDS GENDER EQUALITY THROUGH SANITATION ACCESS



No. 12, March 2016

ZACHARY BURT, KARA NELSON AND ISHA RAY

The UN Women discussion paper series is a new initiative led by the Research and Data section. The series features research commissioned as background papers for publications by leading researchers from different national and regional contexts. Each paper benefits from an anonymous external peer review process before being published in this series.

This paper was produced by Zachary Burt, Post-doctoral Scholar, Blum Center for Developing Economies, University of California Berkeley; Kara Nelson, Professor of Civil and Environmental Engineering, University of California Berkeley and Isha Ray (corresponding author), Associate Professor, Energy and Resources Group and Co-Director, Berkeley Water Center, University of California Berkeley, to provide policy guidance on key emerging areas in the gender and sanitation nexus. This paper was featured at an event on Emerging Issues in Gender and WASH held during the 60th Session of the Commission on the Status of Women.

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SUMMARY

This discussion paper reviews the extensive literature on sanitation to show that inadequate access to this basic service prevents the realization of a range of human rights and of gender equality. We recognize that “dignity” is a highly culture- and gender-specific term; we therefore argue that sanitation for all—sanitation that serves all genders equally—must be designed and planned explicitly for the unique needs of women and girls. We cover sanitation design, planning and financing for hygienic defecation, and for relieving oneself during the day at work or school. These needs are sometimes euphemistically referred to as nature’s “long call” (defecation) and “short call” (urination); the absence of safe facilities for these needs disproportionately affects

women and girls. In addition, women and adolescent girls menstruate, and they need safe sanitation services to manage, hygienically and with dignity, this “monthly call”. We review the findings of the small but rapidly growing literature on menstrual hygiene management, with emphasis on menstruation management and a girl’s right to education. Finally, we review the work and life conditions of those working the “back-end” of the sanitation system, such as manual scavengers and sanitation workers. Our paper concludes that safe sanitation is a gateway service for dignity, health and gender equality. In particular, sanitation in public or shared spaces must become a priority-planning sector for sustainable development.

RÉSUMÉ

En este documento de debate se analiza la extensa bibliografía disponible sobre saneamiento, con el fin de demostrar que un acceso inadecuado a este servicio básico impide la realización de diversos derechos humanos y el logro de la igualdad de género. El autor y las autoras reconocen que la definición del término “dignidad” depende en gran medida de la cultura y presenta una fuerte dimensión de género. En consecuencia, argumentan que el saneamiento para todas las personas —es decir, que sirva por igual a ambos géneros— debe diseñarse y planificarse explícitamente de manera que responda a las necesidades específicas de las mujeres y las niñas. En el artículo se aborda el diseño, la planificación y la financiación del saneamiento para favorecer una defecación higiénica y para que las personas puedan aliviar sus necesidades en el trabajo o en la escuela. En ocasiones estas necesidades se denominan de forma eufemística “aguas mayores” (defecación) y “aguas menores” (micción); la ausencia de instalaciones seguras para satisfacer

estas necesidades afecta de manera desproporcionada a las mujeres y las niñas. Además, a partir de la adolescencia, las mujeres menstrúan y necesitan servicios de saneamiento seguros para gestionar esta situación mensual de un modo higiénico y con dignidad. El autor y las autoras examinan las conclusiones de la literatura —aún breve pero en rápido crecimiento— sobre la gestión de la higiene menstrual, haciendo hincapié en la gestión de la menstruación y en el derecho de las niñas a la educación. Por último, también se estudian las condiciones laborales y de vida de las personas que trabajan en el último extremo del sistema de saneamiento, como las y los vaciadores de letrinas y operarios de saneamiento. El artículo concluye señalando que el saneamiento seguro es un servicio imprescindible para la dignidad, la salud y la igualdad de género. En particular, el saneamiento en los espacios públicos o compartidos debe convertirse en un sector prioritario de la planificación para el desarrollo sostenible.

RESUMEN

Ce document de travail examine la volumineuse documentation relative aux services sanitaires afin de montrer qu'un accès inadéquat à ce service essentiel entrave la réalisation effective des droits de l'homme et de l'égalité des sexes. Si l'on admet que le terme « dignité » a des connotations culturelles et sexospécifiques importantes, il importe de concevoir et de planifier des services sanitaires qui répondent spécifiquement aux besoins particuliers des femmes et des filles – des services adaptés aux deux sexes. Nous examinons la conception, la planification et le financement des équipements sanitaires qui permettent de déféquer de manière hygiénique et de se soulager durant la journée de travail ou scolaire. Ces besoins sont parfois pudiquement qualifiés d'« appel long » (défécation) et d'« appel court » (miction). L'absence d'installations sûres permettant de répondre à ces besoins affecte de manière disproportionnée les femmes et les filles. Les femmes et les adolescentes

ayant des menstruations, il leur est indispensable de disposer d'installations sanitaires sûres pour gérer, hygiéniquement et dans la dignité, cet « événement mensuel ». Nous examinons les conclusions figurant dans la documentation – qui, bien que limitée, s'étoffe rapidement – relative à la gestion de l'hygiène menstruelle, en mettant l'accent sur la période menstruelle et le droit des filles à recevoir une éducation à ce propos. Nous examinons enfin les conditions de travail et de vie de celles qui travaillent « dans les coulisses » du système sanitaire, en vue notamment d'assurer l'évacuation manuelle des excréments ou d'entretenir les installations sanitaires. Notre document conclut que des installations sanitaires sûres sont indispensables à la dignité humaine, la santé et l'égalité des sexes. La construction de services sanitaires dans les lieux publics et communs doit être planifiée de manière prioritaire dans le cadre du développement durable.

1.

INTRODUCTION: SANITATION AND GENDER EQUALITY

Safe sanitation is a human need and access to safe sanitation is a human right. In 2010, and again in 2015, the General Assembly of the United Nations formally gave voice to this right. The 2010 resolution recognized the universal right to clean water and safe sanitation by a vote of 122 in favor and none against.¹ The arguments behind the 2010 resolution were fully explained in Fact Sheet 35 on the *Right to Water*, jointly prepared by the Office of the High Commissioner for Human Rights, UN Habitat and the World Health Organization (WHO), with its eloquent opening: “Water is the essence of life. Safe drinking water and sanitation are indispensable to sustain life and health, and fundamental to the dignity of all.”² This discussion paper frames sanitation access as first and foremost an issue of equality and dignity for all and focuses specifically on gender equality.

Following the rich tradition of feminist writing that separates sex from gender, we define “sex” as a biological category (male, female or intersex) and “gender” as primarily a social and relational category.³ In this paper, we argue that sanitation needs are gendered because the differences stem both from biological bodies as well as the norms, expectations and taboos surrounding them.⁴ Gender equality in sanitation cannot be achieved by facilities and sanitation programmes alone: changing social norms and expectations are at least as important. Our paper focuses on safe and accessible sanitation facilities, recognizing that dignified and safe sanitation is a human right for all genders, whatever the prevailing norms may be.

We review the extensive literature on sanitation to show that inadequate access to this service prevents

the realization of a range of human rights and of gender equality. We review sanitation needs and access for urination, defecation and menstruation. Space constraints prevented us from including bathing and washing, though these are also important for health and dignity. We cover sanitation design, planning and financing for hygienic and private defecation (i.e., using a pit or bowl, as opposed to defecating directly on open land or into water bodies), and for relieving oneself during the day at work or school. These needs are euphemistically referred to as nature’s “long call” (for defecation) and “short call” (for urination) in some communities.⁵ The absence of safe and affordable facilities for these needs disproportionately affects women and girls, and these effects vary for privately owned versus publicly managed latrines. In addition, most women and adolescent girls men-

1 United Nations 2010b.

2 United Nations 2010a. A 2015 resolution UN General Assembly 2015 went even further, stating that everyone is entitled “to have physical and affordable access to sanitation, in all spheres of life, that is safe, hygienic, secure, and socially and culturally acceptable and that provides

privacy and ensures dignity”, Amnesty International, Human Rights Watch, and WASH United 2015.

3 Scott 1986.

4 Tilley et al. 2013; Ray 2015.

5 Caruso et al. 2014; authors’ personal experience.

struate, and they need safe sanitation services to manage, hygienically and with dignity, this “monthly call”. The small but rapidly growing literature on menstrual hygiene management (MHM) suggests that the inconvenience and embarrassment of menstruation often interferes with a girl’s right to education.

The situation is dire in less-developed country schools, but MHM difficulties are not restricted to these. Finally, because dignity in sanitation is necessary all along the sanitation chain, we review the work and life conditions, and the gendered implications of these, for the women who clean dry latrines, and for sanitation workers in low-infrastructure settings.

Our paper concludes that safe sanitation is a gateway service for human dignity, human health, and gender equality. Health and dignity outcomes are ultimately intertwined, and indicators should be used to measure and assess both under a human rights framework.⁶ In particular, sanitation in publicly shared spaces—in slums and schools and streets—must be pulled out of its current neglect in public policy circles to become a cornerstone of sustainable development planning.

6 de Albuquerque 2012b.

2.

SANITATION ACCESS AT THE START OF THE SUSTAINABLE DEVELOPMENT GOALS ERA

The main source of global data on access to water and sanitation facilities is the Joint Monitoring Programme (JMP) of the United Nation’s Children’s Fund (UNICEF) and WHO. “Improved” sanitation facilities, according to WHO and UNICEF, include pour flush or flush toilets into a sewer, ventilated improved pits, and composting toilets, through the use of which pathogenic waste is likely to be removed from human contact.⁷ At the other end of the sanitation ladder is open defecation (OD), which means defecating into the environment without a facility. OD pollutes land and water resources, and brings humans, especially children, into contact with pathogenic waste lying around in fields or on railway tracks. Between improved toilets and no toilets lie unimproved toilets (e.g., un-sewered toilets that discharge waste directly into the environment) and multi-household shared toilets (public or private). Until recently, all shared toilets were considered “unimproved” because of their general state of dysfunction and disrepair. However, the Sustainable Development Goals (SDGs) discussions recognize that some shared facilities may be acceptable *en route* to private sanitation for all, and the reality is that shared latrine use is rising rapidly in urban South Asia and sub-Saharan Africa.⁸

Data from the JMP show that global access to improved sanitation has increased between 1990—10 years before the Millennium Development Goals (MDGs) were announced—and 2015, the official end of the MDG era. The use of improved sanitation has increased almost everywhere (Fig 2-1).⁹ Almost 2.5 billion people still have no access to improved

sanitation, but the JMP estimates that just over 600 million of these have access to shared sanitation. Sanitation access in low-income countries remains highly unequal. Urban coverage rates are significantly higher than rural coverage rates¹⁰, and within rural regions, access is lowest for communities far away from main roads.¹¹

OD is often a human and environmental health hazard because it pollutes land and water, and brings people and animals into contact with fecal

7 JMP 2016.

8 The JMP is also developing new indicators that will break-down the improved category into ‘basic’, ‘safely managed’ and ‘sustainable’ sanitation systems, in order to incorporate environmental health impacts of wastewater and fecal sludge management into the sanitation ladder. JMP 2015b; Hossain 2015; Heijnen et al. 2014.

9 JMP 2015.

10 JMP 2013; JMP 2015.

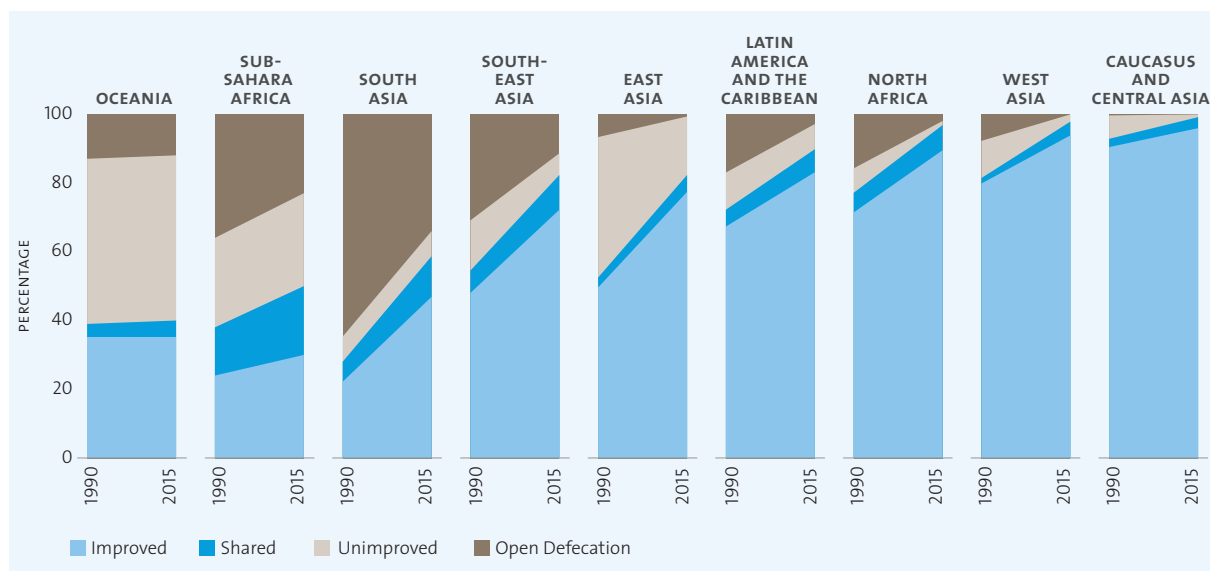
11 JMP 2014.

matter.¹² Right through the MDG era, reducing OD was almost the sole focus of national and international sanitation efforts, especially in rural areas. Latrine construction and supply, sanitation uptake programmes, and demand-driven models of sanitation dissemination are undergoing vigorous research and experimentation by health researchers¹³, local communities with varying degrees of government participation (e.g., community led total sanitation or CLTS), international non-profits (e.g., WaterAid), and international donors (e.g., The Bill and Melinda Gates Foundation).¹⁴ OD rates have declined significantly (Fig 2-2)¹⁵; just less than 1 billion people now practice OD, and two-thirds of these live in South Asia. OD is especially entrenched in rural India¹⁶, whose national government has made its elimination a public health and policy priority with its re-invigorated Clean India

Mission (*Swachh Bharat Mission Gramin* or SB). (We will explore SB further in Section 3.)

