The Socio-Economic Impact of Floods in District Thatta: A Gendered Analysis

SPDC

Gender Research Programme
Research Report No.8

SOCIAL POLICY AND DEVELOPMENT CENTRE

THE SOCIO-ECONOMIC IMPACT OF FLOODS IN DISTRICT THATTA: A GENDERED ANALYSIS

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Foreword

Social Policy and Development Centre (SPDC) realising the importance of integrative research initiated a series of Research Reports under its Gender Research Programme (GRP) in the year 2009. The areas identified for research are wide-ranging developmental issues existing in Pakistan. The overall objective of the research programme identified will help place gender on the map of policy-making in the country by creating awareness of gender implications of social and macroeconomic policies with a particular focus on women, work, and poverty. It will also help develop quantitative and qualitative data, including gender disaggregated statistics and indicators that will help map changes in gender roles and their access to equal rights and opportunities which consequentially will help bring the much-needed paradigm shift in the existing social structures; add to the technical research in Pakistan on the gender aspects of social and macroeconomic policies; factor in gendered perspectives in 'hardcore' economic issues as well as social 'progress-engine' concepts of development, primarily by undertaking pioneering research and policy analyses.

The series of Research Reports produced, hopefully, will help open avenues for further research on issues of development, equal opportunities, equitable policies and all other issues of gender equality and equity.

The socio-economic impact of floods in district Thatta: A gendered analysis is the eighth in the series. The report analyses the socio-economic bearings of the 2010 floods in the district by gender. It looks into the nature and extent of the impact of floods on development indicators such as education, health and household structure; changes in the workload of both women and men; and post-flood stress symptoms experienced by the affectees. This report also aims to bring forward the gender differentials of the impact of floods on Thatta's population. Insights from the report are, therefore, expected to encourage policymakers to not only focus on reducing exposure and vulnerability of the population in disaster prone areas, such as Thatta, but also to mainstream gender within climate change policies.

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Prof. Dr. Khalida Ghaus
Managing Director

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INTRODUCTION

CHAPTER 1 INTRODUCTION

In 2010, a large area of Pakistan was devastated by floods which damaged the physical infrastructure of the affected areas. They deprived a large number of people of their assets and livestock, and destroyed their houses. Thatta, the second largest district of Sindh in terms of area, is a disaster prone district where the damages were unprecedented and the impact on the livelihood of the population was severe. The floods destroyed homes, public institutions, crops, livestock, market places, public and private infrastructure as well as the properties of individuals. They also temporarily displaced a large number of the district's population.

The experience of developed and developing countries like Bangladesh, Cambodia, South Africa, Australia [i] and others indicates that natural disasters, including floods, have complex socio-economic consequences for different strata of society. For instance, poor households are more vulnerable than rich households. Similarly, gender differentials also exist since females are more vulnerable to suffering and exploitation than their male counterparts.

In Pakistan, the response to the 2010 floods came from almost all segments of society including the federal and provincial governments, civil society, the general public, philanthropists and donors. Although measures[1] were taken to determine the cost of damages, rehabilitation and reconstruction, it appears that no systematic detailed post-flood assessment was undertaken to assess the gendered socio-economic implications of floods. This research report aims to bring forward the gender dimensions of the implications of the floods on the households living in district Thatta.

RATIONALE

The rapid assessment undertaken, of the 2010 floods, has indicated a high socio-economic cost for the people of Pakistan. In the immediate aftermath, rapid assessment studies on the severely affected regions of Pakistan found that the floods had negatively impacted households' normal livelihood activities in the affected districts including Thatta. The population of the district were also affected by the large-scale displacement that was seen in most parts of the area. The floods also caused destruction of roads, schools and health centres as well as other village level infrastructure of the district. The damage caused to the physical infrastructure, particularly, has led to concerns about the disruption of access to basic social services.

Earlier studies[2] , undertaken in Pakistan, on the post-flood situation were limited to either rapid assessments or comparison of some district level indicators with little information provided on the recovery and rehabilitation process. While these studies focused only on evaluating immediate impacts of the floods, by covering certain socio-economic aspects related to households, their actual socio-economic impact on district Thatta remained unknown. The justification for this study is, thus, provided by the lack of focus on sectors, such as education, health, water and sanitation; household assets; and the overall economic situation affecting the lowest strata of society.

