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**The Role of Feminist Political Ecology (FPE)
Framework in Studying How Gender and Natural
Resources are Interlinked: The Case of Women
in the Aftermath of Bangladesh's Arsenic
Contamination**

**Chinmayi Srikanth
Zareena Begum Irfan**



MADRAS SCHOOL OF ECONOMICS
Gandhi Mandapam Road
Chennai 600 025
India

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Chinmayi Srikanth

Indian Institute of Management Kozhikode, IIMK Campus P.O, Kerala 673 570

and

Zareena Begum Irfan

(Corresponding author)

Madras School of Economics, Chennai, India

zareena@mse.ac.in

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MADRAS SCHOOL OF ECONOMICS
Gandhi Mandapam Road
Chennai - 600 025
India

Phone: 2230 0304/2230 0307/2235 2157

Fax: 2235 4847/2235 2155

Email : info@mse.ac.in

Website: www.mse.ac.in

The Role of Feminist Political Ecology (FPE) Framework in Studying How Gender and Natural Resources are Interlinked: The Case of Women in the Aftermath of Bangladesh's Arsenic Contamination

Chinmayi Srikanth and Zareena Begum Irfan

Abstract

The purpose of this paper is to shed light on the need for a gender-centric approach to studying the consequences of the scarcity of a natural resource due to arsenic contamination, particularly water, on the lives of women. The need for such an approach is met by the Feminist Political Ecology (FPE) Framework that identifies women as highly vulnerable as compared to their male counterparts and the most affected by such scarcity. The paper uses the case of Bangladesh's arsenic contamination to explore the nuances of gender and how it changes their experience of the phenomenon. It also underlines the importance of FPE in painting a more realistic and complete picture of the vulnerability of women.

Key words: *Feminist Political Ecology, Bangladesh, water, women, vulnerability*

JEL Codes: *I14, J16, P48, Q53, Z13*

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**Chinmayi Srikanth
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INTRODUCTION

Oftentimes, science/nature and politics/society are seen as dichotomous or even mutually exclusive entities. While studying the development and conservation of natural resources, it is essential to acknowledge the nexus between these wrongly construed dichotomous variables; in the absence of such an approach, the study becomes inchoate and therefore the solution offered from such analysis turns out to be futile.

In the real world, access to resources, power over these resources et cetera is determined by socio-political factors. While studying the impact of such an event, one cannot ignore the importance of understanding the phenomenon within its social setting and at the same time acknowledge that the impact of the phenomenon is shaped by political variables as well. Political Ecology provides a framework for studying such pressing issues. The development of the framework, however, extends further to help conceptualize the role of gender in relation to the natural environment. This is crucial to understanding the vulnerability of women in environmental hazards and at the same time examine their role in the mitigation of the same.

Political Ecology can be understood as 'the complex relations between nature and society through a careful analysis of...access and control over resources and their implications for environmental health and sustainable livelihoods' and explaining 'environmental conflict especially in terms of struggles over 'knowledge, power and practice' and 'politics, justice and governance'' (Sheppard, 2008).

The political ecology framework enables the researcher to do justice to the analysis by factoring in those variables that are essential to the study but are often ignored. When gendered relations are explored in this regard, the ideal framework is feminist political ecology.

REVIEW OF LITERATURE

It is interesting to note that Feminist Political Ecology developed as a sub-field under Political Ecology in the 1990s with the publication of works such as 'Maps, Numbers, Text, and Context: Mixing Methods in Feminist Political Ecology' (Rocheleau, 1995) where a detailed methodology was developed to incorporate feminist or gender-related aspects in the political ecology framework. The paper vouches for the integration of qualitative as well as quantitative research methods to study environmental degradation and conservation. The paper explores this novel methodological approach to a social forestry program in the Dominican Republic.

The study marked a departure from the pre-existing literature on feminist geography (Momsen, 1993; Pratt and Hanson, 1994; Katz, 2001) and political ecology (Carney, 1993; Blaikie and Brookfield, 1987; Schmink and Wood, 1992; Schroeder, 1993) whose methodology had characteristics of both positivism as well as critical theory thereby using qualitative as well as quantitative analysis.