Though safe and affordable sanitation is about more than the elimination of OD and the safe transport and/or disposal of the waste, these two priorities dominate the sector. The majority of the Gates Foundation's sanitation dollars goes towards developing innovative low-cost hardware, waste treatment and demand-generation for (mainly) private latrines.¹⁷ Almost 90 per cent of SB's Annual Plan outlays, estimated at \$600 million in 2015, go to toilet construction, mainly for rural households.¹⁸ Demand-generation messages in India are focused on the health benefits of eliminating OD and on the safety and modesty of young women who need private latrines at home.¹⁹

FIGURE 2-1:
Trends in Sanitation Coverage (%) by Region²⁰



12 UNDP 2006; Fawcett and Black 2008.

13 Jenkins and Curtis 2005; Hutton et al. 2007; Clasen 2010.

14 Bill & Melinda Gates Foundation 2016; WaterAid 2016.

15 JMP 2015.

16 Patil et al. 2013; Routray et al. 2015; O'Reilly et al. 2015.

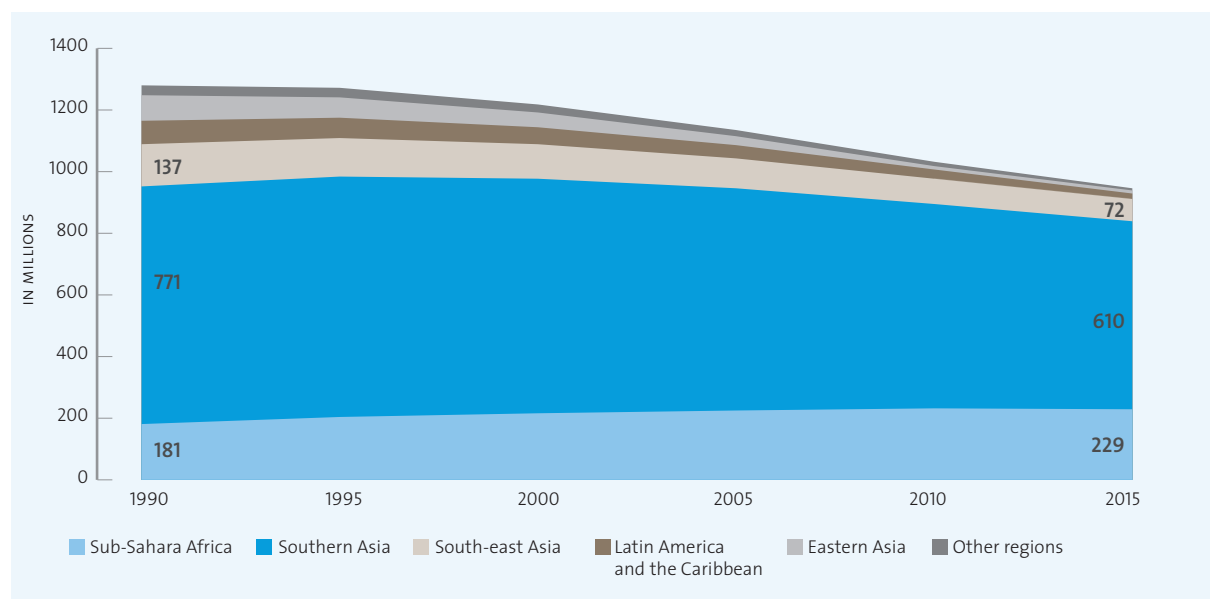
17 Bill & Melinda Gates Foundation 2012.

18 Kapur and Iyer 2015; Hulland et al. 2015.

19 Routray et al. 2015.

20 JMP 2015a.

FIGURE 2-2:
Regional trends in the number of people practicing open defecation (in millions)²¹



The emphasis on eliminating OD is absolutely critical. Clean and secure access to latrines can enable girls' education, women's mobility and sexual security.²² But gender equality means that toilet programmes cannot stop at defecation and disease; they have to take equally seriously the requirements of hygiene and dignity for daytime urination.²³ Women need more privacy than men when they use the facilities because social norms everywhere demand that they not be seen when relieving themselves. They need to urinate more frequently when they are pregnant. They may need more time in the toilet than men do because they must always sit or squat. They need physical safety when they access outside or public toilets. All women must access such toilets when they are out at school or work, but for some women, public toilets are the primary mode of access. They

need multiple daily visits and privacy for changing during their menstrual period. Menstrual hygiene is so "taboo" that it has routinely fallen through the cracks of national and international sanitation promotions²⁴ and is only now being acknowledged as a critical sanitation gap.²⁵ Many qualitative studies from Asia and Africa have shown that poor sanitation at school keeps girls from school, or interferes with their ability to learn, when they are menstruating.²⁶ In short, men and women, and girls and boys, have very different sanitation needs, for biological and social reasons. Investments in this area have to be designed and implemented with these bodily needs and the social norms that surround them, even while the norms themselves are being challenged, and this means that sanitation programmes have to go well beyond OD prevention via household latrines.

21 Ibid.

22 UN Women 2015.

23 Hartmann et al. 2015.

24 Bharadwai and Patkar 2004.

25 WSSCC 2015.

26 Sommer 2010; McMahon et al. 2011; Long et al. 2015.

3.

PRIVATE SANITATION

The direct health impacts of OD on waterborne illness have been well documented,²⁷ and their biological mechanisms are not sex-specific. Yet in practice, OD is often highly gendered in its impacts due to social expectations regarding modesty, the gendered nature of personal security and the common expectation that women be the primary caretakers of the young, the elderly and the infirm. The first two represent limitations on women regarding how, when and where they may meet their sanitary needs; the third is an indirect burden of illness that disproportionately impacts women. Increasing access to private (household) latrines may address all three impacts but only if the overall sanitary system incorporates women's needs and dignity in its design and implementation.

Expectations on women to cover their bodies in conformity with modesty norms require that women not expose themselves in exactly the way that biology dictates during defecation or urination. Therefore where women do not have access to a latrine, and OD is practiced instead, they wait until darkness can be used for the concealment usually performed by clothing.²⁷ Therefore women may abstain from food and drink during the day, so as to more easily withhold their sanitary needs until night or early morning.²⁸ Although evidence is anecdotal, there are reports of this insufficient hydration and withholding of urination leading to greater risk of urinary tract infections.²⁹ Women are also forced to meet their sanitation needs during times and in places where they do not have the security of well-lit, well-traveled public areas.³⁰ This double "requirement" of being concealed and outside the home places women in vulnerable situations, away from the assistance of others, or the security of witnesses.³¹

The direct disease burden due to OD is enormous. Globally, 4.2 per cent of all deaths, the majority of

them of children under the age of five, are due to preventable waterborne illnesses.³² OD has been linked to increases in stunting in India.³³ As mentioned above, OD elimination and disease reduction are the main drivers of private latrine promotion efforts. Yet descriptions of this burden merely in terms of morbidity and mortality understate its impacts. Only when proximity to a health clinic, household income and travel time allow, do victims of waterborne illness receive professional care. Otherwise, the vast majority of caretaking is supplied through the unpaid labor of women in the household.

Increasing the access to private household latrines can address these specifically gendered impacts, but it may not always do so. In northern India, for example, it has been well documented that the mere presence of a bowl attached to a containment unit is not a good proxy for use, as OD practices continue even where household latrines exist.³⁴ In addition to the difficulty of changing entrenched habits³⁵, low uptake of even in-home latrines may be related to sanitation (in) dignity: inconvenient access, lack of privacy, poor levels of cleanliness, difficulty of maintenance, and poor ventilation and maintenance.³⁶

27 Fewtrell et al. 2005; Waddington and Snilstveit 2009; Wolf et al. 2014.

28 Das et al. 2015; Panda and Agarwala 2012; van Koppen et al. 2010; Hartmann et al. 2015; Khanna and Das 2015.

29 Das et al. 2015; Panda and Agarwala 2012; van Koppen et al. 2010; Hartmann et al. 2015.

30 Das et al. 2015; Hartmann et al. 2015.

31 Corburn and Hildebrand 2015; Routray et al. 2015.

32 Bartram and Cairncross 2010.

33 Spears et al. 2013.

34 Patil et al. 2013; Barnard et al. 2013.

35 Jenkins and Curtis 2005; Routray et al. 2015; Coffey et al. 2014.

36 Diallo et al. 2007; Barnard et al. 2013; Coffey et al. 2014.

Considerations of cleanliness, privacy and safety are often incorporated into outreach and promotion activities for sanitation interventions. Such attributes are known to be important to men as well as women, yet they have only begun to be included as indicators of sanitation access. Furthermore, sanitation interventions rarely include women's voices or women's labor considerations when designing latrines or their maintenance systems, in particular the cost, labor

input and frequency of pit emptying. Incorporating the unique needs of women and girls into sanitary systems will require more than engaging women's groups for health promotion activities during the implementation stage. Women's voices are just as important during the setting and tracking of indicators of access and during the design of infrastructure, the planning of projects, and the creation of government policy and financial plans.

3.1.

Private latrine “access”

In 2000 the JMP put out its first assessment report in which global sanitation access was assessed, but it wasn't until the 2002 report that access was tracked using three categories: no access, unimproved access, and improved access.³⁷ The JMP later expanded its categories to include 'shared' sanitation as part of a 'sanitation ladder': 'shared' sanitation was placed as a

step between improved and unimproved sanitation.³⁸ Thus far, efforts to track progress on access to sanitation have focused on the presence (or absence) of a home (or shared) latrine. From 2008 on, the water collection burden was broken down by gender, but gender disaggregated sanitation data has never been reported in a standardized fashion.

BOX 3-1

Community led total sanitation and women's participation

A vital part of the CLTS process is activating women as local “natural leaders” and empowering them to make changes to the sanitary situation in their own communities.³⁹ Some have speculated that this can lead to further empowerment of women, beyond the realm of sanitation.⁴⁰ However, there is concern that participation may be mistaken for empowerment in some cases, and that CLTS may, at times, continue to prioritize the needs of men, while also increasing women's workloads.⁴¹

Sweeping observations across the entire region state that women in Sub-Saharan Africa actively participate on local sanitary committees set up by CLTS programmes and that they help enforce

their community's OD-free status.⁴² However, when Adeyeye conducted in-depth interviews and observational studies in Ekiti, Nigeria, she found that “equal representation does not always translate to equal decision-making power” and that although women were on these committees, their concerns were often overlooked.⁴³

Women's voices must be heard at all scales of sanitation policy: a new report summarizing 55 rounds of consultation with women in South Asia drew remarks such as “Include us, listen to us, when designing WASH facilities...”.⁴⁴ More research is needed on women's voices in sanitation interventions, from design to disposal, including in CLTS.

37 JMP 2004.

38 JMP 2008.

39 Kar and Chambers 2008.

40 Bongartz et al. 2010.

41 Mehta and Movik 2010.

42 Bongartz et al. 2010; Kar and Milward 2011.

43 Adeyeye 2011.

44 FANSA and WSSCC 2015.

Heijnen et al., in a study of health outcomes for slum households in urban Odisha, India, concluded that more than just health should be the motivation for private (individual or shared) sanitation uptake policy, and that access indicators should move beyond the presence or absence of specific sanitation technologies.⁴⁵ Rather, they posit that “safe, acceptable and sustainable” should be the criteria used in future tracking efforts. Kvarnstrom et al. incorporate the meeting of “user needs” as one of the criteria used to judge *de facto* access, and women’s needs are listed (but not elaborated) as an explicit consideration.⁴⁶ The International Water and Sanitation Centre (IRC) WASHCost (IRC WASHCost) framework of sanitation access suggests four key indicators: accessibility, use, reliability and environmental protection.⁴⁷ Yet the four indicators are not defined in the context of gender differences; latrines are often not equally accessible and equally likely to be used by men and by women.⁴⁸ Dreibelbis et al. developed a multi-dimensional tool for assessing the likelihood of sanitation use and uptake (construction of a new household latrine). This paper highlights the importance of non-health values and subjective perceptions in determining usage and uptake, but the authors were not able to disaggregate based on gender.⁴⁹ Luh et al. proposed an index to measure the progressive realization of the human right to water and sanitation. They explicitly tried to incorporate gender disparities in water and sanitation access but could not do so because they lacked gender-disaggregated data.⁵⁰ Indicators that track

equality of access across gender are essential, but, as can be seen in these examples, they are hobbled by a lack of data.

The SDGs have now been announced, although the specific indicators are still being finalized.⁵¹ The SDGs specifically call for equality of access across multiple characteristics, including gender.⁵² Target 6.2 states “By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.” However, the indicators currently proposed for SDG 6, while acknowledging the desirability as well as the complexity of intra-household disaggregation⁵³, do not disaggregate access by gender.⁵⁴ The JMP has created indicators to track access by gender, including access to MHM facilities, but these cover only schools and health clinics.⁵⁵ Furthermore, the proposed indicators do not appear to include attributes that emphasize dignity in use and that often influence usage, such as safety, privacy and cleanliness.⁵⁶ As we have argued, based on the current evidence, women and girls have a particular need for these attributes. At present, only 38.9 per cent of countries regularly produce gender-disaggregated data on access to sanitation.⁵⁷ We strongly agree with researchers calling for disaggregation of access data by gender⁵⁸, and for indicators for the specific needs of women and girls that recognize the centrality of dignity in sustainable sanitation systems.

45 Heijnen et al. 2014.

46 Kvarnström et al. 2011.

47 Burr and Fonseca 2011.

48 Barnard et al. 2013.

49 Dreibelbis et al. 2015.

50 Luh, Baum, and Bartram 2013.

51 <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

52 United Nations 2016.

53 Satterthwaite and Winkler 2012.

54 Loewe and Rippin 2016; United Nations 2016.

55 JMP 2015b.

56 Loewe and Rippin 2016; United Nations 2016; JMP 2015b.

57 United Nations 2012.

58 Ray 2007; UN Women 2014.

3.2.

