

Water, Water Everywhere, But Not a Drop to Drink

PANI POLITICS (WATER POLITICS) IN RURAL BANGLADESH

FARHANA SULTANA

King's College London, UK

Abstract

This article looks at the nature of water politics (*pani politics*) in the context of arsenic contamination of drinking water in rural Bangladesh. *Pani politics* is found to be a product of intersecting similarities and differences among women and men, where water comes to have material and symbolic power that people can exercise, which can lead to conflicts, marginalization and suffering vis-à-vis water. Gendered location makes a difference in arsenic contaminated areas, where gender differentiated impacts are being observed, in terms of water access, control and ramifications of water poisoning. However, gender has to be understood as intersecting with other axes of differentiation such as social class, age and geographical location, to understand the nuances and multiple ways that arsenic poisoning and water hardship affect lives of men and women in different ways. Attention to such differences highlights the variations in gendered hardships, labor, rights and resources vis-à-vis water, and the way that everyday politics comes to play a role in the ways that people negotiate their lives around water and arsenic in landscapes of social inequality and heterogeneity of arsenic contamination.

Keywords

arsenic, Bangladesh, gender, public health, water

INTRODUCTION

Gender is a critical factor in shaping how people access, control and use natural resources (Agarwal 1992; Jackson 1993; Kabeer 1994; Rocheleau *et al.* 1996; Cleaver 2000). Scholars have generally noted that women, particularly

marginalized and poor women, suffer the most from environmental degradation and natural resources crises. While water crises affect women and men in different ways, it has been widely argued that women suffer disproportionately from water scarcity and water-related disasters (Jordans and Zwartveen 1997; Meinzen-Dick and Zwartveen 1998; Crow and Sultana 2002). However, the experiences and implications of water scarcity vary across social strata and locations, and need to be analyzed in context. Elsewhere I have argued that it is important not to generalize that all women suffer equally, or to essentialize women to have an inherent connection to water, but rather that it is predicated on context (Sultana 2006).¹ Gender, class, age and geographical location intersect to influence the relationship that women have with water, which is largely shaped by gender divisions of labor, rights and resources. In the present article, I argue that *pani politics* (water politics) is a product of intersecting similarities and differences among women, where water comes to have material and symbolic power that people can exercise, which can lead to greater conflicts, marginalization and suffering of others.

I situate the analysis in the context of water poisoning from arsenic contamination of drinking water sources in Bangladesh. Information is drawn from in-depth interviews, focus group discussions, participant observations and case studies collected in rural areas of arsenic-prone regions between 2003–5. The methodology was largely qualitative, although quantitative analysis was also carried out from semi-structured questionnaires with 232 households, allowing for mixed methods that provided greater insight and detail into the situation. The fieldwork was carried out in eighteen villages of four districts in Bangladesh, which have been identified to have acute arsenic-induced water crises.

BACKGROUND

Bangladesh is facing a drinking water crisis from naturally occurring arsenic in groundwater that provides drinking water to millions of people. It is estimated that between 25–30 million people are at risk of consuming contaminated water with high arsenic levels (Ahmed *et al.* 2005). Groundwater became widely available through proliferation of tubewells (that pump up groundwater for consumption and use) in the last few decades.² Heralded as a public health success story as morbidity and mortality rates from water-borne diseases fell dramatically over the years, tubewells became the mainstay in rural drinking water supply systems. There are now an estimated 10 million tubewells throughout the country, both public and privately owned. The convenience of tubewells, as well as the status symbol associated with them, has made it a popular water supply system in rural areas. It has particularly been favored by women, whose drudgery in procuring water was lessened with increasing numbers of tubewells in villages over the years (Caldwell *et al.* 2003).

