

## **Gender and Disaster Network**

### **Gender Policy Brief**

#### **Precarious Resilience: Gendered Lessons from Drought in North West Bangladesh**



GDN, RUET and UCL

2017

### **Summary**

North West Bangladesh is a harsh climatic and is experiencing drought conditions. This situation is only partly related to climate and environment but is also due to human made decision making. This study of two communities shows how they have adapted over time and made significant development advances (food security and child mortality) but with increasingly negative outcomes. Changes in agricultural practices have been successful in increasing food supply but have not brought greater wealth – due to the cost of increased inputs; nor achieved sustainability – due to the deterioration of groundwater sources. Furthermore, the advances have not been enjoyed equally as women have continued to experience fewer benefits and opportunities, and an increased workload to maintain household water security.

While the communities could be seen as resilient to a degree; resilience is more than just surviving and must be seen as thriving. Understanding gender imbalances in outcomes (current and potential) is important to avoid unintended consequences of future actions. Such actions are needed to avoid food and water crises in the coming years.

### **Introduction to the Research**

The research on which this short policy brief is based, was carried out during 2017 by the Department of Urban & Regional Planning, Rajshahi University of Engineering & Technology (RUET), Bangladesh in collaboration with UCL, UK<sup>1</sup>.

This case study provides empirical evidence that indicates how seemingly positive development interventions conceal unconsidered and unintended impacts on women even while they appear to build greater general community resilience.

Research<sup>2</sup> centred on three villages (Khatirpur, Notunpara and Bandhupara) in one of the most drought prone areas in the north-west region of Bangladesh, 240 km North-West of Dhaka. The area is characterized by acute groundwater and rainfall crises. The area comprises marginalized, indigenous, landless poor communities which maintain a traditional lifestyle and livelihoods based on agriculture and paid labour. The research project set out to identify and analyze water security issues in the study area; secondly, to identify the existing indigenous resilience strategies for combating the impacts of drought; and thirdly, to consider gendered differences in experiences and strategies.



Figure 1: Location of Naogaon District with Respect to Bangladesh

Methods included: Questionnaire surveys; Interviews; Experts' opinion; Key Informant Interviews (KIIs); Focus Group Discussion; and PRA (Participatory Rural Appraisal) techniques.



Figure 2: FGD and PRA Work in the Study Area

### Introduction to the Study Communities

The research was undertaken in the Barind tract region which consists of Rajshahi, Naogaon and Chapai Nawabganj districts. Drought and ground water depletion are the key emerging phenomena here. Although the study communities are not wealthy locations and experience challenging climatic factors, perhaps surprisingly, they do not currently face food crises as food is available throughout the year. This was not always the case. Between 1960-1980 the hunger problem was high; between 1980-2000 the hunger problem decreased to medium; and for the later period between 2005-2015 the hunger problem improved again and is presently rated as low. The field observations in 2017 confirmed the assessment that the communities are generally well adapted to food security parameters.

Rice productivity increased substantially over the period from the 1960s through improvement by fertilizers and pesticides. However, although the crop productivity has increased overtime, the rate of return from this agricultural investment has remained same because people need to pay for fertilizers, pesticides and, crucially in this location, water, to maintain such high levels of production.

Another surprise for a relatively poor area, the child mortality rate of the communities is low. Again, this was not always the case. According to the community participants, between

1960-1980, the child mortality rate was high; it decreased to medium during 1980-2000; and between 2000-2017, the child mortality rate is low. Thus, the communities have adapted where they can and maintained a good level of food and health security in the face of climate extremes and drought.

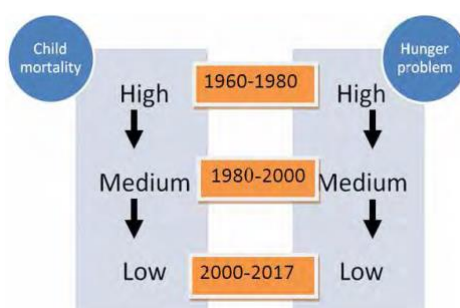


Table 1: Trends in Child Mortality and Hunger 1960-2017

## Environmental Stresses; Social Stresses

On the face of it, the study communities are resilient and have adapted well. This is the assessment at the community level. However, the improvements have come at a cost and, it must be remembered, resilience is a dynamic state and not a fixed condition. For example, water uses that have developed over time are now unsustainable in combination with climate



extremes. Official Bangladesh statistical records confirm a declining trend in the groundwater table in the northwest region of Bangladesh over the last 30 years (1981-2011); this is mainly due to over-exploitation of groundwater greater than the recharging of the aquifer. Furthermore, when assessment is made at the intra-household level it will be seen that the resilience designation has always been a precarious one where women and girls are concerned.