The design of infrastructure and the planning of projects

To achieve gender equality in access to sanitation, the design of sanitation systems must be woman- and girl-friendly, i.e., it should explicitly incorporate the biological and social needs of women. Considerations of privacy, safety and convenience are often cited as motivations to construct a private household latrine; these are cited specifically in reference to their impacts on women.⁵⁹ Access to a reliable water supply should also be incorporated into the design of the latrine. Periodic emptying is also an essential (though often overlooked) part of sanitation design; the waste has to be carried away by water, or the pit has to be emptied, or container-based sanitation has to include the regular removal of the containers of waste. Although many low-cost sanitation systems recognize that the removal and treatment of waste must be addressed, almost no provision is made for the disposal of menstrual hygiene products.⁶⁰

In addition to the latrine itself, the design of projects aimed at promoting uptake and usage of household latrines should also be motivated by dignity and equity considerations. Such projects, in general, come in three styles: a focus on financial subsidy, a focus on peer-pressure and education, or a combination of the two. Programmes that have successfully harnessed outreach and education emphasize “behavior change” through the reflection of local preferences, beliefs and cultural values, mixed with activities that inspire aspiration, values, shame and disgust, in order to activate peer pressure among neighbors.⁶¹ CLTS is one of the most successful recent international efforts to reduce OD in rural areas; it emphasizes behavior change in order to combat OD.

CLTS was first developed in Bangladesh in 2000, in collaboration with international and local

non-governmental organizations (NGOs).⁶² The CLTS approach concentrates on collective activities, such as latrine construction, education and motivation, as well as feelings of disgust and shame around OD. Peer-pressure and peer encouragement are thought to be more critical than subsidies⁶³; government subsidy programmes are considered “unfriendly” to the CLTS approach.⁶⁴ CLTS is primarily a rural programme, and it has been scaled up with significant international support in Bangladesh, India, and Pakistan, as well as South-East Asia and Africa.⁶⁵ Evaluations of no-subsidy CLTS are few, but it has been associated with higher access to private latrines and improved child growth in Mali.⁶⁶

India, the country with by far the largest number of people practicing OD, formally adopted a with-subsidy version of the CLTS approach as the government’s Total Sanitation Campaign in 1999. In 2012, the programme was restructured; in 2014, it was redesigned again and rechristened *Swachh Bharat Mission Gramin* (SB).⁶⁷ Although SB includes elements of CLTS, in 2014-2015, 92 per cent of funding was spent on infrastructure construction costs; 86 per cent of this subsidized (mainly) rural household pour-flush or pit latrines, while only 5 per cent was spent on “information, education and communication” activities.⁶⁸ Creating easy access to water is not part of the toilet designs used in SB (or CLTS), though water is critical for regular latrine maintenance as well as cleansing during defecation and menstruation.⁶⁹ Evaluations of the Total Sanitation Campaign have found that it increased toilet coverage and toilet usage by only modest amounts in rural India.⁷⁰

59 Jenkins and Curtis 2005; Barnard et al. 2013; Boisson et al. 2014.

60 Nelson and Murray 2008; Caruso et al. 2014; Sommer et al. 2015.

61 Jenkins and Curtis 2005; Pattanayak et al. 2009; Jenkins and Scott 2007.

62 Kar and Chambers 2008.

63 Evans et al. 2009; Pattanayak et al. 2009.

64 UNICEF 2013.

65 Kar and Chambers 2008; Rukuni 2010; Musyoki 2010.

66 Pickering et al. 2015.

67 Kapur and Iyer 2015.

68 Ibid.

69 Patil et al. 2013; Kapur and Iyer 2015.

70 Patil et al. 2013; Barnard et al. 2013.

SB and CLTS usually consider women's privacy and security needs as two of many motivations for encouraging latrine construction and use⁷¹; preserving the modesty of young brides has been observed as a motivation in particular.⁷² Private latrines may remove one of the acceptable reasons for a young married woman to leave the house⁷³, but this larger concern is not a part of SB, CLTS or other sanitation promotion programmes. Explicitly engaging women and strengthening their voice in CLTS is a core part of some manuals⁷⁴ but not others.⁷⁵ Most CLTS programme manuals do not include MHM needs, safe disposal methods for fecal sludge, or gender disaggregated indicators for access and use.⁷⁶ One notable exception is a new guide that attempts to integrate MHM into CLTS, published in July of 2015.⁷⁷

In urban areas, the infrastructure design is more likely to include sewerage. Higher densities put a premium on the space needed for pits and septic tanks, while decreasing average costs per household make sewerage more feasible. Yet several challenges prevent many

households from connecting to sewer networks. In slum areas, the greatest challenge is a lack of land tenure. In such cases, connections may not be allowed under municipal regulations, or the lack of land security discourages household capital investments. For slum residents with land tenure, the cost of connection to the sewer system may not be affordable, or they may be located too far from a mainline.⁷⁸ Septic tanks and pits are still common in urban areas, as the sanitary system in cities is often a complex mix of different combinations of technologies for access, containment, emptying, transport, treatment and disposal or re-use.⁷⁹ If slum residents have space but no mainline in the vicinity, they may install private latrines with septic tanks. These normally provide privacy and security. But the maintenance often falls to women in the household, and pit-emptying services are not always available. In areas with a high density of septic tanks or a high groundwater table, local groundwater can become contaminated, which poses a health risk, and which may make water collection more difficult—again disproportionately burdening women.⁸⁰

71 Kar and Chambers 2008.

72 Routray et al. 2015.

73 Coffey et al. 2014.

74 Kar and Chambers 2008.

75 UNICEF 2013.

76 Kar and Chambers 2008; UNICEF 2013.

77 Roose et al. 2015.

78 Water Utility Partnership 2003.

79 Peal et al. 2014.

80 Yates 1985; Peal et al. 2014.

3.3.

The design of government policy and financial plans

The scale up of sanitation systems to low-income and marginalized areas will require some financial participation on the part of the government, whether this is full responsibility for costs or, less onerously, partial or cross subsidies. Rural sanitation systems are mostly household-funded, although some states may subsidize substantially. In India, some households receive almost half of the initial construction costs. Subsidy programmes are mostly aimed at construction costs, not ongoing maintenance. There is little data on the frequency and cost of pit emptying, even though this is a key determinant of the reliability and lifetime of a latrine.⁸¹ Overall, if long-term maintenance costs are added, the cost of “low-cost” sanitation can be 5 to 20 times the cost of building the latrine alone.⁸² In addition, the unpaid labor of women (and men) during maintenance of the sanitation system, either of the latrine or the fecal sludge containment unit, as well as during caretaking of sick family members, should be included in cost estimates, although this is rarely done, if ever.

Many experts see a need for an increased financial role and greater active participation from governments in

urban areas. Full coverage of sanitation in urban areas will be hard to achieve without cross-subsidization and economies of scale.⁸³ Solutions with an exclusive focus on services provided by the private sector, which service mainly private home latrines with septic tanks or pits, severely limits the ways in which incorporated municipal utilities can facilitate cross subsidization.⁸⁴ Joshi et al. make the case that current government or NGO policies can actually prevent access. They state that calls for the urban poor to pay for private sanitation through their own means is divorced from the reality on the ground; what little access they now have is largely provided through their own means already, and the major road blocks to increasing access have to do with structural inequalities such as lack of land tenure.⁸⁵ Baruah et al. discuss the experience of an urban NGO in Ahmedabad (the Self-Employed Women’s Association), as it partners with the private sector and with government, in slum improvement projects. (These projects focus on many amenities, but mostly provide water and sanitation access.) They reinforce the critique of Joshi et al. and observe that forced relocation, lack of land tenure, and lack of access to water and sanitation particularly burdens women.⁸⁶

81 Burr and Fonseca 2011.

82 Moriarty et al. 2011.

83 Shah et al. 2013; Graf et al. 2014.

84 Shah et al. 2013.

85 Joshi et al. 2011.

86 Baruah 2007.

4.

PUBLIC SANITATION

Public latrines are an important part of sanitary systems, especially in urban areas. For those who have private household latrines, public facilities provide services outside of the home. For those who live in households without latrines and for those who make their homes outside, they provide a tenuous “lifeline” level of access. But public sanitation is often neglected and is vulnerable to restrictions or closures. Extra-household access is an especially important mode of sanitation access for women and girls. Although defecation needs outside of the home are (arguably) the same for both sexes, women have greater urination needs (in terms of both frequency and privacy) and unique MHM needs.⁸⁷ These must be met through extra-household sanitation systems as women and girls go about their business during the day. Extra-household access is most often noted as being needed in schools—which is absolutely correct—but it is also needed in transportation hubs, publicly accessible government offices, health clinics, markets and in the workplace. Each of these sites requires that non-users—often government employees or service enterprises working for the government—design, manage and maintain sanitation systems. The specific needs of women and girls must be incorporated in these systems in their design, implementation, monitoring and evaluation.

4.1.

Public latrine “access”

In 2015, with the anticipated transition from the MDGs to the SDGs imminent, the JMP reviewed 25 years of tracking water and sanitation access and discussed specific areas that might be included in future efforts. These included sanitation access in schools and health-care facilities, as two important locations where extra-household sanitation and MHM is needed.⁸⁸ Currently, the indicators being proposed by the JMP for the SDGs do include tracking the number of schools and health facilities with adequate facilities for urination defecation and MHM.⁸⁹ But as of January 2016, the UN Inter-Agency Expert Group on SDG Indicators only lists the presence of single sex latrines in schools, but not MHM facilities, as part of their

indicators for SDG 4; therefore they do not seem to be prepared to track access to the full sanitation needs of women and girls.⁹⁰

Public latrines provide sanitation access at the neighborhood or community level. In areas where private latrine access is less than 100 per cent, public sanitation can help keep the village, neighborhood or lane OD-free. Where extra-household sanitation access (or need) is significant, it may not make sense to track access exclusively at the scale of the household and school. Household-level tracking might miss exposure from OD practices of neighbors, especially if many of them are un-housed. Estimating latrine spatial density or monitoring at the community level may be more appropriate.⁹¹ This could potentially capture

87 Edwards and McKie 1997.

88 JMP 2015a.

89 JMP 2015b.

90 United Nations 2016.

residents without houses, which is important because their impacts on environmental health, as well as their vulnerability to disease, shame and insecurity, may be greatest.⁹²

Estimating the spatial density of latrines should not focus exclusively on their presence or absence, for the same reasons that monitoring at the household level should also not be so limited. Public latrines—whether at transit hubs, schools, health clinics, markets or

residential neighborhoods—are ineffective if they do not meet the same needs that motivate home latrine construction and use: they must also provide security, convenience, privacy and good hygiene. In addition, they must be open long hours and be available and affordable. Tracking efforts should be developed that capture indicators for all these attributes of the sanitary system. Many of these attributes are not gender-neutral, especially when women are pregnant, menstruating or looking after very young children.

4.2.

The design of infrastructure and the planning of projects

In urban areas, OD continues, not because of user preferences, but due to specific user impediments.⁹³ In order to establish a sewer connection, a family usually needs a house, (*de facto*) land tenure, sufficient space for a latrine and a clear throughway to the mainline, and liquidity to afford a connection to the sewer.

In 2005, the United Nations estimated that 100 million people worldwide were “without a place to live”.⁹⁴ Public latrines provide day use for all, but they represent a vital point of access to water, sanitation and hygiene to this population.⁹⁵ While many public latrines have some facilities for washing and bathing, they rarely contain facilities for disposing of MHM products, or for washing menstrual cloths. MHM management for homeless women and girls is, so far, almost universally unmet.⁹⁶ For many of the homeless urban poor, the sanitation challenge is keeping clean, and this goal goes beyond the containment of feces.⁹⁷ Women need more frequent access to cleansing during menstruation, are much more restricted in their ability to bathe in public, and are responsible for the bathing

of young children.⁹⁸ Women and girls who are visibly unwashed may be more vulnerable to personal violation, since cleanliness is a signifier of social vulnerability and poverty more generally.⁹⁹ These needs are rarely reflected in public sanitation projects or in current sanitation promotion efforts.

For those slum residents who do have housing but do not have legal tenure, public latrines must often meet their sanitation needs. Privacy, security, cleanliness and dignity are all essential, especially for women, and arguably more so than in sanitation systems with private latrines.¹⁰⁰ Although under-documented, it has been widely reported that women and girls whose primary access is through a public latrine face a particular risk of violence when accessing those facilities at night (or even sometimes during the day). This risk—or the fear associated with the risk—may increase significantly if there is no public latrine and if OD is practiced instead, as OD is normally conducted under cover of darkness.¹⁰¹ The risk of violence is not particular to sanitation practices, but a lower level of security and privacy is characteristic of extra-household sanitation, and it presents a particular burden for women and girls.

91 Rheingans et al. 2012.

92 Ibid.

93 Murray and Ray 2010.

94 Kothari 2005.

95 Public latrines in developed countries are also largely underfunded or inadequate. Some may charge per use, or may be badly maintained, or may not be open long hours, thus severely limiting access for homeless residents. Laskowski 2012.

96 Walters 2014

97 Joshi and Morgan 2007.

98 Walters 2014.

99 Joshi and Morgan 2007.

100 Kwiringira et al. 2014.

101 Sommer et al. 2014; Corburn and Hildebrand 2015.

In addition to these considerations, affordability, distance to the latrine, the condition of the path, the hours of availability and the ratio of bowls/pits to users are also important.^{102,103,104} Kwiringira et al. (2014) describe distance, path, hours and privacy as ‘gender filters’ when accessing public latrines in Uganda. Women have lower earning potential than men, yet will need more frequent use of public latrines, since they are forced to use them for urination as well as defecation. Thus pay-per-use toilets with an equal price of access for men and women—a common mode of access in urban slums¹⁰⁵—in fact provide an unequal level of service across genders. Since women often take care of children, if the children are using the public toilets, then this cost may also disproportionately burden women (see below). Distance is also a gendered attribute if

women are traveling through areas that put their personal safety at risk. And finally, both the hours of availability and the ratio of bowls/pits to the number of users have a gendered impact. The ratio in particular should be higher for women than for men, because: of the more frequent needs of women, young children tend to accompany their mother into the latrine, women have to sit or squat for the “short call” and this takes time¹⁰⁶, and they must address their MHM needs in addition to all of this. In contrast, some slum sanitation studies have shown that there are often fewer functioning latrines for women than for men.¹⁰⁷ Where public latrines are the primary source of sanitation services, whether or not the local public facilities meet all of the above needs may determine whether or not residents decide to practice OD.¹⁰⁸

BOX 4-1

Public sanitation in Mumbai slums: a public sector-civil society alliance

It has been so difficult to maintain multi-household or public toilets in usable condition around the world that WHO and UNICEF consider all public toilets and community-based toilet blocks to be “unimproved.”¹⁰⁹ Realistically, however, dense low-income urban settlements with tiny homes must rely on extra-household facilities.¹¹⁰

In Mumbai, a coalition between SPARC (a local NGO) and the National Federation of Slum Dwellers has led to Mahila Milan (“women united”) groups that work to demand, design, construct and maintain toilet blocks that respond to community needs, preferences, and payment ability.¹¹¹ The Mahila Milan groups have also supported slum dwellers and pavement dwellers (i.e. the homeless) to get access to water, or to prevent the demolition of their homes. The municipal government of Mumbai is now

constructing several toilet blocks, funded by the World Bank, for which SPARC has been awarded a construction contract. Every toilet block undergoes a series of community discussions and site feasibility checks, and ongoing maintenance is generally paid for with family passes (as opposed to paid for by use).¹¹² As quoted in Bapat and Agarwal (2003), the central focus is on “our needs, our priorities” for slum-dwellers.