Although Rocheleau et. al., 2013 acknowledges the importance of combining qualitative and quantitative aspects of research, her paper gives considerable weight to the prospects of quantitative methods in feminist research while borrowing from alternative methodologies suggested by post-structural feminist critiques. The author justifies this through three major points.

1. Firstly, the Rocheleau contends the importance of drawing a distinction between affinity and identity as a means of developing the research question when qualitative aspects such as gender, class and other factors germane to the feminist approach. Identity, in most cases, is a time-invariant variable. However, affinities are time-variant and change with affiliation and similarities in views and preferences and at the same time

'coalitions'. The question that needs to be answered in this case is who is responsible for the counting, what is counted and what comprises the sample being studied. There is a need to transition from identities to affinities (Haraway, 1991) and then from affinities to coalitions (Harding, 1986). A body of knowledge can be constructed from several such studies that recognize dynamic coalitions wherein women are identified as a group with shared experiences and motives. The problem, however, with such a dynamic model is that it doesn't fit into the existing methodologies and therefore requires new ways to solve this methodological issue. This point, in addition to who is counted and who is it that counts also stress on understanding the context in which the study is made or the subjects are observed.

2. The second contribution made by feminist theory emphasizes the role of quantitative as well as qualitative methods in an attempt to make the analysis more objective in its form. Empiricists from the feminist discipline vouch for a completely quantitative approach to achieve a greater degree of objectivity. However, the post-structuralist school of thought and feminist critics of Science contend that in the quest for objectivity, the categories that are counted must be taken with a pinch of salt. This led to Haraway's notion of incorporating 'partial yet powerful objectivities' (Haraway, 1991). Harding, on the other hand, supports a greater degree of objectivity in studying feminist conceptions of the environment in the context of its socio-political setting.
3. The third contribution borrows from the post-structural and postmodern aspects of feminist theory. This methodology is largely based on qualitative research- particularly interpretivist approach which includes visual imagery, stories, and narratives. Later on, positivist methods such as surveys and questionnaires and resource mapping also found themselves being to make the

analysis more robust and comprehensive in understanding the use and management of resources. This method is, therefore, a combination of narratives with empirical data as a means of carrying out inquiry within a specific context.

The feminist political ecology framework is seen as one that treats gender as 'a critical variable in shaping resource access and control, interacting with class, caste, race, culture, and ethnicity to shape processes of ecological change, the struggle of men and women to sustain ecologically viable livelihoods, and the prospects of any community for "sustainable development"' (Rocheleau et. al., 2013).

The introduction of the feminist political ecology framework has led to an increase in economic policy reforms in natural resource management that show a preference for market-led approaches and at the same time introduced novel and more efficient ways of implementation of environmental governance. Despite bringing about radical changes to the approaches to studying the management of natural resources, the framework is said to have been rather saturated in terms of use in research. (Cornwall and Whitehead, 2007)

Feminist political ecology is most relevant in the study of water and gender relations. The relationship is not only apparent but also fits the framework. The copious literature on this theme (van Koppen, 1998; Zwarteveen, 1997; O'Reilly, 2006; Saleth et. al., 2003; Sultana, 2011) stands testimony to this fact.

Former research delves into the issue of gender and discusses this in light of the water problem in Bangladesh. Along with gender, the subtleties of emotions and other aspects specific to human behavior, experiences and sufferings are brought out when studies are guided by Feminist Political Ecology (FPE) framework.

Women and Water through FPE: The Case of Arsenic Contamination in Bangladesh

Arsenic contamination of water in Bangladesh has been a major problem. Although the issue is believed to affect all people in the area equally, a Feminist Political Ecology (FPE) framework helps researchers understand how the nuances of gender make this suffering different for the two gender groups.

When arsenic contamination was detected, tube wells were painted red and green depending on the levels of contamination of the water. Green tube-wells indicated that the water is fit for consumption while the red tube wells meant that the water was contaminated and therefore not fit to be consumed. The contamination was heterogeneous in the sense that many of the contaminated wells were unequally dispersed even among small areas.