Household water collection (drinking, cooking, dish washing, bathing, cleaning and livestock management) is largely a women's responsibility. The average distance of collecting drinking water has increased over time. The water points are now deteriorating and tube wells are becoming obsolete. For cooking, dish washing, cleaning, bathing, cattle bathing and feeding, women use pond water. There is a drinking water crisis which is becoming acute with every passing year.



Some tube wells that were functional a few years ago, are now obsolete. There is only one safe drinking water source (a deep tube well and sub points provided by a Christian charity) and if the tube well fails, the total drinking water system of the area will collapse.



Responsibility for water collection and water storage lies with women. Generally, women visit ponds and wetlands three times each day, carrying at least three containers to meet the household demand. Women store water in pitchers and other small containers but the amount and time for storage is limited because of the distance water has to be carried. During summer the water scarcity is at its worst and women bear the brunt of these extremes.

The locality experiences high summer temperatures and, in recent years, little rainfall. These

result in high evaporation levels of any available water, in surface ponds or in storage. Rainwater harvesting, which is practised in these communities, requires rain but this has been in short supply in recent years. Women face longer journeys in hot weather. This, on top of an already long day's work, leads to considerable mental and physical stress.

Field observations indicate that, due to the drought condition of the region, the livelihood strategies of the people have changed. People of the region are now shifting to mango



cultivation rather than the traditional rice cultivation because rice cultivation requires large amounts of water. This agricultural shift of crop type is alarming for the future crop security of the region. If this trend continues, food security will be threatened as rice is the primary food item in Bangladesh.

In recent years, there has been an increase in pig cultivation rather than cow or goat cultivation because pig cultivation requires less water and is more profitable. Village representatives confirmed that only male members of the family get to eat pig meat and thus women do not directly benefit from this change. Furthermore, cow milk is the primary

baby food and if the trend continues then people may face a baby food crisis in this region in the near future which is another looming impact for mothers – many of whom are very young and inexperienced. The villagers confirmed that early marriage of females is highly prevalent in the region.

In this part of Bangladesh, women are permitted to work outside the home. This is a potentially positive opportunity for women. However, as they have a low level of education (fieldwork revealed many people to be functionally illiterate despite having some years of schooling) and there is no industry other than agriculture in the location, their options are limited. Additionally, because they have lengthy household and water provision responsibilities, they are not able to work a full day and are paid only 150 taka per day compared to the rate received by men of 200 taka per day.



The drought condition of the region influences wages, job security and mobility patterns of females and males in the region. Women can only work for three months in a year as the rice cultivation takes place in only this period. During the other seasons of the year, rice is not cultivated because the climate does not allow it. The drought conditions leave people jobless. In this situation, men can opt to migrate for some months when they are unable to work locally. However, this is not possible for women who must continue to manage the household and must adhere to restrictive social norms that further limit their mobility and their opportunities. Participants reported, for example, that females do not get their father's land by inheritance; only males receive properties by inheritance.

While women's mobility may be limited to the local environs, yet their tasks and activities (such as working in the fields, harvesting rice, managing the livestock, collecting firewood, collecting and storing water) take them to more local places than the men. This is a common finding elsewhere in the world. It is highly likely that women's greater familiarity with their communities leads to a deeper understanding of local environmental and social conditions.