It has been argued that SPARC has aggressively claimed credit for “local” infrastructure, but in reality has reached accommodations with the World Bank rather than being guided primarily by local priorities.¹¹³ Such accommodations notwithstanding, the SPARC example is a compelling “existence proof” that public sector-civil society alliances, with women in leadership roles, can build and maintain facilities at scale in challenging settings.

102 Bapat and Agarwal 2003.

103 Kwiringira et al. 2014.

104 McFarlane, Desai, and Graham 2014.

105 Corburn and Hildebrand 2015; Isunju et al. 2013.

106 Edwards and McKie 1997.

107 Hartmann et al. 2015.

108 Isunju et al. 2013.

109 Mitlin 2015.

110 Bartram 2008; Patel and The SPARC Team 2015.

111 Appadurai 2004; Bapat and Agarwal 2003.

112 Patel and The SPARC Team 2015.

113 Roy 2005.

Many urban residents, even if they have access in or near their home, may not have access outside of the home in their places of work, at the market, in government offices, hospitals or at school. Meeting the full sanitary service needs of a low-income working population requires at least basic access in all of these locations. Women are especially vulnerable without access at work and may even miss work during menstruation.¹¹⁴ Very little research has been

done on extra-household sanitation access: greater efforts are needed at tracking, designing and financing these types access. One exception, for which a small amount of significant research has been done, is sanitation access in schools. Schools are an important arena, because lack of sanitation could lead to lower attendance and graduation rates. We cover sanitation access in schools with an emphasis on girls' needs in Section 6 (on MHM).

4.3.

The design of government policy and financial plans

Public latrines are open to the general public, or a specific sub-section of the public, for example schools, train stations, markets and health clinics. Public latrines include those owned and operated by the government, private individuals, social enterprises or

NGOs, but they can be used by (almost) anyone. Ownership and management can exist as fully private, fully public or any combination of partnership between the two. Financing shared-use toilets is a significant urban planning challenge.

BOX 4.2

Public latrines and pit emptying in Tanzania and Uganda

In Dar Es Salaam, Tanzania and Kampala, Uganda, construction costs for public latrines are usually paid by a combined partnership of the local government and an NGO.¹¹⁵ Operations and maintenance costs are often paid through user fees, making public latrines that are in residential areas less profitable than those located at markets or transportation hubs. A sense of local ownership is

encouraged through the creation of sanitation committees, and in many locations it is required that half of the committee seats be filled by women.¹¹⁶ Such participation is known to be more difficult for women, and often can become a burden for more marginalized groups¹¹⁷, but pit emptying costs are more likely to be paid if users are active in management of their local public latrine.

114 Rajaraman et al. 2013; WSSCC 2015.

115 Isunju et al. 2013; Water Utility Partnership 2003.

116 Isunju et al. 2013.

117 Baruah 2007.

There are three policies that might potentially be adopted concerning a usage fee for public latrines: i) a cost recovery rate, ii) a token amount or iii) no user charge.¹¹⁸ A cost recovery rate can potentially allow for the funding of new latrines, a definite advantage since it aids in increasing coverage. Yet it may be a price that some users cannot ever afford, and other users cannot always afford. As noted above, this would have a gendered impact. When a small, or token, user fee can be charged, this may encourage some private participation even in less profitable low-income residential areas; it may allow the recuperation of some revenue. Verification that the rate is affordable should concentrate on women and other marginalized groups, or it may end up making the public latrine accessible to the average resident but not achieve equality in access. A less discriminatory option than pay-per-use is a community-managed sanitation block, used only by defined community members, who pay a monthly fee for operation and maintenance.¹¹⁹ Fully free access may be provided if the facilities have been constructed and provided with ongoing funding, typically through an NGO or an international agency (such as UNICEF); at present, scale up through these means remains out of reach.¹²⁰

The relationship between user fees, access and the financial sustainability for public latrines is not well understood. More research is needed on how fees affect the choice to use a public latrine (compared with OD or other alternatives) and the trade-offs between performance (in this case “good” performance being accessible, private, clean, well-maintained latrines), user fees and subsidies. Revenue is dependent on

the number of users per day, implying that the local population density, local private latrine density and the distance to the next public latrine are all likely to be large determinants of financial success. Therefore, assuming a minimum standard on indicators for dignity and equity of access, such as distance, cleanliness and well-maintained bowls and pits, a clear relationship could exist between population density, latrine density, subsidy, user fees and financial sustainability. A model estimating this relationship might be useful for governments looking to provide equitable access to sanitation for all its residents.

Gaps in access to shared sanitation cannot be filled without some investment of government funds.¹²¹ The key question here is not private versus public, but rather how to best leverage the financial resources that are made available at the local municipality, and how these can be most productively augmented by policies and funding from state, national and international governments, as well as NGOs and the private sector. For example, public authorities can encourage private participation by lowering operator rents in less profitable areas, establishing cross-subsidies with more profitable latrines, or combining latrine management with other services, such as water access at standpipes, public phones, convenience stores, etc.¹²² Yet none of these policies, or anything similar, will fully close the sanitation access gaps that currently exist for women and marginalized groups without a serious increase in the allocation of government revenues specifically towards this gender-sensitive goal.

118 Water Utility Partnership 2003.

119 Mara et al. 2010.

120 Water Utility Partnership 2003.

121 UN Women 2014.

122 Water Utility Partnership 2003.

5.

DIGNITY, “CLEANLINESS” AND MANUAL SCAVENGING

The principles of equity of access and dignity for all must be applied across the full sanitation system, including pit-emptying, transport, treatment and disposal or re-use for wastewater and fecal sludge. Gender, ethnicity, religion and caste must be taken into account when designing or implementing the “back-end” part of the sanitation system, since the back-end often employs the most marginalized, disempowered groups. Protections for workers in this part of the sanitary system are paramount, for health as well as for dignity.

Recognizing that water, sanitation and hygiene (WaSH) interventions are ultimately concerned with dignity demands more than simply meeting the security and hygiene needs of women. Defining “cleanliness” and designating who is “unclean” is a commonly used means of creating or reinforcing social marginalization, and WaSH interventions often play a role in perpetuating existing forms of oppression or liberating those who are so oppressed. Therefore, project implementers who increase the coverage of pit latrines, but do not account for the social violence that is sometimes visited on those who empty those pits, will fail at meeting the dignity and equality goals of WaSH as put forward in this paper. For this reason, ending manual scavenging is central to the creation of dignified sanitation systems. It is also a vital step towards gender equality, since the vast majority of manual scavengers are, in fact, women.¹²³

Manual scavenging is an extreme form of marginalization of the lowest castes, or *Dalits*, in South Asia; some have described it as a form of inherited torture.¹²⁴ Manual scavenging refers to the servicing of dry latrines by sweeping fresh feces onto baskets that are then carried on the head and disposed of outside of town. Other castes were once not allowed to touch the *Dalit* castes associated with manual scavenging, they

were not allowed to enter into the kitchens or share food with other castes, they were often not allowed to use the same water sources, and marriage outside of their caste was never a possibility.¹²⁵ Although these practices have lessened since the end of colonization, they continue to this day in many areas of South Asia. Avoiding even passing association with the *Dalit* community is paramount for many non-*Dalit* rural households in the north of India, even now.¹²⁶

Approximately 95 per cent of people engaged in manual scavenging are women, at the bottom of both gender and caste hierarchies.¹²⁷ Shahid (2015) observed that 100 per cent of the manual scavengers servicing the 47,000 dry latrines in one district of Uttar Pradesh were women.¹²⁸ But identifying those women, and the few men who share their pain, is no easy task. The deep shame associated with manual scavenging makes monitoring difficult; it is embarrassing for the individual to report having done the task, and it is shameful for government officials at local levels and in national agencies to admit to the continuation of this illegal practice within their jurisdiction. The *Safai Karamchari Andolan* (a national movement committed to the eradication of manual scavenging and the rehabilitation of all scavengers)

123 Shahid 2015.

124 Gupta 2013.

125 Joshi and Ferron 2007; Bhattacharjee 2014.

126 Coffey et al. 2014.

127 Jan Sahas Social Development Society 2014.

128 Shahid 2015.

estimated the number of manual scavengers to be 1,200,000, in the year 2006.¹²⁹ The Government of India Census of 2011 counted nearly 800,000 dry latrines; it is likely that humans manually clean a significant part of the waste from these latrines.¹³⁰ At the very least, it is confirmation of the continuation of the practice of manual scavenging, although leaving the quantification of individuals employed by the practice still uncertain.¹³¹

Manual scavenging and the social exclusions associated with it continue to this day in Pakistan, India, Nepal and Bangladesh. Throughout South Asia, scavenging is sometimes assigned to certain groups of Christians and Muslims as well; this is especially true for the group of Muslims in Bangladesh who identify as Dalits, despite no traditional caste system existing in the country.¹³² Cultural practices associated with the marginalization and social exclusion of the Dalits also persist.¹³³ The marginalization of the people who are employed in pit emptying and the transporting and disposal of fecal sludge has also been observed in Sub-Saharan Africa¹³⁴, but nothing approaching the degree to which it occurs in South Asia.

Soon after independence, India passed the Protection of Civil Rights Act (1955) aimed at abolishing the social exclusions associated with untouchability.¹³⁵ Employment of manual scavenging was made illegal in 1993 through The Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act. A new Act, titled The Prohibition of Employment as Manual Scavengers and their Rehabilitation Act (2003), includes sewage workers, a change compared to the 1993 law. But the Act is careful to exclude sewage workers who are assigned proper protective gear; they do not meet the official definition of a manual scavenger, and are not protected under the Act.¹³⁶

In India, with respect to legal statutes, government census efforts and the proper targeting of eradication policies, there has been some debate on the definition of manual scavenging. In addition to the tricky delineation regarding sewage workers, there have been reports of similar situations with the Indian military, railways, government engineering works, and more generally, in the public sector.¹³⁷ For example, whether or not to include workers that are employed by the Ministry of Railways has been debated.¹³⁸ However, contradictions remain in definition and enforcement; in 2010-2011, the Ministry of Railway's own records showed that 7,114 of their trains discharged fecal matter directly onto the railways tracks, which were then cleaned by their employees.¹³⁹ Although "Zonal Railways" are instructed to provide protective equipment, such as "long brooms" and "jet pipes", the distribution and usage of protective gear is rarely enforced.¹⁴⁰ Nor is the employment data disaggregated by gender.¹⁴¹ The Act itself is clear, however: if these employees are not using protective gear, they are illegally engaged as manual scavengers.

Efforts to eradicate manual scavenging have approached it through either the rehabilitation of latrines or the rehabilitation of people. This has led to engagement with WaSH NGOs, international agencies, local NGOs focusing on women's empowerment, and several government programmes focused on eradicating manual scavenging. *Rashtriya Garima Abhiyan* (RGA or National Campaign for Dignity and Eradication of Manual Scavenging) and *Jan Sahas* (JS or People's Courage) are two Indian grassroots NGOs that focus on the empowerment of manual scavengers. Sulabh International, a Delhi-based NGO, focuses primarily on the conversion of dry latrines to pour-flush latrines and the installation of public (pour-flush) latrines in slums, commercial areas and transit hubs.¹⁴² Various other UN agencies and international

129 Amar 2006.

130 *Rashtriya Garima Abhiyan* 2013.

131 Kumar 2014; Shahid 2015.

132 Sepúlveda Cardona and de Albuquerque 2010; de Albuquerque 2012; *Navsarjan Trust India, FEDO Nepal, and International Dalit Solidarity Network* 2013.

133 Saikia 2014.

134 de Albuquerque 2012a.

135 Bhattacharjee 2014.

136 Kumar 2014.

137 National Commission for Safai Karamcharis 1995.

138 *Rashtriya Garima Abhiyan* 2013; Ministry of Social Justice and Empowerment 2013.

139 Ministry of Social Justice and Empowerment 2013.

140 *Rashtriya Garima Abhiyan* 2013; Ministry of Social Justice and Empowerment 2013.

141 *Rashtriya Garima Abhiyan* 2013; Ministry of Social Justice and Empowerment 2013.

142 Bhattacharjee 2014.

human rights bodies have also addressed manual scavenging from a WaSH perspective or through a human rights approach, including the International Labour Organization (ILO), UNICEF, WHO, United Nations Development Programme (UNDP) and United Nations Entity for Gender Equality and the Empowerment of Women (UN Women).¹⁴³

Major Government of India schemes focusing on manual scavengers include the Low Cost Sanitation for Liberation of Manual Scavengers Scheme (1989), The National Commission for *Safai Karmacharis* (1994), the National *Safai Karmacharis* Finance and Development Corporation (1997), the Total Sanitation Campaign (1999) (renamed *Nirmal Bharat Abhiyan* in 2012), and the Scheme for Rehabilitation of Manual Scavengers (SRMS, 2007).¹⁴⁴ According to a survey implemented by RGA in three Indian states, 76 per cent of the people who received benefits under SRMS did not practice manual scavenging at the time, and 51 per cent of the beneficiaries were men even though 98 per cent of scavengers in their survey were women.¹⁴⁵ Reportedly, many women active in manual scavenging were not included in the list of eligible recipients at the district level.¹⁴⁶

In addition to rehabilitation efforts, better protections are also badly needed to ensure the safety and dignity of not just manual scavengers, but all sanitation workers. Joshi and Ferron recall a personal interaction with workers at the Hyderabad Metropolitan Water Supply and Sanitation Board, who “...broke into raucous laughter, when the researcher listed the safety equipment supposed to be provided to them, as mentioned to her by the senior Board officials”.¹⁴⁷ The researchers go on to observe that:

For the majority of scavengers in smaller towns and villages nothing much has changed despite the passage of time and the growing demand for pour-flush latrines. On the one hand, in the absence of any meaningful rehabilitation, there

is a growing feeling of redundancy and insecurity. On the other hand, they continue to clean drains, *nalas*, sewers, septic latrines and pit latrines working as municipal or private sweepers and cleaners for little remuneration and without adequate protection.¹⁴⁸

Mandates for protective equipment are of little value if they are not accompanied by funding for such equipment (private or public), and by ongoing gender-disaggregated monitoring of the progress made towards the goals of sanitary worker safety and dignity.

