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**LOCAL ACTION WITH INTERNATIONAL COOPERATION TO IMPROVE AND
SUSTAIN WATER, SANITATION AND HYGIENE SERVICES**

**Taking women's 'different' bodily functions into account,
particularly menstruation in sanitation provision**

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Whilst over two billion people lack adequate toilet provision, water supply, and sanitation, women are particularly badly affected. Women have fewer facilities to start with, but more toileting needs caused by biological differences particularly menstruation, pregnancy, and menopause. For example, 50% of school girls in Africa leave school when menstruation starts because of lack of suitable school toilets. Over 50% of the world's population is urbanized and of those, over 50% of urban dwellers live in shanty towns and unregulated settlements, most of which lack adequate sanitation provision, especially for women and girls travelling by public transport, working away from home, or going to school. Comparisons are made with the toilet situation in Western countries. Toilet provision is one of the last frontiers of gender inequality. Female toilet provision needs to be recognised as a key component of urban planning policy, in order to create sustainable, accessible and equitable cities.

What is the problem?

Addressing the issues of sanitation and drainage is a key component of the developing world agenda, along with sustainability policy and world health. But, much of the policy output appears surprising non-specific, set at too high a level, and concerned with generic issues, related to generalised images of the world's population. In particular, there is little disaggregation from a gender perspective, as to the specific needs of, and implications for women, as against men. Furthermore international initiatives, policy statements and research about sanitation tend to major on 'water' and even when discussing water-borne disease, rather than the specifics of human bodily excretion and its effect on water courses. Whilst faecal and urinary matters may sometimes be discussed within the context of human waste, menstruation barely seems to exist as an issue. Yet women comprise half the world's population and at any one time, around a quarter of women of childbearing age will be menstruating. So there are several levels of neglect nested within the field of sanitation, namely an overall lack of recognition of the importance of toilet provision for women as well as men, but within that context, a failure to consider the specific needs of women, and in particular a complete lacuna regarding all matters menstrual. But this is not 'just' a developing world issue, we need to look at overarching international attitudes to toilet provision and design. Many of the negative attitudes towards toilet provision, and especially under-provision for women, originate in the West and have been exported through both past colonisation and modern development agendas. In particular the prevailing historical influence of developed countries, especially Western Europe from colonial times, casts its patriarchal shadow over the rest of the world. This still shapes attitudes towards the levels of toilet provision for women and men, the design of toilet facilities and the overall cultural awkwardness about addressing women's intimate toilet needs which is still found in the sanitation, engineering and development professions.

The historical roots of under-provision

The problem of unequal provision for women is widespread within western countries, and arguably has been transmitted from the developed to the developing world. For example, in England official government toilet regulations have historically, *by law*, given more provision to men than women, as stipulated originally under the 1875 Public Health Act, and subsequently carried forward into modern-day British Standards guidance on sanitary installations (BSI, 2006). Industrial growth and prosperity had led to the building of

Victorian towns and cities, brimming with a sense of civic pride, furnished with a range of public works and philanthropic amenities, including schools, hospitals, libraries, sewage and drainage and works, and splendid public toilets. The only trouble was that most of the engineers, architects and decision-makers were male, and many manifested little understanding or knowledge of women's needs.

When researching the issues of concern to ordinary people in urban areas the issue of lack of public toilet provision and indeed toilet closure became very prominent in people's replies particularly amongst women, who need public toilets more than men but have fewer places to go (Penner, 2013). Women are the ones who are more likely to be out and about in the day time, travelling on public transport more than men, and often accompanied by children or by elderly and disabled relatives (Greed, 2003). It is well established from research that women take twice as long to use the toilet than men, because of biological considerations, and also because of the need to go into a cubicle and to deal with more clothing than men (Kira, 1975). Nevertheless, typically women are provided with less than half the provision for men. Even if equal floor space is provided for the women's and men's side of a public toilet block, men are likely to have twice the number of 'places to pee' because a whole row of urinals can be provided in the same space where only a few cubicles could be fitted in. Under the 1936 Public Health Act local authorities could charge for the use of public toilets, 'except for urinals' which meant for many years that women had to pay 'to spend a penny' whereas men did not. Following so-called equalities legislation in recent years men can also be charged now too (a strange form of equality) but still benefit from more 'places to pee' than women, including pubs and clubs.