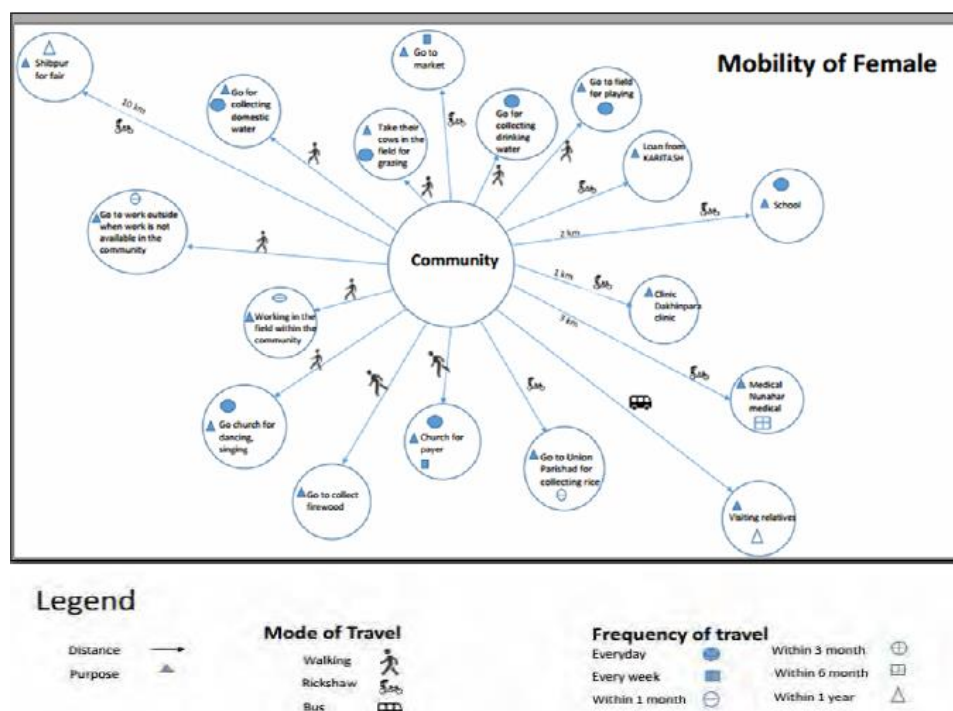


Figure 3: Mobility Map of Female Villagers

## Conclusions

The field research confirmed the challenging conditions in which the focus communities are living. They demonstrate some positive human development indicators but in achieving them they have also introduced new vulnerabilities and stresses, particularly on women. They underline the need to employ the resilience term with caution and in full recognition of resilience's inherent complexity, instability and variability (including inequality) within and between social groups. Resilience shouldn't just mean surviving but thriving.

Generating Resilience		Generating Vulnerability	
Interventions & Adaptations	Positive Development Gains	Unintended consequences	Negative Outcomes for Women
<ul style="list-style-type: none"> <li>Switch to high yield crop varieties</li> </ul>	<ul style="list-style-type: none"> <li>Increase in agricultural production, food security and health</li> </ul>	<ul style="list-style-type: none"> <li>High demand for water and other inputs</li> </ul>	<ul style="list-style-type: none"> <li>Water source decline, leading to psychological distress from water insecurity</li> </ul>
<ul style="list-style-type: none"> <li>Switch from rice production to other crops (e.g. Mango) and livestock (e.g. pigs)</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in water demand</li> <li>More income</li> <li>More diversity in food</li> </ul>	<ul style="list-style-type: none"> <li>Risk to long-term food security</li> <li>Jobs for women affected</li> <li>Intra-household inequalities</li> </ul>	<ul style="list-style-type: none"> <li>Psychological distress from food insecurity</li> <li>Loss of usual employment</li> <li>Women do not receive the benefits of pig production</li> </ul>
<ul style="list-style-type: none"> <li>Shift from dependence on surface water sources to groundwater sourced tube wells</li> </ul>	<ul style="list-style-type: none"> <li>More and better quality water</li> <li>Improved access to water</li> </ul>	<ul style="list-style-type: none"> <li>Subsequent depletion of groundwater sources</li> <li>Dependency on tube wells</li> </ul>	<ul style="list-style-type: none"> <li>As tube wells decline, available water is located at a distance, which causes physical and psychological</li> </ul>

			distress from water insecurity
<ul style="list-style-type: none"> <li>Women work outside the home</li> </ul>	<ul style="list-style-type: none"> <li>Increase in household income (and other intangible social benefits)</li> </ul>	<ul style="list-style-type: none"> <li>Women receive fewer opportunities and a lower rate of pay than men</li> </ul>	<ul style="list-style-type: none"> <li>Women's livelihood is precarious and unequal</li> </ul>

Table 2: Generating resilience or vulnerability from development interventions.

These studies suggest the communities are now in a transitional state as regards their resilience status. It is one in which the right actions must be taken to improve the environmental and social conditions of all community members. On the basis of this empirical evidence, the following overarching policy recommendations can be made:

### Key Policy Recommendations

- Food security, water security, health security and economic security are inextricably **linked** and equally **dynamic**. It is not possible to make an intervention for one without affecting the others (positively or negatively), so it is vital to approach problems **systemically**;
- Unintended consequences for women** often emerge on the **margins** of development activities. They are slow to be recognised, and challenging to act upon, in the face of benefits accruing to the centre. **Gender analysis** is vital at all stages from problem definition through to implementation and beyond;
- Women represent around half the population and yet they are denied **equal opportunities** to contribute to, and benefit from, community, household and personal development. Based on a growing evidence base around the world, equalising prospects for women and girls can bring **benefits to all**.

### End Notes

<sup>1</sup> This Policy Brief is one of several collaborative research projects between: University College London (UCL), UK; Chittagong University of Engineering and Technology (CUET), Bangladesh; Dhaka University (DU), Bangladesh; Khulna University of Engineering & Technology (KUET), Bangladesh; and Rajshahi University of Engineering and Technology (RUET), Bangladesh. The research was funded by the International Center for Collaborative Research on Disaster Risk Reduction, Beijing, China.

<sup>2</sup> The research presented here is based on work by Department of Urban & Regional Planning, Rajshahi University of Engineering & Technology. The full findings are reported in: RUET 2017 PROJECT FINAL REPORT, Response of Natural Disasters through Resilience: Addressing Extreme Climatic Disasters to Annihilate the Insecurity of Food, Nutrition and Livelihood - A Study on Disaster Affected Communities in Bangladesh.

<sup>3</sup> How to cite this brief:

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