As caste is being renegotiated in India, part of the process involves resistance on the part of lower castes to perform the tasks historically associated with *Dalits*. Coffey et al. conducted an in-depth look at the reasons why a significant proportion of the rural population in India with access to a latrine continues to practice OD.¹⁴⁹ They found that families receiving the government subsidy for latrine construction have tenuous financial means, little voice in the design of the toilets, and much uncertainty about whether or not they will receive the subsidy again. In many cases, once their pit is full, households cannot pay someone to empty the pit or cannot afford to move the superstructure and construct a new pit. Many build pits that they view as “polluting”, as their preferred choice of building a larger septic tank remains financially out of reach. Using smaller pits, or being seen to empty the pits themselves, could cause their neighbors to view them as “polluted”, thus classifying them with a “lowly” social group. OD does not pose the same risk, since it allows pollution to remain outside the home; in fact, it is associated with strength and health. Therefore, people limit their use or withhold entirely from using latrines, and especially those with shallow pits.

Coffey et al.’s conclusions shed some light on one potential reason for OD’s continuation in areas that experience high levels of discrimination for manual scavenging. Although it is hard to imagine the eradication of social stigma associated with the *Dalit* castes, it is equally hard to imagine that OD will be

143 Bhattacharjee 2014; Mander 2014.

144 Bhattacharjee 2014; *Rashtriya Garima Abhiyan* 2012.

145 *Rashtriya Garima Abhiyan* 2012.

146 Kumar 2014.

147 Joshi and Ferron 2007.

148 Ibid.

149 Coffey et al. 2014.

fully eradicated in India without explicitly incorporating caste considerations in the design of rural sanitation systems, such as the size of pits and the availability of pit-emptying services. Eliminating the practice of manual scavenging will further gender

equality through both liberating the women locked in this degrading practice. It may also contribute to the creation of a system where women themselves feel that they can use their toilets without risking adverse social consequences once their pits are full.¹⁵⁰

150 Mangubhai and Capraro 2015; Coffey et al. 2014.

6.

MENSTRUAL HYGIENE MANAGEMENT

We turn now to sanitation needs for the “monthly call”, or MHM, in rural areas, peri-urban areas and schools. Writing in 2004, Bharadwaj and Patkar were surprised to find that, among water and sanitation professionals, there was almost total neglect of MHM as a sanitation need.¹⁵¹ The authors found that, among NGOs from across South Asia and East Africa, there was widespread recognition of the need for hygiene education and for latrines to be girl-friendly in secondary schools. But the issue was missing from sanitation discussions, and even when girls and women were educated about hygienic practices for menstruation, there was no connection made to MHM needs and infrastructure design in homes or schools. A combination of social taboos around the topic of menstruation, low levels of education among low-income girls and women, and low decision-making ability among women in many South Asian communities has been suggested as the set of reasons for continuing neglect of MHM in sanitation policies.¹⁵²

The last 10 years have seen much more published research on the health and social consequences of poor MHM practices, and more researchers are working to understand MHM needs of low-income girls and women. Nevertheless, the data on menstrual management and sanitation design remains sparse relative to that on, for instance, defecation. The literature is methodologically varied, with a mix of vignettes and site-specific interviews, systematically collected qualitative evidence over several countries¹⁵³, and quantitative impact studies of access to (or the lack of access to) latrines. However, much knowledge remains tacitly held by those working in the field but not writing about it.¹⁵⁴

The literature on rural and urban slum sanitation is OD-focused, but several research groups have survey and observational data on a range of stressors with respect to MHM. In rural and tribal areas of India,

severe stress is associated with menstruation, because a menstruating woman faces many restrictions on her movements.¹⁵⁵ This is all the more true for newly-married women, whose new families may be highly protective of their modesty and reputation; these women have to find a way to access private spaces to manage their periods, which may be some distance from the dwelling and may not be adequately private. The same researchers reported that urinating and defecating in private was especially stressful for pregnant women, who frequently faced long walks to the latrine or field. Overall, walking to distant facilities is reported as stressful in many localities (including rural villages, urban slums and in camps set up for humanitarian emergencies), for any aspect of sanitation, and very much so for MHM.¹⁵⁶ In urban areas, carrying water from the communal water point or home to the place for sanitation was also difficult; water supplies, which in many communities are essential for cleansing both after defecation and during menstruation,

151 Bharadwaj and Patkar 2004.

152 Mahon and Fernandes 2010; Das et al. 2015.

153 FANSA and WSSCC 2015.

154 Sumpter and Torondel 2013.

155 Sahoo et al. 2015; Hulland et al. 2015.

156 Hulland et al. 2015; Sommer 2012.

are often far from a rural “latrine”.¹⁵⁷ Women and girls in several studies expressed the fear of being looked at, harassed, molested or raped while walking to and from their sanitation sites, or even while engaged in a sanitation practice.¹⁵⁸

Latrines that are not privately owned (by one household) are usually few in number relative to the need, in terrible condition, without water, dark, smelly and badly lit. As the previously cited authors note, it is near-impossible to change menstrual cloths or sanitary pads in such confines, and to clean oneself or one’s cloths. So women go through the indignity and fear of being observed in non-private places, or they find a way to clean their cloths (if they use reusable cloths) or dispose of single-use pads when no one is home. Cleaning and drying menstrual cloths, and disposing of pads, is generally a source of stress in rural areas.¹⁵⁹ It has been suggested that poor menstrual hygiene, especially among women who re-use their cloths, is partly responsible for reproductive tract diseases.¹⁶⁰ A range of studies indicates that such diseases and poor menstrual management are correlated; the evidence overall is mixed, however, and at this time a clear causal link cannot be made.¹⁶¹ Overall, the need for hygienic and discreet disposal, or hygienic and discreet washing and drying, appears urgent; yet this need is rarely taken into account in today’s sanitation promotion programmes and designs.¹⁶² The Water Supply and Sanitation Collaborative Council’s (WSSCC’s) highly effective programme on menstruation awareness and hygiene education¹⁶³, which recommends disposing of a used product in a bin that will be emptied or burying it cleanly in the ground, would be difficult to implement in crowded slum conditions or in camps for displaced women and girls.

These difficulties are significantly exacerbated by the taboos, restrictions and secrecy that surround menstruation. Mahon and Fernandes summarize several

surveys from Nepal and India that list the multiple restrictions associated with menstruation: not eating certain foods, not cooking, not touching males and not doing household work.¹⁶⁴ Sahoo et al. argue that the more a woman’s freedom is restricted, the higher her level of stress during menstruation.¹⁶⁵ Social taboos prevent menstruation needs from being seriously discussed at the policy level, let alone being met on the ground.¹⁶⁶ The ability of all women and girls to address their MHM needs with dignity is a bedrock component of gender equality.¹⁶⁷ Promoting this right requires age-appropriate education, removing taboos and combating shame, facilities for washing and disposal, and access to affordable and acceptable MHM products. All these issues cannot be resolved by access to adequate sanitation facilities alone, but significant relief can be achieved with adequate and accessible sanitation and feasible disposal options.

Within the MHM literature, school sanitation has received a lot of attention, and attempts have been made to correlate sanitation and hygiene to absence from school and to academic performance. Schools are the location of significantly formative processes in the lives of girls as they become women, and school facilities (as well as sex and hygiene education) are important for shifting minds, behaviors and expectations. School latrines in low-income settings are often poorly maintained or lack privacy or feel unsafe. Studies from Kenya to India to the United Kingdom have found complaints of this nature from boys and girls. Toilets that are smelly and dirty induce disgust in children¹⁶⁸, who are naturally afraid to use them. They may not be separated by gender, or lockable, or may not have soap, and thus girls will use them to change their pads (or use them at all) only when “desperate”.¹⁶⁹ The inability to safely dispose of a sanitary product leads girls to throw the product into the toilet bowl or pit¹⁷⁰, which, in turn, makes the latrine even more unusable.

157 Sahoo et al. 2015; Hulland et al. 2015.

158 Hulland et al. 2015; Corburn and Hildebrand 2015; Hartmann et al. 2015; Sommer 2012.

159 Yasmin et al. 2013; Dasgupta and Sarkar 2008.

160 Das et al. 2015.

161 Sumpter and Torondel 2013.

162 Sommer et al. 2013.

163 Das et al. 2015.

164 Mahon and Fernandes 2010.

165 Sahoo et al. 2015.

166 Winkler and Roaf 2014.

167 Ibid.

168 Caruso, Freeman, et al. 2014.

169 Barnes and Maddock 2002

170 Caruso et al. 2014.

Girls in such schools undergo the discomfort of using one pad the whole day, or they go home to change and may not return to school¹⁷¹, or they avoid school altogether because they cannot manage their menstrual hygiene.¹⁷² Surveys in Kenya, Cameroon and Senegal have found that between 10 per cent and 47 per cent of the girls interviewed said that they missed school for at least one day a month because of menstrual pain and inability to change at school.¹⁷³ Though there are few rigorous studies on sanitation for menstruation and girls' attendance, there is good overall evidence that, without water access (inside the stall or latrine) and convenient facilities for MHM product disposal, girls avoid school at least some of the time.¹⁷⁴ Dreibelbis et al. find that girls' school attendance is more correlated with socio-demographic factors—such as family income and household duties—than it is with school sanitation and hygiene, but that absenteeism overall goes down with *clean* toilets in school.¹⁷⁵ In sum, though the evidence is mixed, and some studies are more rigorously conducted than others in this space, the literature indicates that school absence, especially for girls, is broadly linked to safe and clean sanitation.¹⁷⁶

The research on girls' academic performance and ability to manage menstruation with comfort and dignity is inconclusive. However, shame, discomfort, fear of staining her clothing, negative feelings about the body, and other deeply stressful mental conditions for a girl who has her period in school have been extensively and movingly documented. The general low level of knowledge and awareness of what is happening to

them makes girls afraid and ashamed; low-income schools rarely educate children about the menstrual cycle. Sommer finds that, in Tanzania, the main source of knowledge for a girl is her older female relatives, who tend to focus on the management of inconvenience, avoidance of shame, and avoidance of boys, rather than on self-esteem, hygienic practices and safe disposal.¹⁷⁷ Several of these authors have found that shame and fear interfere with girls' abilities to concentrate in the classroom: if a girl is menstruating "she will be scared, her whole mind will be centered there".¹⁷⁸ Moreover, the changing expectations of girls once they start to menstruate may also interfere with their pursuit of an education or career.¹⁷⁹ This is also, we argue, a kind of school absence, but one that cannot be captured in routinely collected enrollment or attendance data.

Scholars and international non-profits have compellingly concluded that the lack of knowledge about menstruation exacerbates girls' shame and lack of dignity and contributes to unhygienic MHM. All research in this area points to the clear and urgent need for science-based, age-appropriate education for girls and boys, the need to supply sanitary materials in school when necessary, and behavior change efforts at all levels so that safe sanitation can be practiced. However, all these policies can only succeed if adequately clean and adequately dignified latrines, with a reliable water supply, are available in the schools. The need for behavior change and the need for girl-friendly facilities go hand in hand.

171 McMahan et al. 2011.

172 Corburn and Hildebrand 2015.

173 WSSCC and UN Women n.d.; WSSCC and UN Women 2015.

174 Freeman et al. 2011; Jasper et al. 2012.

175 Dreibelbis et al. 2013.

176 Sumpter and Torondel 2013; Garn et al. 2013.

177 Sommer 2010.

178 Grade 8 girl in rural Kenya; quoted in McMahan et al. 2011.

179 Caruso et al. 2014; Sommer 2010.

7.

CONCLUSION

Inadequate access to sanitation in a community is an inherently gendered problem, requiring an explicitly gendered solution. Pursuing the human right to sanitation and gender equality requires that policymakers and practitioners incorporate women's voices and women's unique needs in tracking progress towards this goal, project planning and infrastructure design, and in the creation of financing options and government partnerships. Safe sanitation is a gateway service for the enjoyment of other human rights; it is a basic necessity that pulls down other development goals when it is neglected. Private sanitation, but also public sanitation access, are both cornerstone issues in sustainable development planning, and deserve much greater prioritization.

Male sanitation needs are different from female sanitation needs in part because of biology and in part because of social expectations. Lack of access to dignified sanitation affects women differently than men because of different requirements for modesty, personal security and the disproportionate burden of unpaid labor. All three needs of women and girls—defecation, urination and menstrual management—should be met with dignity through accessing a latrine that is clean, safe, accessible and affordable. Marginalized workers, predominantly women who are employed in the maintenance of these latrines should be able to do their jobs with dignity and allotted protective equipment.

In India, promoting latrine use without empowering sanitation workers has contributed to an increase in latrine construction that has been unaccompanied by a commensurate increase in use. In Sub-Saharan Africa many school latrines allow boys to meet their sanitation needs, while girls continue to spend several days each month in shame and fear. Sanitation systems

cannot provide their expected health improvements if they do not provide dignified, equal access to all. Those whose needs are not explicitly designed for often end up bearing the burden of their own or others' pollution, either physically or symbolically.

We conclude that equal access to a sanitation system that protects personal dignity is a necessary characteristic of a sanitation system that protects public health. Sanitation is meant to create a barrier between humans and pathogens, blocking the transmission of disease. But it is always more than that. The biological necessities of defecation, urination and menstruation have heavy social significance: when we access sanitation, we are seeking to hide an act that is considered dirty, and emerge from it clean, physically but also symbolically. We create pollution in the act, but the sanitation system allows us to find purification. Dignity and health are thus intertwined. Meeting public health goals and human rights goals are not competitive pursuits; they are synergistic efforts and vital parts of any well-functioning sanitation system.