While the situation of accessing safe potable water improved with increasing numbers of tubewells, the discovery of arsenic has challenged the provision of safe drinking water, as people face arsenic poisoning (arsenicosis) from consuming contaminated water.³ It is estimated that about 2 million tubewells are showing varying levels of arsenic that is rendering them unsafe as drinking water sources (Ahmed *et al.* 2005). Arsenic occurs mostly in the shallow aquifers (approximately 10–70 meters below surface), which is where the vast majority of the drinking water tubewells tap into (Alam *et al.* 2002). Due to the significant spatial heterogeneity in arsenic in the aquifer (even within a few hundred yards), there are considerable differences in the levels of arsenic in tubewell water in the same area. This has resulted in entire villages having only unsafe tubewells (painted red by officials), or some with pockets of unsafe and safe tubewells (painted green), thereby increasing pressure on the safe tubewells for procuring water and greater water hardship.⁴ As a result, accessing safe water has become a critical problem in many arsenic-affected areas, where the issue is one of not just water quantity, but of water quality.

GENDERED RESOURCES, RIGHTS AND REALITIES

In rural Bangladesh, domestic water collection and management is predominantly undertaken by women and girls, who spend a considerable amount of time and energy under various conditions on a daily basis collecting drinking water for their families (Crow and Sultana 2002). It is rare for men to participate in domestic water collection. Certain notions of masculinity and femininity are associated with who does what types of tasks with water: men predominantly undertake irrigation and agricultural water management, while women generally are responsible for domestic water issues. Such socio-culturally defined gender roles are generally not challenged in the broader gender division of labor, even during the present arsenic-related drinking water crisis (Sultana 2006, 2007). The workload of women and girls has worsened due to arsenic, as greater time, distance and energy is involved in availing safe water. However, while poorer women fetch their own water, wealthier women are able to employ others to fetch water for them; similarly, more senior women in households generally enroll younger daughters-in-law and daughters to fetch water.

Most households try to switch to a safe well in order to avoid arsenic poisoning (often to tubewells of their neighbors or kin, or from public tubewells in bazaars, mosques and schools). More poor households are forced to make this switch compared to better-off households; this is largely a result of the fact that wealthier households have greater access to their own (more expensive) deep tubewells that tap into deeper aquifers that are mostly arsenic-free, while poorer households generally use more affordable shallow tubewells that are largely arsenic-contaminated. Contaminated tubewells meant that

people who had hitherto benefited from easy access to potable water via installing a tubewell were now facing the immediate challenge of having to avail safe water from elsewhere. For households that never had their own tubewell to begin with, it often meant having to switch to another nearby safe well or some other safe source (e.g. dugwells). In such waterscapes, women have to negotiate their access to safe water, often on a daily basis; such survival tactics can range from having to maintain a good relationship with or be related to the owner/manager of a water source, give free labor, help clean the area or pay an occasional fee.

The physical labor of gendered hardship in water procurement is compounded by social issues such as the need to negotiate access to water sources, a sense of humiliation in having to use someone else's water source, enduring insults and arguments at water points and a sense of loss of dignity and self-worth. Many women complained about such issues, as well as issues of gendered spaces in accessing water sources that may be far away or in public areas that are overwhelmingly masculine spaces. Problems of collecting water in the dark when the source is outside the *bari* (homestead), as well as a sense of social insecurity in traveling longer distances, mark the concerns that women and girls have in dealing with the water crisis. This is more so for younger daughters-in-law and unmarried teenage girls, whose mobility in public areas is often of concern to their families (especially male members who worry about safety and family honor). In some instances, women face restrictions from their own family members in venturing too far to get safe water, and are thereby forced to resign themselves to fetching unsafe water for their families.

In general, people are willing to share water in moments of crisis, as long as it does not impinge on their needs or the needs of their families. But this varies across people and places. Many are concerned that the safe water might run out if too many people take water from the same source, that owners of safer wells bear the costs of their operation and maintenance while others take water for free, that the owner's courtyard is always crowded and gets very muddy during the rainy season from footprints, that their privacy is affected and that too many people coming to get water creates tensions and arguments that affect everyone in the vicinity. Thus, the arsenic situation has created an environment where social tensions can easily erupt at water sources, whether pre-existing or as a product of water sharing. People can thus play politics over water by leveraging access to and use of water to exercise authority over others. As a result, water comes to have material and symbolic power in a landscape where safe water is accessible through appropriate technology (safe or green tubewells).