The under provision of toilets for women led to the toilet queue, and this was to have international consequences. As Michelle Barkley (fellow member of the BS6865 toilets committee) says, 'we exported gender inequality and toilet queues to the rest of the world', as the British Empire and colonisation grew apace, and the subsequent British Commonwealth is still influential as it covers 2 billion people and 20% of the world's land surface. Even today Commonwealth countries have until relatively recently had the same building regulations, toilet standards and codes as Britain broadly based on the British Standards Institute requirements in BS6465 on 'Sanitary Installations' (BSI, 2006). For example, Malaysia (previously Malaya) has had to update their toilet standards and increase equality for women, in order to try and overcome these problems. Of course in some countries there are pre-existing cultural and religious attitudes too that have resulted in toilet discrimination against women, but patriarchal colonial toilet standards and regulations often made the situation worse. In recent years in the UK we have sought to change the male-bias in the British toilet standards. We have now created a completely new British Standard specifically on Public Toilet Provision (BSI, 2010). Likewise, in North America around 20 states of the USA now have 'potty parity' (equal toilet provision for men and women) and attempts are being made to make this a federal-level requirement to save women having to stand in line (Anthony and Dufresne, 2007).

The international development context

The Millennium Development Goals

The toilet problems of the developed countries pale into insignificance compared with the situation in many developing countries which lack even the most basic toilet facilities. Over two billion people (a third of the world's population) lack adequate toilet provision (Black and Fawcett, 2008). Yet, the toilet issue is strangely disconnected from the mainstream development agenda. Research has demonstrated that public toilet provision constitutes the vital, missing link that would enable the creation of sustainable, accessible, equitable and inclusive cities (Hanson et al, 2007; Greed, 2015). The original definition of sustainability included environmental sustainability, but also social equality, health, well-being and economic viability that is Place, People and Prosperity and toilet provision incorporates all these issues. The provision of adequate toilets, especially for women, is fundamental to the achievement of the Millennium Development Goals (MDGs). In particular Goal 3: 'Promote gender equality and empower women', and Goal 7: 'Ensure environmental sustainability' as elaborated in 7c 'halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation' have major implications for the provision of toilets for women.

The Sustainable Development Goals

Since the MDGs have fallen behind schedule, a new set of Sustainable Development Goals (SDGs) was introduced in 2015. It is to be welcomed that Target 6 of the SDGs, mentions sanitation and gender issues together, as sub-section 6.2 states that by 2030 the aim is, 'to 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 one needs to be cautious as the emphasis appears to be upon 'defecation problems' rather than upon the more human issue of 'toilet provision'. Nevertheless there is a far greater awareness of gendered issues, but it remains to be seen whether such enlightenment will be carried forward into actual implementation.

International public health implications

Toilet provision is not a luxury but a necessity for achieving world health and development. Over 50% of the world's population is now urbanised, but a third of that number live in slums, shanty towns and unofficial settlements lacking the basics in terms of water and sanitation (Burdett and Sudjic, 2012). Lack of provision has social and economic implications, but the solutions are not simple as it is often political, regulatory and market factors that limit provision. For example, in high density mega-cities of South America, it is not necessarily lack of water supply or mains drainage that prevents everyone from having toilet provision and running water in their homes. Rather it is a matter of being able to afford to be connected to the system, not how close one is to the pipes, as in many countries you have to pay for privatised 'public' services (Mara, 2006).

Why bother to do anything? Everyone, not just the poor, is affected by toilet inequality. In highly urbanised situations, as in the South American mega-cities, rich and poor often live in close proximity, luxury apartments across the road from shanty town developments. Flies and other vectors are no respecters of class or income and so rich people could be 'eating other people's shit', as Jack Sim founder of the World Toilet Organisation has put it, as the insects fly over from the cess pits of the shanty towns and land on the food plates of the rich (Sim, 2012). Equally, all sorts of classic killer diseases, rampant in the developing world are water-borne diseases. They are transmitted by faecal contamination of water sources, exacerbated by poor drainage, standing water and simply locating the toilet in the wrong place upstream from the main drinking water source (Greed, 2006). 80% of the children have worms and intestinal bugs and 1.5 billion people worldwide have round worms alone (Roma and Pugh, 2012). Overall much depends upon cultural attitudes too. More people in the world have mobile phones than toilets, but toilets are not glamorous consumer items like phones or designer handbags!