8.

POLICY RECOMMENDATIONS AND RESEARCH GAPS

These recommendations are meant for governments (local, regional and national), the UN agencies, and relevant duty-bearers.

- 1) Clean, affordable and safe sanitation in public or shared spaces must become a priority-planning sector for sustainable development and gender equality. Encouraging more household latrines is essential but is not enough for women's and girls' access.
- 2) The voice of women and girls are important during all stages: the setting and tracking of indicators of access, the design of gender-responsive infrastructure, the planning of projects and during the creation of financial plans.
- 3) Gender equality means that toilet programmes and design cannot stop at defecation and disease; they have to take equally seriously the requirements of hygiene and dignity for daytime urination and menstruation management.
- 4) For all indicators of sanitation access, and for monitoring and evaluating such access, gender-disaggregated data are needed. If gender-disaggregation is not possible, then data should be collected on women alone, since male sanitation needs can be met in the course of meeting female sanitation needs.
- 5) The hours of availability, cost of access, distance to travel, and the ratio of bowls/pits to the number of users, are important gender-sensitive indicators of access. The ratio in particular should be higher for women than for men; distances should be short to minimize the risks of violence.
- 6) Sanitation systems should focus not only on urine and feces disposal or treatment, but also on the disposal (or cleaning and drying) of menstrual hygiene products. Hygienic disposal of all waste products is central to accessible and sustainable latrine systems.
- 7) Investing in safe sanitation at scale for universal access requires private-public-civil sector alliances to mobilize domestic as well as international finance. In particular, a better understanding of how to provide full access to well-maintained facilities through a combination of user fees and subsidies is needed.
- 8) The principles of equity of access and dignity for all must be applied across the full sanitation system, including pit-emptying and transport of waste.
- 9) Ending manual scavenging is a key priority for dignified sanitation systems; it is also a step towards gender equality since the majority of scavengers are women.
- 10) There should be no unfunded mandates for protective equipment for sanitary workers. All policy goals concerning sanitary workers in the formal

and informal sectors should be funded, monitored and the data gender-disaggregated.

- 11) Clean and accessible sanitation in schools, slums, workplaces and marketplaces should be designed to enable dignified and discreet menstrual hygiene management; the social taboos and restrictions

surrounding menstruation make such access especially important for gender equality currently.

- 12) Wherever feasible, sanitary products should be made available in schools, so that girls' health and dignity can be protected, and a gender-equal learning environment created (or preserved).

Further study or more rigorous evaluation is needed regarding the following:

- 1) Estimating the geographic locations and distribution in the population in access to safe, sustainable sanitation that meets all three sanitary needs, especially for latrines outside of the home, including places such as schools, markets, the workplace, public institutions, transit hubs and health clinics.
- 2) Indicators of dignity for access to sanitation systems for all genders, focusing on safety, security, privacy, cleanliness, maintenance and functionality. These may also include use and measures of access, such as distance, availability and affordability, where appropriate.
- 3) Indicators of dignity for sanitation system workers of all genders, focusing primarily on safety, security and social status. These may include specific protective equipment as well as worker health.
- 4) Development of new policies, systems and sensor technologies that increase the ability to monitor the impacts on health and dignity throughout the sanitation system (including the point of access, pit-emptying, transport of wastewater and fecal sludge, treatment and proper disposal).
- 5) Estimation of the level of government subsidies necessary for viable public latrines that will provide universal access to safe, sustainable sanitation with dignity, in urban slums.
- 6) Quantitative assessment of the impact on attendance, school performance and self-confidence for girls and boys from age-appropriate, sexual-health education, and from access to sanitation that meets all three needs with dignity.
- 7) Development of sustainable, safe and affordable disposal systems for current MHM products that are sensitive to the needs and preferences of women and girls in low-income settings.
- 8) Development of sustainable, safe, affordable, biodegradable, disposable MHM products that are sensitive to the needs and preferences of women and girls in low-income settings.
- 9) The user preferences and willingness to pay for MHM products among women and girls in low-income settings, with explicit incorporation of the effect of access to various types of sanitation facilities.
- 10) Further research is needed on the link between school absence, whether physical or mental, and the lack of i) age-appropriate education, ii) private facilities for washing and disposal and ultimately iii) dignity with regards to MHM.

MAIN MESSAGES

- 1) Dignity must be at the heart of safe and sustainable sanitation
 - a. It is the central issue concerning use and therefore should be the focus of evaluation for sanitation interventions; and
 - b. It must be applied all along the sanitation chain, to users of sanitation facilities as well as workers servicing those facilities.
- 2) Equality in access to basic sanitation is both necessary and a human right. All people deserve access to sanitation with dignity, regardless of income, gender, ethnicity, religion, sexuality, migrant status or caste.
 - a. Sanitation needs are greatest for health, opportunity and dignity, among those who are most marginalized; and
 - b. Sanitation for gender equality must go beyond preventing OD to designing sanitation facilities and programmes for the unique needs of women and girls.
- 3) Public latrines are a vital part of equal access to sanitation with dignity. Sanitation systems should be designed, and adequately funded, such that extra-household access in slums, markets, transit hubs, health clinics, government offices and schools is provided for all genders.
- 4) Safe sanitation is a gateway service for dignity, health and gender equality. A sanitation programme within a human rights framework incorporates both dignity and equality, whereas a programme focused exclusively on public health or even personal safety does not.

REFERENCES

- Adeyeye, Adenike. 2011. "Gender and Community-Led Total Sanitation: A Case Study of Ekiti State, Nigeria." *Tropical Resources: The Bulletin of the Yale Tropical Resources Institute* 30: 18–27.
- Amar, Kalpana. 2006. "Report to the Working Group on Safai Karmacharies." The Working Group on the "Empowerment of Scheduled Castes (SCs)" for the Eleventh Five-Year Plan (2007-2012).
- Amnesty International, Human Rights Watch, and WASH United. 2015. "United Nations General Assembly Affirms That Water and Sanitation Are Distinct Rights and Confirms a Strong Definition of These Rights." https://www.hrw.org/sites/default/files/supporting_resources/unga70-resolution_on_wash_-_joint_ngo_statement.pdf.
- Appadurai, Arjun. 2004. "The Capacity to Aspire: Culture and the Terms of Recognition." In *Culture and Public Action*, edited by Vijayendra Rao and Michael Walton, 59–84. Stanford, Calif: Stanford University Press: Stanford Social Sciences.
- Bapat, Meera, and Indu Agarwal. 2003. "Our Needs, Our Priorities; Women and Men from the Slums in Mumbai and Pune Talk about Their Needs for Water and Sanitation." *Environment and Urbanization* 15 (2): 71–86.
- Barnard, Sharmani, Parimita Routray, Fiona Majorin, Rachel Peletz, Sophie Boisson, Antara Sinha, and Thomas Clasen. 2013. "Impact of Indian Total Sanitation Campaign on Latrine Coverage and Use: A Cross-Sectional Study in Orissa Three Years Following Programme Implementation." Edited by Abdisalan Mohamed Noor. *PLoS ONE* 8 (8): e71438. doi:10.1371/journal.pone.0071438.
- Barnes, P.M., and A. Maddock. 2002. "Standards in School Toilets - a Questionnaire Survey." *Journal of Public Health Medicine* 24 (2): 85–87.
- Bartram, Jamie. 2008. "Improving on Haves and Have-Nots." *Nature* 452 (7185): 283–84.
- Bartram, Jamie, and Sandy Cairncross. 2010. "Hygiene, Sanitation, and Water: Forgotten Foundations of Health." *PLoS Medicine* 7 (11): e1000367. doi:10.1371/journal.pmed.1000367.
- Baruah, Bipasha. 2007. "Assessment of public-private-NGO Partnerships: Water and Sanitation Services in Slums." In *Natural Resources Forum*, 31:226–37. Wiley Online Library. <http://onlinelibrary.wiley.com/doi/10.1111/j.1477-8947.2007.00153.x/full>.
- Bharadwai, Sowmyaa, and Archana Patkar. 2004. "Menstrual Hygiene Management in Developing Countries: Taking Stock." Junction Social.
- Bhattacharjee, Shikha Silliman. 2014. *Cleaning Human Waste: "Manual Scavenging," Caste, and Discrimination in India*. Human Rights Watch.
- Bill & Melinda Gates Foundation. 2012. "Gates Foundation Water Sanitation and Hygiene Strategy Overview."
- . 2016. "Reinvent the Toilet Challenge." *Reinvent the Toilet Challenge*. Accessed February 8. <http://www.gatesfoundation.org/What-We-Do/Global-Development/Reinvent-the-Toilet-Challenge>.
- Boisson, Sophie, Peppin Sosai, Shubajyoti Ray, Parimita Routray, Belen Torondel, Wolf-Peter Schmidt, Bishakha Bhanja, and Thomas Clasen. 2014. "Promoting Latrine Construction and Use in Rural Villages Practicing Open Defecation: Process Evaluation in Connection with a Randomised Controlled Trial in Orissa, India." *BMC Research Notes* 7 (1): 486.
- Bongartz, Petra. 2010. *Tales of Shit: Community-Led Total Sanitation in Africa*. Vol. 61. IIED. http://books.google.com/books?hl=en&lr=&id=M8_R2wnfgm4C&oi=fnd&pg=PP1&dq=%22Angela+Milligan+and+Holly%22+%22Deiri,+John+Devavaram,+Charlotte%22+%22Kumar+Phnuyal,+Giacomo+Rambaldi,%22+%22the+importance+of+analysing%22+%22Scaling+up+CLTS+in+sub-Saharan%22+%22A.+Wolfer+and+Robin+W.%22+&ots=T9RiQTBRUn&sig=MOAioF7xfSXarSzTR5v7saUPA_w.
- Bongartz, Petra, Samuel Musembi Musyoki, Angela Milligan, and Holly Ashley. 2010. "Tales of Shit: Community-Led Total Sanitation in Africa – an Overview." In *Tales of Shit: Community-Led Total Sanitation in Africa*. Vol. 61. IIED. http://books.google.com/books?hl=en&lr=&id=M8_R2wnfgm4C&oi=fnd&pg=PP1&dq=%22Angela+Milligan+and+Holly%22+%22Deiri,+John+Devavaram,+Charlotte%22+%22Kumar+Phnuyal,+Giacomo+Rambaldi,%22+%22the+importance+of+analysing%22+%22Scaling+up+CLTS+in+sub-Saharan%22+%22A.+Wolfer+and+Robin+W.%22+&ots=T9RjJURGWVv&sig=ohHyh76Gh6YR4TCUkiTUbKVjJn8.
- Burr, Peter, and Catarina Fonseca. 2011. "Applying the Life-Cycle Costs Approach to Sanitation." Briefing Note 3. WashCost. IRC International Water and Sanitation Centre.
- Caruso, Bethany A., Robert Dreibelbis, Emily Awino Ogutu, and Richard Rheingans. 2014. "If You Build It Will They Come? Factors Influencing Rural Primary Pupils' Urination and Defecation Practices at School in Western Kenya." *Journal of Water, Sanitation and Hygiene for Development* 4 (4): 642. doi:10.2166/washdev.2014.028.
- Caruso, Bethany A., Matthew C. Freeman, Joshua V. Garn, Robert Dreibelbis, Shadi Saboori, Richard Muga, and Richard Rheingans. 2014. "Assessing the Impact of a School-Based Latrine Cleaning and Handwashing Program on Pupil Absence in Nyanza Province, Kenya: A Cluster-Randomized Trial." *Tropical Medicine & International Health* 19 (10): 1185–97. doi:10.1111/tmi.12360.
- Clasen, Thomas F. 2010. "Household Water Treatment and the Millennium Development Goals: Keeping the Focus