The women in the focus group discussion were worried about the fact that nearly 80 percent of the tubewells in their area were painted red. This placed a lot of pressure on the ones that were painted green or unpainted. One woman said that the waiting lines at the safe wells were sometimes long, and that everyone

wanted to get water first. One owner was so unhappy with this daily disruption that he removed the head of the tubewell and would only allow his immediate family members to get water when needed. Some of the other women complained, resulting in the men getting into arguments over water access. As a result, enmity developed between some of the families. Another woman said that the tubewell she used to use was barricaded off with a fence, and now she has to walk further to get water. However, one woman said that she benefited from a project-funded tubewell being installed in her courtyard, as it was convenient for her, but she too did not like the constant crowding and chatter when people came to get water. She has to routinely clean up after them and deal with the courtyard getting messy. But she thought that while some women did squabble over water, and pre-existing family feuds can result in women exchanging words at the tubewell, generally people were willing to put up with it in order to have safe water. At this point though, a young woman claimed that she would rather drink arsenic water than endure the constant bickering and insults.

(Author's notes from focus group discussion, January 2005)

GENDERED SOCIO-ECONOMIC AND HEALTH IMPACTS

In terms of socio-economic impacts, poorer households face the most adversities resulting from poisoned water, and in various ways beyond those of the difficulties associated with accessing safe water. These are largely from financial expenditures for treatment for arsenicosis as well as for installing/accessing a safe water source, loss of productivity and income from being ill or productive family members dying (from arsenicosis), as well as general loss of livelihood from social stigmatization and ostracization. Those manifesting the visible skin-related symptoms of arsenic poisoning are often treated as contagious and shunned. Poorer households are thus harder-hit than wealthier households, due to the constraints on resources, finances and power.

Such class issues are compounded by gender and age, and the arsenic crisis has affected poor women the most, as they generally have less resources and voice in Bangladesh society. While poorer households generally have less nutritional intake, which make them less able to stave off arsenicosis and its symptoms, this is particularly a threat for poor women. Women generally tend to eat last and the least amounts of food compared with men and children in the household. Women in general are also less likely to afford and get medical attention for health manifestations of arsenic poisoning; they are also less willing to share symptoms and be socially marked.⁵ Therefore, illnesses resulting from arsenicosis, or from having to take care of an ill family member, considerably burden the livelihoods and daily tasks of rural women. Wealthier women are able to avert water poisoning by both having better access to safe water as well as resources to get medical attention compared to poorer women, even if overall women in general feel the burden of water poisoning greater than men do.

Social stigmatization is a problem in many arsenic affected areas, the biggest social problem being marriageability issues for women as well as general social ostracization and rejection, across different social classes. Younger women were more concerned with not being able to marry if they fell ill, or maintaining their marriage in case their husbands no longer deemed them worthy or desirable. There was in general a greater sense of anxiety of contracting arsenicosis among women. Women afflicted with skin lesions were reported to be treated as contagious and often abandoned or denied marriage; food cooked by afflicted women has also often been refused by non-afflicted family members and neighbors. In the same village, women and girls with visible signs of arsenicosis are facing more difficulty in getting married compared to men; increased dowry is often demanded of the women or girls' families. A common expression was '*Beramma maiya anbo keno?*' (Why bring in a sick girl?). As a result, water comes to have health and social implications beyond that of direct arsenic poisoning, where power relations manifest themselves.

Rashida was married at a young age and came to live with her husband in this village. She drank water from the tubewell in the courtyard, as did the rest of the family. A few years ago, Rashida started to show symptoms of arsenicosis, and her health continued to get worse, as keratosis and melanosis showed up all over her body. Fearing that she was contagious and cursed, her husband remarried and brought home a second wife. This wife also started to show similar symptoms of arsenicosis, and the tubewell water was tested and found to contain high amounts of arsenic. Rashida's husband has now abandoned both wives, and taken a third wife and lives in the city. Rashida has no source of income except for the meager earnings of her eldest son; her other children are too young to work. Rashida spends most of her day unable to do much, in considerable pain and relies on external charity and support for her medical expenses as well as household expenses.