Women's specific toilet needs: menstruation

Whilst the health implications of poor sanitation in respect of urination and defecation are recognised, little attention is given to the third excretory factor: menstruation. So we still need to give greater attention to the specific needs of women. Girls in many developing countries have to stay away from school every month when they are menstruating because of lack of school toilets. 50% of girls in Africa do not continue with school because of lack of toilets. Around a quarter of all women of child-bearing age will be menstruating. The lack of toilet facilities and adequate washing and disposal facilities, during their menstrual period, along with lack of privacy contributes to girls leaving school (Jewitt and Ryley, 2014). Additional problems are the unequal level of provision of toilets for school girls: indeed often there are no separate toilets for girls and women. Men can go anywhere whereas women are always vulnerable to potential humiliation, loss of reputation, rape, and attack from animals and snakes attracted by menstrual odours. It may be too far to go home, and if they so set off they may give up and not return to school the same day.

So provision is fundamental to achieving all the other equality regarding achieving education and future employment objectives aimed at women. Significantly, in spite of this specifically gendered problem arising at secondary school level, the MDGs only referred to increasing gender equality at primary school level (Goal 2) and ignore menstruation completely, whilst the SDGs are still vague on this matter. The gradual progression towards open discussion of menstruation at toilet conferences is a real breakthrough, especially at male-dominated, international conferences, where scientific and technological agendas can squeeze out more prosaic social considerations. Women are disadvantaged if their needs are not discussed by toilet experts, and male needs are taken as the 'average' or 'the norm' and pandering to women's needs are seen as an extra expense or luxury. Indeed lack of data is itself a sign of discrimination, rendering women invisible. But we cannot assume that the solution to all the problems is a western-style one. For example, if every woman used western sanitary pads and tampons it would create such a pile of waste for disposal that it would be far higher than the disposable nappy mountain. Washable pads that can be recycled are essential, especially since many girls and women simply cannot afford western products, and the sewerage system cannot cope with them either. But washing facilities are often scarce as there is limited water supply. Indeed water-based flush systems are inappropriate and expensive for many localities so alternative 'dry' toilet systems are required. But one must also be wary of other ostensibly more environmental solutions, as many

women will not use shared composting toilets if they fear ‘evidence’ of their menstruation, such as sanitary protection pads, can still be seen by the next user. Likewise the Moon cup, which is inserted to collect the menses blood inside the woman, has been heralded as the ultimate green sustainable solution. But in many cultures inserting tampons is forbidden because of virginity and purity laws. Many millions of women who have experienced Female Genital Mutilation (FGM) are unable to use internal protection in any case. It would seem that home-made, washable cloth napkins and towels are a better solution, but even then some girls and women are too poor even to use this solution.

Toilet design: gender, age and disability

Most of the world sits rather than squats to use the toilet. The sit/squat debate is always a major issue at world toilet conferences. Likewise most of the world’s population use water not toilet paper to clean themselves after defecating, and most of the world’s population cannot afford such luxuries as paper. But it is often forgotten that women need to sit or squat to urinate, whereas men usually stand to urinate. Studies have long shown that around 80% of women ‘hover’ over the seat to urinate when in public toilets, whereas they prefer to sit when using their toilet at home. Women are concerned about ‘catching germs from the toilet seat’ in public facilities. Both men and women view public toilets as sites of crime, dirt, disease, sex and disorder and are often wary or judgmental of other toilet users (Greed, 2016). But, hovering contributes to residual urine retention, as the bladder cannot empty properly and thus to the development of continence problems and weakened pelvic floor (Greed, 2003). Research has found that crouching over the bowl reduces urine flow by 21% and increases by 150% the chances of residual urine remaining in the bladder (Parazinni et al, 2003). There is much debate about the best position, for women, to urinate, and but the squatting position (as in Eastern toilets) is probably the most natural and effective.

‘But why can’t a woman be more like a man?’ There have been various attempts to design a female urinal, or urinette, such as the Lady Pee. They have proved unpopular with women and are problematic in an ageing society and also difficult for women who are pregnant, menstruating and generally problematic for women wearing jeans or trousers. The main reason such contraptions have been recommended is that more can be fitted into the same space as just a few cubicles, thus reducing queuing time. But the real answer is simply to provide more toilet cubicles for women, and this is particularly important with an ageing population. As people get older their toilet habits may change, with increased frequency of urination, along with various mobility issues, all of which present new design challenges. Older women in particular may suffer various forms of incontinence around the menopause (Bhakta et al, 2014).