Like in most villages, it is the women who fetch water from wells and other sources, contamination of many of which meant that they had to walk long distances to fetch water. Distance is a rather conspicuous problem faced by women in this regard. There are other factors, however, that find no mention in the extant literature pertaining to the Arsenic issue in Bangladesh as the situation prevails in West Bengal India (Irfan, 2012).

Defining Power, Rights and Access

The political ecology approach purports the need for a deep understanding of power and rights over the resources in question, access to the resources and control over the resources in context. It is therefore essential to define these concepts by incorporating the ground realities, the way they are rather than how they ought to be, in paper or under law.

For instance, rights over water would ideally mean that everyone has a right to consume water. However, property rights would define

ownership of water to be defined by the location of the wells whereby the owner of the property has the rights over the resources in his/her property.

Power, on the other hand, is completely defined by contextual factors. In the case of Bangladesh's arsenic issue, power over safe water cannot be aligned with class domination. Instead, this power is assumed purely on the basis of whether a household or neighborhood ends up with red or a green well. Since the contamination is a purely natural phenomenon, class doesn't play a major role here. Studies have even reported that there have been cases where richer neighborhoods have ended up with red wells and poorer ones with green wells (Sultana, 2007). This geographically dispersed location of safe water led to a spatial concentration of not only power in the hands of a few and consequently hardships. The power over and access to safe water was treated as a 'status symbol' (Sultana, 2007; Sultana, 2006).

Access can be understood as 'the ability to benefit from things (natural resources, material objects, institutions, people), rather than a right to things' (Ribot and Peluso, 2003). The access to safe water in Bangladesh is determined by several factors including tube-well ownership, the geographical location of one's household with respect to the nearest safe water (green) tube well, ownership of land, membership in the water committee and other informal relations that increase the chances of access.

'Not everyone owning a tube well has equal access to safe water, as their water source may be contaminated with arsenic; similarly, ownership can usually translate to control, but this is also gendered as the male member of the household may legally own the tubewell, but the female members may be responsible for controlling its use and regulating outsider access. In areas with large numbers of red tube wells and few green ones, not everyone has guaranteed access to the safe water in their vicinity

even if a tube well is next door, due to formal or informal mechanisms that can constrain that access'. (Sultana, 2011)

Securing Access to Safe Water in Rural Bangladesh

Access is not just confined to physical distance; social distance is even more crucial in determining access to safe water. Sultana (2011) discusses the role of emotional labor, gender relations, class and power dynamics in securing access to safe water.

One- time access, more often than not, does not guarantee continued access to water. Although it is possible to pay in cash, cultural aspects do not allow such monetary payments to be accepted for water, due to which payments are made in kind. It is believed that one must never deny water when asked for it. Unpaid labor is, therefore, the most common means of payment in kind.

In general, the ways and means in which access is secured and maintained are subject to changes across time as well as location. This means that access is a dynamic, not static phenomenon. (Berry, 1993) The struggles associated with securing access to safe water is aggravated by socio-political factors whose impact is manifold. Access is secured or denied on the basis of caste differences, class differences, power equations, religious differences, and political predilections among others. These problems arise due to a concentration of ownership of green wells in the hands of a few people/ households. At the site of the safe tube wells, overcrowding meant more squabbles and quarrels and certainly more noise. It was not uncommon for men to blame such incidents on women.

"Too many women in one place means too much noise and squabbling; who wants to put up with that daily in his own bari (neighborhood)". (Sultana, 2011)

Such statements are reflective of the magnitude of Patriarchal tendencies that exist even today in many parts of Bangladesh. Fetching water is a chore that is predominantly reserved for the female member of the family (Bimla et. al., 2003) and when they are fetching water, men who own the tube well keep a close watch on them. This illustrates the tendencies of the patriarchs to keep a close watch on women so as to restrict and monitor their movement and to ensure that their access to any resource is limited or even curtailed. For, access to water gives women a sense of power as they have the discretion to decide or judge the quantity, quality and even the source from which the water is obtained for the household. In other words, access to resources has a significant role to play in terms of empowering women. (Ivens, 2008)

But the empowerment is only the end result of securing access to these resources. Such studies remain silent on the emotional implications of the struggles involved when the resource is not freely available. Emotional labor is a common form of inconspicuous struggle that women face while being dependent on others for fetching water.