(Author's fieldwork notes, November 2004)

CONCLUSIONS

Gendered location makes a difference in arsenic contaminated areas, where gender differentiated impacts are being observed. Women's general lack of resources to deal with the ramifications of the arsenic problem can compound the effects of poverty and gender to increase further their marginalization and suffering. However, gender has to be understood as intersecting with other axes of differentiation such as social class, age and geographical location, to understand the nuances in suffering from arsenic poisoning (i.e. those who have resources or power and whether their water source is contaminated or not). Such intersectionalities produce the similarities and differences between people that enable water politics to have multiple ramifications, affecting both men and women of different social categories and locations

in different ways. Both inter- and intra-gender oppression and discrimination operate simultaneously in producing such realities. Attention to such differences highlights the variations in gendered hardships, labor, rights and resources vis-à-vis water.

While there are numerous arsenic mitigation programs in operation in Bangladesh currently, donors and NGOs are involved in different aspects in scattered projects (e.g. water testing and painting tubewells, raising awareness, identifying patients and providing healthcare, developing and providing arsenic removal technologies as well as geochemical research).⁶ Many of these studies and projects do not involve a gendered analysis or approach (Sultana 2006), and very few women's NGOs are involved in addressing arsenic mitigation. At most there are a few groups of women who are formed to receive various water technologies, but often decision making about arsenic and water management is controlled by the men in households (Sultana 2007). Compounded by trenchant patriarchal power relations, collectivizing among women themselves to resolve safe water access is thus not evident, as not all household members feel the ramifications of the crisis equally, and different households adapt to the situation differently. *Pani politics* (water politics) consequently has multiple dimensions and linked effects that go beyond just having access to water, resulting in continued suffering and hardship of many, that influences everyday life and village politics, and needs greater attention from scholars and practitioners.

Farhana Sultana
Department of Geography
King's College London
The Strand, London
WC2R 2LS, UK
E-mail: farhana.sultana@kcl.ac.uk

Notes

- 1 It is important to note that discourses of 'gender' are often problematically used in much of the development and water management literatures and policies to mean only 'women', whereas they should connote a comparative study of both men and women in any given context and in relation to other pertinent axes of social differentiation, such as class, caste, age, etc., and not viewing 'women' as an undifferentiated category (Mohanty 1991; Agarwal 1992; Marchand and Parpart 1995).
- 2 Mass campaigns were undertaken by the State, NGOs and donors to move the population away from consuming bacteriologically contaminated surface water sources to what was deemed safe groundwater largely in the 1970s and 1980s (Smith *et al.* 2000; Ahmed and Ahmed 2002).
- 3 Arsenic poisoning generally manifests itself as visible skin lesions, keratosis and melanosis, with greater exposure leading to internal organ failure, cancer and

ultimately death. The official estimates indicate that up to 40,000 patients have already been identified, and such numbers are expected to rise as more patients are screened and identified, and also since different symptoms of arsenicosis can take several years to fully manifest. Present statistics indicate that there may be escalating cases of cancer from chronic arsenic exposure in the future. See Ahmed and Ahmed (2002) for more details.

- 4 Efforts at informing people about tasteless/odorless/colorless arsenic in drinking water have been to paint contaminated tubewells red and safe tubewells green (the Bangladesh arsenic standard being 50 micrograms/liter, which is more lax than the WHO's standards of 10 micrograms/liter).
- 5 Women's access to adequate healthcare is a problem throughout rural areas of Bangladesh, not only in terms of actually being able to go to a doctor (where they often have to be chaperoned by a male member of the family), but also because their problems are often given less attention within the household to deem professional medical help.
- 6 An overview of these is beyond the scope of this article, but information may be obtained from both governmental, donor and NGO websites and publications (e.g. National Arsenic Mitigation Information Centre, Bangladesh Arsenic Mitigation and Water Supply Project, NGO Arsenic Information Unit). For greater detail on the history of arsenic in water and water resources management in Bangladesh, see Smith *et al.* (2000); Ahmed and Ahmed (2002); Hanchett (2004); Ahmed *et al.* (2005); Atkins *et al.* (2006); Sultana (2007).

Acknowledgement

Funding for the doctoral dissertation research from which this article draws was provided by various University of Minnesota grants and a MacArthur-IWMI Collaborative Fellowship. I am grateful to Nandita Ghosh and two anonymous reviewers for their comments and feedback on the article.