- on Health." *Environmental Science & Technology* 44 (19): 7357–60. doi:10.1021/es1018674.
- Coffey, Diane, Aashish Gupta, Payal Hathi, Dean Spears, Nikhil Srivastav, and Sangita Vyas. 2014. "Culture and the Health Transition: Understanding Sanitation Behavior in Rural North India." In *IGC-ISI Development Conference (Delhi) Working Paper*. <http://www.theigc.org/wp-content/uploads/2015/04/Coffey-et-al-2015-Working-Paper.pdf>.
- Corburn, Jason, and Chantal Hildebrand. 2015. "Slum Sanitation and the Social Determinants of Women's Health in Nairobi, Kenya." *Journal of Environmental and Public Health* 2015: 1–6. doi:10.1155/2015/209505.
- Das, Bhabani, Padma Das, Ambarish Dutta, PR Misra, Bijaya Padhi, Krushna Chandra Sahoo, Bethany A. Caruso, et al. 2015. "Social and Psychological Impact of Limited Access to Sanitation." WSSCC; LSHTM.
- Dasgupta, A., and M. Sarkar. 2008. "Menstrual Hygiene: How Hygienic Is the Adolescent Girl?" *Indian Journal of Community Medicine* 33 (2): 77–80.
- de Albuquerque, Catarina. 2012a. "On the Right Track." *Good Practices in Realizing the Rights to Water and Sanitation*. World Water Council, Lisbon. http://www.freshwateraction.net/sites/freshwateraction.net/files/BookonGoodPractices_en.pdf.
- . 2012b. "Statement by the Special Rapporteur on the Human Right to Safe Drinking Water and Sanitation 67th Session of the General Assembly." UN Office of the High Commissioner on Human Rights. <http://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=12853&LangID=E>.
- Diallo, Mamadou O., Donald R. Hopkins, Mohamed S. Kane, Seydou Niandou, Ali Amadou, Boubacar Kadri, Abdou Amza, Paul M. Emerson, and James A. Zingesser. 2007. "Household Latrine Use, Maintenance and Acceptability in Rural Zinder, Niger." *International Journal of Environmental Health Research* 17 (6): 443–52. doi:10.1080/09603120701633529.
- Dreibelbis, Robert, Leslie E. Greene, Matthew C. Freeman, Shadi Saboori, Rachel P. Chase, and Richard Rheingans. 2013. "Water, Sanitation, and Primary School Attendance: A Multi-Level Assessment of Determinants of Household-Reported Absence in Kenya." *International Journal of Educational Development* 33 (5): 457–65. doi:10.1016/j.ijedudev.2012.07.002.
- Dreibelbis, Robert, Marion Jenkins, Rachel P. Chase, Belen Torondel, Parimita Routray, Sophie Boisson, Thomas Clasen, and Matthew C. Freeman. 2015. "Development of A Multidimensional Scale to Assess Attitudinal Determinants of Sanitation Uptake and Use." *Environmental Science & Technology* 49 (22): 13613–21. doi:10.1021/acs.est.5b02985.
- Edwards, Julia, and Linda McKie. 1997. "Women's Public Toilets." In *Embodied Practices: Feminist Perspectives on the Body*, 135–49.
- Evans, Barbara, Hazel Jones, Jeremy Colin, and Andrew Robinson. 2009. "Sustainability and Equity Aspects of Total Sanitation Programmes - A Study of Recent WaterAid-Supported Programmes in Three Countries: Global Synthesis Report." WaterAid.
- FANSA, and WSSCC. 2015. "Leave No One Behind: Voices of Women, Adolescent Girls, Elderly and Disabled People, and Sanitation Workers." Sanitation and Hygiene in South Asia. Hyderabad, India.
- Fawcett, Ben, and Maggie Black. 2008. "Fawcett_B.pdf." In *ACCESS TO SANITATION AND SAFE WATER: GLOBAL PARTNERSHIPS AND LOCAL ACTIONS*. Accra, Ghana: WEDC.
- Fewtrell, Lorna, Rachel B. Kaufmann, David Kay, Wayne Enanoria, Laurence Haller, and John M. Colford. 2005. "Water, Sanitation, and Hygiene Interventions to Reduce Diarrhoea in Less Developed Countries: A Systematic Review and Meta-Analysis." *The Lancet Infectious Diseases* 5 (1): 42–52.
- Freeman, Matthew C., Leslie E. Greene, Robert Dreibelbis, Shadi Saboori, Richard Muga, Babette Brumback, and Richard Rheingans. 2011. "Assessing the Impact of a School-Based Water Treatment, Hygiene and Sanitation Programme on Pupil Absence in Nyanza Province, Kenya: A Cluster-Randomized Trial: Assessing the Impact of a School-Based WT, Hygiene and Sanitation Programme." *Tropical Medicine & International Health*, December, no – no. doi:10.1111/j.1365-3156.2011.02927.x.
- Garn, Joshua V., Leslie E. Greene, Robert Dreibelbis, Shadi Saboori, Richard D. Rheingans, and Matthew C. Freeman. 2013. "A Cluster-Randomized Trial Assessing the Impact of School Water, Sanitation and Hygiene Improvements on Pupil Enrolment and Gender Parity in Enrolment." *Journal of Water, Sanitation and Hygiene for Development* 3 (4): 592. doi:10.2166/washdev.2013.217.
- Graf, Jessica, Olivier Kayser, and Simon Brossard. 2014. "Designing the next Generation of Sanitation Businesses." Hystra.
- Gupta, A. 2013. "Daliya Jalao: Liberating Manual Scavengers and Moving Towards Total Sanitation." *Journal of Land and Rural Studies* 1 (2): 145–72. doi:10.1177/2321024913513363.
- Hartmann, Miriam, Suneeta Krishnan, Brent Rowe, Anushah Hossain, and Myles Elledge. 2015. "Gender-Responsive Sanitation Solutions in Urban India." http://www.rti.org/pubs/gender-responsive_sanitation_solutions_in_urban_india.pdf.
- Heijnen, Marieke, Oliver Cumming, Rachel Peletz, Gabrielle Ka-Seen Chan, Joe Brown, Kelly Baker, and Thomas Clasen. 2014. "Shared Sanitation versus Individual Household Latrines: A Systematic Review of Health Outcomes." Edited by Hamid Reza Baradaran. *PLoS ONE* 9 (4): e93300. doi:10.1371/journal.pone.0093300.
- Hossain, Rifat. 2015. "Monitoring Sanitation and Wastewater under SDGs." presented at the Expert Group Meeting on the indicator framework for the post-2015 development agenda, New York, NY, February 26. http://unstats.un.org/unsd/post-2015/activities/egm-on-indicator-framework/docs/EGM_Sanitation_revised_RH.pdf.
- Hulland, Kristyna R. S., Rachel P. Chase, Bethany A. Caruso, Rojalini Swain, Bismita Biswal, Krushna Chandra Sahoo, Pinaki Panigrahi, and Robert Dreibelbis. 2015. "Sanitation,

- Stress, and Life Stage: A Systematic Data Collection Study among Women in Odisha, India." Edited by Alexandra Kavushansky. *PLOS ONE* 10 (11): e0141883. doi:10.1371/journal.pone.0141883.
- Hutton, Guy, Laurence Haller, and Jamie Bartram. 2007. "Global Cost-Benefit Analysis of Water Supply and Sanitation Interventions." *Journal of Water and Health* 5 (4): 481. doi:10.2166/wh.2007.009.
- Isunju, John Bosco, Samuel Etajak, Beatrice Mwalwega, Richard Kimwaga, Peter Atekyereza, William Bazeyo, and John C. Ssempebwa. 2013. "Financing of Sanitation Services in the Slums of Kampala and Dar Es Salaam." *Health* 05 (04): 783–91. doi:10.4236/health.2013.54104.
- Jan Sahas Social Development Society. 2014. "Socio Economic Status of Women Manual Scavengers." New Delhi, India: Un Women.
- Jasper, Christian, Thanh-Tam Le, and Jamie Bartram. 2012. "Water and Sanitation in Schools: A Systematic Review of the Health and Educational Outcomes." *International Journal of Environmental Research and Public Health* 9 (12): 2772–87. doi:10.3390/ijerph9082772.
- Jenkins, Marion W., and Val Curtis. 2005. "Achieving the 'good Life': Why Some People Want Latrines in Rural Benin." *Social Science & Medicine* 61 (11): 2446–59. doi:10.1016/j.socscimed.2005.04.036.
- Jenkins, Marion W., and Beth Scott. 2007. "Behavioral Indicators of Household Decision-Making and Demand for Sanitation and Potential Gains from Social Marketing in Ghana." *Social Science & Medicine* 64 (12): 2427–42. doi:10.1016/j.socscimed.2007.03.010.
- JMP, ed. 2004. *Meeting the MDG Drinking Water and Sanitation Target: A Mid-Term Assessment of Progress*. Geneva, Switzerland: New York: World Health Organization; United Nations Children's Fund.
- . 2008. *Progress on Drinking Water and Sanitation: Special Focus on Sanitation*. New York, NY; Geneva: UNICEF: World Health Organization.
- . 2013. *Progress on Sanitation and Drinking-Water: 2013 Update*. <http://public.eblib.com/choice/publicfullrecord.aspx?p=1809069>.
- . 2014. *Progress on Drinking Water and Sanitation*.
- . 2015a. *Progress on Sanitation and Drinking Water*.
- . 2015b. "JMP Green Paper: Global Monitoring of Water, Sanitation and Hygiene Post-2015 (Zero Draft)."
- . 2016. "Improved and Unimproved Water Sources and Sanitation Facilities." *Improved and Unimproved Water Sources and Sanitation Facilities*. Accessed February 8. <http://www.wssinfo.org/definitions-methods/watsan-categories/>.
- Joshi, Deepa, Ben Fawcett, and Fouzia Mannan. 2011. "Health, Hygiene and Appropriate Sanitation: Experiences and Perceptions of the Urban Poor." *Environment and Urbanization* 23 (1): 91–111. doi:10.1177/0956247811398602.
- Joshi, Deepa, and Suzanne Ferron. 2007. "Manual Scavenging - a Life of Dignity?" *Waterlines* 26 (2): 24–27. doi:10.3362/0262-8104.2007.054.
- Joshi, Deepa, and Joy Morgan. 2007. "Pavement Dwellers' Sanitation Activities — Visible but Ignored." *Waterlines* 25 (3): 19–22. doi:10.3362/0262-8104.2007.007.
- Kapur, Avani, and Smriti Iyer. 2015. "Swachh Bharat Mission SBM (Gramin) Budget Briefs 2015-16." *Budget Briefs* 7 (5). http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2574160.
- Kar, Kamal, and Robert Chambers. 2008. *Handbook on Community-Led Total Sanitation*. London: Plan UK.
- Kar, Kamal, and Kirsty Milward. 2011. "Digging In, Spreading out and Growing up: Introducing CLTS in Africa." *IDS Practice Papers* 2011 (8): 01–64.
- Khanna, Tina, and Madhumita Das. 2015. "Why Gender Matters in the Solution towards Safe Sanitation? Reflections from Rural India." *Global Public Health*, August, 1–17. doi:10.1080/17441692.2015.1062905.
- Kothari, Miloon. 2005. "Report of the Special Rapporteur on Adequate Housing as a Component of the Right to an Adequate Standard of Living." E/CN.4/2005/48. Economic, Social and Cultural Rights. UN, Commission on Human Rights.
- Kumar, Vimal. 2014. "Scavenger Community at the Crossroads: Reflection on." https://www.researchgate.net/profile/Vimal_Kumar17/publication/266616973_Scavenger_Community_at_the_Crossroads_Reflection_on_State_Intervention_Welfare_and_Abstuse_Welfarism/links/543594220cf2dc341db2b386.pdf.
- Kvarnström, E., J. McConville, P. Bracken, M. Johansson, and M. Fogde. 2011. "The Sanitation Ladder a Need for a Revamp?" *Journal of Water, Sanitation and Hygiene for Development* 1 (1): 3. doi:10.2166/washdev.2011.014.
- Kwiringira, Japheth, Peter Atekyereza, Charles Niwagaba, and Isabel Günther. 2014. "Gender Variations in Access, Choice to Use and Cleaning of Shared Latrines; Experiences from Kampala Slums, Uganda." *BMC Public Health* 14 (1): 1–11. doi:10.1186/1471-2458-14-1180.
- Laskowski, Silke Ruth. 2012. "Time for Implementation of the Right to Water and Sanitation—e.g. The Missing Implementation in Germany." *Journal for European Environmental & Planning Law* 9 (2): 164–79. doi:10.1163/187601012X639835.
- Loewe, Markus, and Nicole Rippin. 2016. "Translating an Ambitious Vision into Global Transformation." Accessed February 9. http://www.die-gdi.de/uploads/media/DP_7.2015.pdf.
- Long, Jeanne L., Bethany A. Caruso, Matthew C. Freeman, Maribel Mamani, Gladys Camacho, and Koenraad Vancraeynest. 2015. "Developing Games as a Qualitative Method for Researching Menstrual Hygiene Management in Rural Bolivia." *Waterlines* 34 (1): 68–78. doi:10.3362/1756-3488.2015.007.
- Luh, Jeanne, Rachel Baum, and Jamie Bartram. 2013. "Equity in Water and Sanitation: Developing an Index to Measure

- Progressive Realization of the Human Right." *International Journal of Hygiene and Environmental Health* 216 (6): 662–71. doi:10.1016/j.ijheh.2012.12.007.
- Mahon, Thérèse, and Maria Fernandes. 2010. Menstrual Hygiene in South Asia: A Neglected Issue for WASH (water, Sanitation and Hygiene) Programmes. *Gender & Development* 18 (1): 99–113. doi:10.1080/13552071003600083.
- Mander, Harsh. 2014. *Resource Handbook for Ending Manual Scavenging*. New Delhi: ILO.
- Mangubhai, Jayshree P., and Chiara Capraro. 2015. "Leave No One Behind" and the Challenge of Intersectionality: Christian Aid's Experience of Working with Single and Dalit Women in India." *Gender & Development* 23 (2): 261–77. doi:10.1080/13552074.2015.1054206.
- Mara, Duncan, Jon Lane, Beth Scott, and David Trouba. 2010. "Sanitation and Health." *PLoS Medicine* 7 (11): e1000363. doi:10.1371/journal.pmed.1000363.
- McFarlane, Colin, Renu Desai, and Steve Graham. 2014. "Informal Urban Sanitation: Everyday Life, Poverty, and Comparison." *Annals of the Association of American Geographers* 104 (5): 989–1011. doi:10.1080/00045608.2014.923718.
- McMahon, Shannon A., Peter J. Winch, Bethany A. Caruso, Alfredo F. Obure, Emily A. Ogotu, Imelda A. Ochari, and Richard D. Rheingans. 2011. "The Girl with Her Period Is the One to Hang Her head" Reflections on Menstrual Management among Schoolgirls in Rural Kenya." *BMC International Health and Human Rights* 11 (1): 7.
- Mehta, Lyla, and Synne Movik. 2010. "The Dynamics and Sustainability of Community-Led Total Sanitation (CLTS): Mapping Challenges and Pathways." <http://opendocs.ids.ac.uk/opendocs/handle/123456789/2280>.
- Ministry of Social Justice and Empowerment. 2013. "The Prohibition of Employment as Manual Scavengers and Their Rehabilitation Bill." 32. New Delhi, India: Government of India.
- Mitlin, Diana. 2015. "Will Urban Sanitation 'leave No One Behind'?" *Environment and Urbanization* 27 (2): 365–70.
- Moriarty, P., K.B. Nyarko, B. Dwumfour-Asare, E. Appiah-Effah, and A. Obuobisa-Darko. 2011. "Life-Cycle Costs Approach for WASH Services That Last: Life-Cycle Costs in Ghana." Briefing Note 4. Access to Water Services in Rural Areas and Small Towns. IRC International Water and Sanitation Centre.
- Murray, A., and I. Ray. 2010. "Commentary: Back-End Users: The Unrecognized Stakeholders in Demand-Driven Sanitation." *Journal of Planning Education and Research* 30 (1): 94–102. doi:10.1177/0739456X10369800.
- Musyoki, Samuel Musembi. 2010. "Scaling up CLTS in Kenya: Opportunities, Challenges and Lessons." In *Tales of Shit: Community-Led Total Sanitation in Africa*. Vol. 61. IIED. http://books.google.com/books?hl=en&lr=&id=M8_R2wnfgm4C&oi=fnd&pg=PP1&dq=%22Angela+Milligan+and+Holly%22+%22Deiri,+John+Devavaram,+Charlotte%22+%22Kumar+Ph+nuyal,+Giacomo+Rambaldi,%22+%22the+importance+of+analysing%22+%22Scaling+up+CLTS+in+sub-Saharan%22+%22A+Wolfer+and+Robin+W.%22+&ots=T9RjURGWVv&sig=ohHyh76Gh6YR4TCUk1TUbkVj8.
- National Commission for Safai Karamcharis. 1995. "Report of the National Commission for Safai Karamcharis." 11061/1/95-NCSK. New Delhi, India: Government of India.
- Navsarjan Trust (India), FEDO (Nepal), and International Dalit Solidarity Network. 2013. "The Situation of Dalit Rural Women."
- Nelson, Kara L., and Ashley Murray. 2008. "Sanitation for Unserved Populations: Technologies, Implementation Challenges, and Opportunities." *Annual Review of Environment and Resources* 33 (1): 119–51. doi:10.1146/annurev.environ.33.022007.145142.
- O'Reilly, Kathleen, Elizabeth Louis, Evan Thomas, and Antara Sinha. 2015. "Combining Sensor Monitoring and Ethnography to Evaluate Household Latrine Usage in Rural India." *Journal of Water, Sanitation and Hygiene for Development* 5 (3): 426. doi:10.2166/washdev.2015.155.
- Panda, Gyana Ranjan, and Trisha Agarwala. 2012. "Gender Responsive Budget Analysis in Water and Sanitation Services in the Resettlement Colonies of Delhi." *Available at SSRN 2119016*. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2119016.
- Patel, Sheela, and The SPARC Team. 2015. "The 20-Year Sanitation Partnership of Mumbai and the Indian Alliance." *Environment and Urbanization*, 0956247815569698.
- Patil, Sumeet, Benjamin F. Arnold, Alicia Salvatore, Bertha Briceno, John M. Colford Jr, and Paul Gertler. 2013. "A Randomized, Controlled Study of a Rural Sanitation Behavior Change Program in Madhya Pradesh, India." 6702. Policy Research Working Paper. The World Bank.
- Pattanayak, Subhrendu K, Jui-Chen Yang, Katherine L Dickinson, Christine Poulos, Sumeet R Patil, Ranjan K Mallick, Jonathan L Blitstein, and Purujit Praharaj. 2009. "Shame or Subsidy Revisited: Social Mobilization for Sanitation in Orissa, India." *Bulletin of the World Health Organization* 87 (8): 580–87. doi:10.2471/BLT.08.057422.
- Peal, Andy, Barbara Evans, Isabel Blackett, Peter Hawkins, and Chris Heymans. 2014. "Fecal Sludge Management: A Comparative Analysis of 12 Cities." *Journal of Water, Sanitation and Hygiene for Development* 4 (4): 563. doi:10.2166/washdev.2014.026.
- Pickering, Amy J., Habiba Djebbari, Carolina Lopez, Massa Coulibaly, and Maria Laura Alzua. 2015. "Effect of a Community-Led Sanitation Intervention on Child Diarrhoea and Child Growth in Rural Mali: A Cluster-Randomised Controlled Trial." *The Lancet Global Health* 3 (11): e701–11.
- Rajaraman, Divya, Sandra M. Travasso, and S. Jody Heymann. 2013. "A Qualitative Study of Access to Sanitation amongst Low-Income Working Women in Bangalore, India." *Journal of Water, Sanitation and Hygiene for Development* 3 (3): 432. doi:10.2166/washdev.2013.114.
- Rashtriya Garima Abhiyan. 2012. "Analysis and Recommendations in the Context of The Prohibition of