Public toilet cubicles are usually very badly designed. For example in Britain, narrow cubicles and inward opening doors restrict access, and it could only be front-facing urinators (men) that could design such small cubicles! Women have to get into the cubicle, close the door and then do a three point turn to sit on (or hover over) the toilet seat. The low priority is given to menstruation is manifested by the inclusion of a plastic disposal bin as an afterthought. The bin is often squashed, unhygienically up against the edge of the toilet seat. There is a whole category of other toilet issues and debates regarding the provision of toilets for people with disabilities (Greed, 2003) regarding size of cubicles, quite ‘who’ is entitled to use them, and also the issue of providing for all the people who do not ‘fit’ into standard cubicles but are not technically disabled, including women with pushchairs, larger people, and increasingly transgender users. But in many developing countries, the majority of the population are under the age of 30, and the ageing problem has not reached them yet, and they are more concerned about achieving rudimentary, basic, toilet provision. Likewise in many developing countries there are fewer older people who are disabled as survival rates are lower. Children with disabilities have particular problems accessing latrines, with girls having added problems regarding privacy and personal safety, for example, in Pakistan (UNICEF, 2014).

The way forward: learning points

As a basic principle, it is essential that gender considerations are taken into account at the highest decision-making level within sanitation and drainage authorities. The differences between women and men need to be acknowledged and accommodated for, in terms of toilet design, levels of provision and attention to the specific bodily functions of women. But gender must not be treated as an abstract disembodied concept, it must be related to the realities of the physiological differences between men and women, not least in terms of how they urinate, but also in relation to the specific needs created by menstruation, pregnancy, breast feeding, incontinence, inter alia. Many of these issues have still not been adequately taken on board in the West, and if you want to know the true position of women in society, look at the length of the queue for the ‘Ladies’. Rather than looking to the West, the East might provide better guidance and examples on toilet

provision that might be applied in the developing world. There has been a restroom revolution in many of the emerging Tiger Economies of the Far East, many going from a ‘hole in the ground’ society, to a high-tech toilet society in one generation. But many of the toilets within these countries are still squat toilets rather than sit toilets, albeit linked to advanced environmentally sustainable waste disposal systems, and well maintained, frequently cleaned and respected by the local population. The World Toilet Organisation and its sister organisations, including the Japan Toilet Association and Taiwan Toilet Association, and similar organisations in China, Malaysia, Singapore and Malaysia have all taken toilet provision very seriously, and their governments have invested strongly in toilet provision and new infrastructure (Miyashita 1996). In many of these countries female to male ratios of toilet provision in public toilets are on the basis of 2:1 in favour of women, even 3:1 in some tourist areas in Japan. There is also greater attention given to the specific needs of women and those with disabilities. They see toilet provision as a sign of progress, modernity and science, as well as embodying civic pride and civilised principles.

In contrast in the UK, as a result of the financial crises and government cut backs the inherited sewerage infrastructure is crumbling and the value of ‘social goods’ such as toilets and other local facilities is no longer understood in terms of creating a socially, environmentally and economically sustainable society. Our attitude to human waste is negative and uneconomic. It is very strange to throw away some of the most valuable resources on the planet, urine and faeces, which for centuries were greatly valued as fertiliser, building materials, fuel and the source of all sorts of useful chemicals. But this is changing, for example at Bristol, there is a project underway to generate electricity from urine, using simple technologies, which might be used in African villages, yielding electricity for lighting and clean water (Ieropoulos, 2011). For the future there are so many possibilities once society gets over its traditional negative attitudes towards toilets, dirt, human waste, especially menstruation, and, for that matter, women. Therefore to conclude there is a need for joined up thinking, to take into account environmental, economic, and social (including gender) factors to create a sustainable sanitation future.

Notes

This paper seeks to raise awareness of menstruation within sanitation circles, but a fuller more detailed and research related account is given in Greed 2016. This paper is accompanied by a PowerPoint which illustrates with examples many of the problems and principles discussed in this paper.

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