References

- Agarwal, B. 1992. 'The Gender and Environment Debate: Lessons from India', *Feminist Studies* 18 (1): 119–59.
- Ahmed, M. F. and Ahmed, C. M. 2002. *Arsenic Mitigation in Bangladesh*. An Outcome of the International Workshop on Arsenic Mitigation in Bangladesh, 14–16 January. Local Government Division, Ministry of LGRD and Cooperatives, Government of Bangladesh.
- Ahmed, M. F., Shamsuddin, S. A. J., Mahmud, S. G., Rashid, H., Deere, D. and Howard, G. 2005. *Risk Assessment of Arsenic Mitigation Options (RAAMO)*. Report produced by Arsenic Policy Support Unit, Ministry of Local Government, Rural Development and Co-operatives, Government of Bangladesh.

- Alam, M. G. M., Westbrooke, M., Allinson, G., Stagnitti, F. and Tanaka, A. 2002. 'Arsenic Contamination in Bangladesh Groundwater: A Major Environmental and Social Disaster', *International Journal of Environmental Health Research* 12 (3): 236–53.
- Atkins P. J., Hassan, M. M. and Dunn, C. E. 2006. 'Toxic Torts: Arsenic Poisoning in Bangladesh and the Legal Geographies of Responsibility', *Transactions of the Institute of British Geographers* 31 (3): 272–85.
- Caldwell, B. K., Caldwell, J. C., Mitra, S. N. and Smith, W. 2003. 'Tubewells and Arsenic in Bangladesh: Challenging a Public Health Success Story', *International Journal of Population Geography* 9 (1): 23–38.
- Cleaver, F. 2000. 'Analysing Gender Roles in Community Natural Resource Management: Negotiation, Lifecourses and Social inclusion', *IDS Bulletin* 31 (2): 60–7.
- Crow, B. and Sultana, F. 2002. 'Gender, Class and Access to Water: Three Cases in a Poor and Crowded Delta', *Society and Natural Resources* 15 (8): 709–24.
- Hanchett, S. 2004. 'Social Aspects of the Arsenic Contamination of Drinking water: A Review of Knowledge and Practice in Bangladesh and West Bengal', report presented to the Arsenic Policy Support Unit, Ministry of Local Government, Rural Development and Co-operatives, Government of Bangladesh, July.
- Jackson, C. 1993. 'Doing What Comes Naturally? Women and Environment in Development', *World Development* 21 (12): 1947–63.
- Jordans, E. and Zwartveen, M. 1997. *A Well of One's Own: Gender Analysis of an Irrigation Program in Bangladesh*. Colombo: Grameen Krishi Foundation and International Irrigation Management Institute.
- Kabeer, N. 1994. *Reversed Realities: Gender Hierarchies in Development Thought*. London: Verso.
- Marchand, M. and Parpart, J. 1995. *Feminism/Postmodernism/Development*. New York: Routledge.
- Meinzen-Dick, R. and Zwartveen, M. 1998. 'Gendered Participation in Water Management: Issues and Illustrations from Water Users' Associations in South Asia', *Agriculture and Human Values* 15 (2): 337–45.
- Mohanty, C. 1991. 'Introduction: Cartographies of Struggle', in Mohanty, C. T., Russo, A. and Torres, L. (eds) *Third World Women and the Politics of Feminism*, pp. 1–47. Bloomington, IN: Indiana University Press.
- Rocheleau, D., Thomas-Slayer, B. and Wangari, E. 1996. *Feminist Political Ecology: Global Issues and Local Experiences*. New York: Routledge.
- Smith, A. H., Lingas, E. O. and Rahman, M. 2000. 'Contamination of Drinking-Water by Arsenic in Bangladesh: A Public Health Emergency', *Bulletin of the World Health Organization* 78 (9): 1093–103.
- Sultana, F. 2006. 'Gendered Waters, Poisoned Wells: Political Ecology of the Arsenic Crisis in Bangladesh', in Lahiri-Dutt, K. (ed.) *Fluid Bonds: Views on Gender and Water*, pp. 362–85. Calcutta: Stree Publishers.
- Sultana, F. 2007. 'Suffering for Water, Suffering from Water: Political Ecologies of Arsenic, Water and Development in Bangladesh', PhD dissertation, Department of Geography, University of Minnesota, Minneapolis, MN, USA.