- Employment as Manual Scavengers and Their Rehabilitation Bill, 2012." Rashtriya Garima Abhiyan.
- . 2013. "Violence against Manual Scavenger Dalit Women in India." Rashtriya Garima Abhiyan.
- Ray, Isha. 2007. "Women, Water, and Development." *Annual Review of Environment and Resources* 32 (1): 421–49. doi:10.1146/annurev.energy.32.041806.143704.
- Rheingans, Richard, Oliver Cumming, John Anderson, and Julia Showalter. 2012. "Estimating Inequities in Sanitation-Related Disease Burden and Estimating the Potential Impacts of pro-Poor Targeting." *SHARE: Sanitation and Hygiene Applied Research for Equity, London*. http://www.sswm.info/sites/default/files/reference_attachments/RHEINGANS%202012%20Estimating%20Inequities%20in%20Sanitation%20Related%20Disease%20Burden.pdf.
- Roose, Sharon, Tom Rankin, and Sue Cavill. 2015. "Breaking the Next Taboo: Menstrual Hygiene within CLTS." Issue 06. Frontiers of CLTS: Innovations and Insights. CLTS Knowledge Hub at the Institute of Development Studies.
- Routray, Parimita, Wolf-Peter Schmidt, Sophie Boisson, Thomas Clasen, and Marion W. Jenkins. 2015. "Socio-Cultural and Behavioural Factors Constraining Latrine Adoption in Rural Coastal Odisha: An Exploratory Qualitative Study." *BMC Public Health* 15 (1). doi:10.1186/s12889-015-2206-3.
- Roy, Ananya. 2005. "Urban Informality: Toward an Epistemology of Planning." *Journal of the American Planning Association* 71 (2): 147–58. doi:10.1080/01944360508976689.
- Rukuni, Samuel. 2010. "Challenging Mindsets: CLTS and Government Policy in Zimbabwe." In *Tales of Shit: Community-Led Total Sanitation in Africa*. Vol. 61. IIED. http://books.google.com/books?hl=en&lr=&id=M8_R2wnfgm4C&oi=fnd&pg=PP1&dq=%22Angela+Milligan+and+Holly%22+%22Deiri,+John+Devavaram,+Charlotte%22+%22Kumar+Phnuyal,+Giacomo+Rambaldi,%22+%22the+importance+of+analysing%22+%22Scaling+up+CLTS+in+sub-Saharan%22+%22A.+Wolfer+and+Robin+W.%22+&ots=T9RjURGWVv&sig=ohHyh76Gh6YR4TCUk1TUbKVjJn8.
- Sahoo, Krushna Chandra, Kristyna R.S. Hulland, Bethany A. Caruso, Rojalin Swain, Matthew C. Freeman, Pinaki Panigrahi, and Robert Dreibelbis. 2015. "Sanitation-Related Psychosocial Stress: A Grounded Theory Study of Women across the Life-Course in Odisha, India." *Social Science & Medicine* 139 (August): 80–89. doi:10.1016/j.socscimed.2015.06.031.
- Saikia, Sailajananda. 2014. "Discrimination of Fundamental Rights: A Critical Review of the Present Caste Based Status of Dalit's in India." *Journal of Social Welfare and Human Rights* 2 (1).
- Satterthwaite, Meg, and Inga Winkler. 2012. "JMP Working Group on Equity and Non-Discrimination Final Report." JMP.
- Scott, Joan W. 1986. "Gender: A Useful Category of Historical Analysis." *The American Historical Review* 91 (5): 1053. doi:10.2307/1864376.
- Sepúlveda Cardona, Magdalena, and Catarina de Albuquerque. 2010. Joint Report of the Independent Expert on the Question of Human Rights and Extreme Poverty, Magdalena Sepúlveda Cardona, and the Independent Expert on the Issue of Human Rights Obligations Related to Access to Safe Drinking Water and Sanitation, Catarina de Albuquerque. A/HRC/15/55. UN Human Rights Council.
- Shah, Arpit, Jithamithra Thathachari, Rishi Agarwal, and Ashish Karamchandani. 2013. "Market Led Approach to Rural Sanitation." Monitor Deloitte.
- Shahid, M. 2015. "Manual Scavenging: Issues of Caste, Culture and Violence." *Social Change* 45 (2): 242–55. doi:10.1177/0049085715574187.
- Sommer, Marni. 2010. "Where the Education System and Women's Bodies Collide: The Social and Health Impact of Girls' Experiences of Menstruation and Schooling in Tanzania." *Journal of Adolescence* 33 (4): 521–29. doi:10.1016/j.adolescence.2009.03.008.
- . 2012. "Menstrual Hygiene Management in Humanitarian Emergencies: Gaps and Recommendations." *Waterlines* 31 (1): 83–104. doi:10.3362/1756-3488.2012.008.
- Sommer, Marni, Suzanne Ferron, Sue Cavill, and Sarah House. 2014. "Violence, Gender and WASH: Spurring Action on a Complex, under-Documented and Sensitive Topic." *Environment and Urbanization*, 0956247814564528.
- Sommer, Marni, Jennifer S. Hirsch, Constance Nathanson, and Richard G. Parker. 2015. "Comfortably, Safely, and Without Shame: Defining Menstrual Hygiene Management as a Public Health Issue." *American Journal of Public Health* 105 (7): 1302–11.
- Sommer, Marni, Marianne Kjellén, and Chibesa Pensulo. 2013. Girls and Women's Unmet Needs for Menstrual Hygiene Management (MHM): The Interactions between MHM and Sanitation Systems in Low-Income Countries. *Journal of Water, Sanitation and Hygiene for Development* 3 (3): 283. doi:10.2166/washdev.2013.101.
- Spears, Dean, Arabinda Ghosh, and Oliver Cumming. 2013. "Open Defecation and Childhood Stunting in India: An Ecological Analysis of New Data from 112 Districts." Edited by Vishnu Chaturvedi. *PLoS ONE* 8 (9): e73784. doi:10.1371/journal.pone.0073784.
- Sumpter, Colin, and Belen Torondel. 2013. "A Systematic Review of the Health and Social Effects of Menstrual Hygiene Management." Edited by Hamid Reza Baradaran. *PLoS ONE* 8 (4): e62004. doi:10.1371/journal.pone.0062004.
- Tilley, E., S. Bieri, and P. Kohler. 2013. "Sanitation in Developing Countries: A Review through a Gender Lens." *Journal of Water, Sanitation and Hygiene for Development* 3 (3): 298. doi:10.2166/washdev.2013.090.
- UN. 2010a. "The Right to Water." Fact Sheet 35. Switzerland: UNHRC.
- . 2010b. "General Assembly Adopts Resolution Recognizing Access to Clean Water, Sanitation as Human Right, by Recorded Vote of 122 in Favour, None Against, 41 Abstentions." UN. <http://www.un.org/press/en/2010/ga10967.doc.htm>.
- . 2012. "Gender Statistics." E/CN.3/2013/10. Economic and Social Council. Statistical Commission.

- . 2016. “Inter-Agency Expert Group on SDG Indicators.” *Sustainable Development Goals*. <http://unstats.un.org/sdgs/iaeg-sdgs/>.
- . 2016. “Sustainable Development Goals.” *Sustainable Development Goals*. Accessed February 8. <https://sustainabledevelopment.un.org/index.php?menu=1300>.
- UNDP. 2006. *Human Development Report 2006: Beyond Scarcity: Power, Poverty and the Global Water Crisis*. Basingstoke; New York: Palgrave Macmillan.
- UN General Assembly. 2015. “General Assembly Adopts 64 Third Committee Texts Covering Issues Including Migrants, Children’s Rights, Human Rights Defenders.” December 17. <http://www.un.org/press/en/2015/ga11745.doc.htm>.
- UNICEF. 2013. *Community-Led Total Sanitation in East Asia and Pacific*. Bangkok, Thailand: UNICEF.
- UN Women. 2014. *Gender Equality and Sustainable Development*.
- . 2015. “Monitoring Gender Equality and the Empowerment of Women and Girls in the 2030 Agenda for Sustainable Development: Opportunities and Challenges.” UN Women.
- van Koppen, Barbara, Barbara Schreiner, and Eiman Karar. 2010. “Mainstreaming Gender in Water Management in South Africa.” In *Transforming Water Management in South Africa*, 203–14. Springer. http://link.springer.com/chapter/10.1007/978-90-481-9367-7_10.
- Waddington, Hugh, and Birte Snilstveit. 2009. “Effectiveness and Sustainability of Water, Sanitation, and Hygiene Interventions in Combating Diarrhoea.” *Journal of Development Effectiveness* 1 (3): 295–335. doi:10.1080/19439340903141175.
- Walters, Vicky. 2014. “Urban Homelessness and the Right to Water and Sanitation: Experiences from India’s Cities.” *Water Policy* 16 (4): 755. doi:10.2166/wp.2014.164.
- WaterAid. 2016. “Annual Reports - Who We Are - WaterAid America.” *Annual Reports*. Accessed February 8. <http://www.wateraid.org/us/who-we-are/annual-reports>.
- Water Utility Partnership. 2003. “Better Water and Sanitation for the Urban Poor: Good Practice from Sub-Saharan Africa.” 43101. Kenya. <http://www.hydroconseil.com/attachments/article/WUP%205%20Better%20water%20and%20sanitation%20for%20the%20urban%20Poor.pdf>.
- Winkler, Inga T., and Virginia Roaf. 2014. “Taking the Bloody Linen out of the Closet: Menstrual Hygiene as a Priority for Achieving Gender Equality.” *Cardozo JL & Gender* 21: 1.
- Wolf, Jennyfer, Annette Prüss-Ustün, Oliver Cumming, Jamie Bartram, Sophie Bonjour, Sandy Cairncross, Thomas Clasen, et al. 2014. Systematic Review: Assessing the Impact of Drinking Water and Sanitation on Diarrhoeal Disease in Low- and Middle-Income Settings: Systematic Review and Meta-Regression. *Tropical Medicine & International Health* 19 (8): 928–42. doi:10.1111/tmi.12331.
- WSSCC. 2015. “Menstrual Hygiene Management – WSSCC/ UN Women Studies on Behaviour and Practices in Senegal and Cameroon.” WSSCC. Accessed December 21. <http://wsscc.org/2015/03/09/menstrual-hygiene-management-wssccun-women-studies-on-behaviour-and-practices-in-senegal-and-cameroon/>.
- WSSCC, and UN Women. n.d. “Menstrual Hygiene Management in the Regions of Kye-Ossi and Bamoungoum, Cameroon.” WSSCC & UN Women.
- . 2015. “Menstrual Hygiene Management: Behaviour and Practices in the Kedougou Region, Senegal.” WSSCC & UN Women.
- Yasmin, Shamima, Nirmalya Manna, Sarmila Mallik, Ashfaque Ahmed, and Baisakhi Paria. 2013. “Menstrual Hygiene among Adolescent School Students: An in-Depth Cross-Sectional Study in an Urban Community of West Bengal, India.” *IOSR Journal of Dental and Medical Sciences* 5 (6): 22–26.
- Yates, Maylynn. 1985. “Septic Tank Density and Ground-Water Contamination.” *Groundwater* 23 (5).

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