Emotional labor can be defined as 'the effort, planning, and control needed to express organizationally desired emotion during interpersonal transactions, emotional experience and expression can be and often are subject to the external direction, enhancement, and suppression' (Morris and Feldman, 1996). Although the concept finds its origin in the management discipline, it can be applied to any situation where a person is forced to be cordial, or even endure pain, suffering or discomfort without objecting. One experiences a dissonance between desired or felt behavior to actual behavior or action. Women undergo emotional labor when they put up with humiliation for fetching water from the tube wells owned by others.

On the other hand, when women find themselves discussing their sufferings amongst each other, there is a sense of bonding that arises

from their shared experience. This makes their hardships more bearable and less demoralizing. (Loftus, 2006)

Health Vulnerability

With regard to resource contamination, especially in the case of the presence of arsenic in water, women are the most vulnerable group, not only in terms of social factors as discussed earlier but also in the case of health hazards. Over the years, several studies have been undertaken to determine the health effects of arsenic contamination in Bangladesh (Anawar et. al., 2002; Brinkel et. al., 2009; Karim, 2000; Smith et. al., 2000; Yunus et. al., 2011). Conversely, the literature on the adverse effects of health in terms of gender- to explain how one gender group is more or less impacted by the other remains woefully inadequate.

Despite the limited literature, extant studies have well established that the impact of arsenic contamination on the health of women is significantly different from that of men by studying the level of arsenic methylation contained in both water as well as urine. (Lindberg et. al., 2008). Findings indicate that the efficiency of methylation in women is inherently higher than in men (Sudo et. al., 2004). Other studies that took into consideration age as an additional variable, report that the interaction of age and gender showed significance indicating that arsenic methylation is even higher among women in the childbearing age. (Lindberg et. al., 2008)

It can, therefore, be said that there is enough evidence to support the hypothesis that women as a gender group are more vulnerable than men. This vulnerability is not just in terms of social, economic and political factors, but also with regard to health effects.

DISCUSSION AND CONCLUSION

This paper provides justification for why gender and environment must not be studied in isolation by providing a review of the literature that

explores conservation and development of natural resources through feminist political ecology (FPE) framework and establishes the superiority of such an approach vis-à-vis the conventional methods of studying problems pertinent to the environment and natural resources.

While Feminist Political Ecology (FPE) has been used to study the impact of water contamination in West Bengal and its implications for women in general, there seems to be a dearth of studies exploring similar issues that potentially fit into the FPE framework. FPE enables researchers to carry out a more holistic analysis of the impact of natural resource scarcity due to an external factor such as contamination.

The problems faced by women in Bangladesh due to the arsenic contamination is manifold: they suffer more than their male counterparts not only in terms of health but also mentally and/or emotionally. Traveling a large distance to fetch water from the tube wells is only a part of their hardship; with the help of the FPE framework, a researcher can do justice to understanding why women are the most vulnerable group by virtue of their gender roles. Social factors also shape the gender-resource relations as explained by the framework. Once gender is accounted for, a realistic view of the water problem is developed.

The need for such a framework in examining natural resource scarcity is heightened by the fact that it helps policy-makers understand the magnitude of the problem and equips them with the right inputs to problem-solving. When the depth of understanding is better, policies can be directed at the right variables so that the problems are addressed before they worsen. On the flip side, however, we can argue that at the policy-level, it may be difficult to rectify gender-related issues since they are rooted in the patriarchal culture that has become so much a part of people's every-day life that they do not even realize that women are being subjected to a greater deal of suffering. Nevertheless, FPE brings to the fore gender and society and makes studies more realistic.

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