The study also aims to bring forward the type of the gender differentials of the impact of floods on the population residing in the affected talukas. The head of household and his/her spouse were identified as respondents for their impressions on questions focusing on the impact of the floods and the implications of the latter for the education and health sectors (including the psychological health of the affectees); employment; and damages caused to physical and economic infrastructure and household assets. The analysis, therefore, is based on a representative sample of each affected taluka gathered from the affected households of the affected areas of district Thatta. The data collected is representative and based on 501 households consisting of 501 male, and an equal number of female, respondents.

RESEARCH GOAL AND OBJECTIVES

The contemporary discourse focusing on ecological implications and human safety has emphasised upon the respective governments to look into the impact of floods on people whereby their effects are felt differently by the different segments of society. The literature produced also illustrates that these effects in turn vary within the same sex. For example, it indicates disproportionate economic losses to economically insecure women – greater agricultural losses to female farmers, destruction of women's home-based businesses and limited access to post-disaster economic aid. Similarly, it highlights the changes in workload suggesting that disasters increase women's responsibilities in the domestic sphere, paid work and community through the disaster cycle of preparation, relief, reconstruction and mitigation. [ii]

The purpose of the research is to analyse the socio-economic bearings of the floods by gender in the flood affected talukas of district Thatta. Given the parameters, the study has three broad objectives. First, it looks into the nature and extent of the impact of the floods on the social fabric by comparing various indicators related to education, health and household structure. Second, it analyses and helps in building a better and proper understanding of the changed workload of women and men such as increased/decreased responsibilities in the domestic sphere, paid workplace, and community. Third, it looks at the post-flood stress symptoms (both) on men and women.

STRUCTURE OF THE REPORT

The research report has been divided into the following six chapters. Chapter two provides a comprehensive review of relevant national and international literature by covering various socio-economic implications of floods related to men, women, girls and boys.

Chapter three focuses on the methodological aspects of the primary survey, its rationale and conceptualisation framework, identification of the target population, sample plan and survey instruments. It also helps in bringing forward the nature, type and volume of the impact of the floods collected through secondary sources available on eight, out of the nine, talukas of the district.

Chapter four presents survey findings related to the demography and the family size of the sampled population, and the challenges posed to the socio-economic development of the affected areas and population.

Chapter five reviews the impact of the floods on the changed workload of women and men in the domestic sphere, paid workplace and community, noticed during the post-flood period. The chapter also discusses the effects of the floods on the gender-wise distribution of employment in various economic sectors, particularly the agriculture sector. The chapter concludes by discussing coping strategies adopted by the affected households after the floods.

Chapter six covers the survey findings related to the impact of the floods on physical and economic infrastructure and other damages such as loss of property, possessions, businesses, employment and relocation (disaster-induced migration or resettlement) of the communities. It also brings forward male perceptions about the impact of the floods on the role and responsibilities of women. Finally, it analyses the existing mechanisms, available or otherwise, for timely warnings of floods.

Chapter seven provides a summary of key findings emanating and derived from the analysis undertaken. The conclusions drawn are inclusive of the strategy suggested to promote and ensure gender mainstreaming in future policies, and strategies identified and formulated to deal with future natural disasters/floods.

NOTES:

1. These measures comprise various assessment studies including, but not limited to, Pakistan floods 2010, preliminary damage and needs assessment, by the World Bank and Asian Development Bank; Rapid needs assessment by the United Nations.

2. Pakistan floods 2010, preliminary damage and needs assessment, by the World Bank and Asian Development Bank; Rapid needs assessment by the United Nations.

CHAPTER 2

LITERATURE REVIEW

CHAPTER 2 LITERATURE REVIEW

Extreme weather and an increase in natural disasters in recent years have finally made policymakers think earnestly about 'climate change and natural disasters'. The Stern Review and the Assessment Report of the Intergovernmental Panel on Climate Change in 2008[1] had clearly stated that an increase in natural disasters due to climate change will have adverse affects on social and economic sectors. It predicted an increase in the coming years. According to United Nations Office for Disaster Risk Reduction (UNISDR), natural disasters have caused economic damages worth 730 billion USD, between 2008 and 2011, negatively affected 843 million people and killed about 598,000 people around the world. There has been an increase of more than 50 percent in the number of floods during the last decade. [i]

The increase in the intensity and frequency of floods over the last decade has raised concerns among development agencies, governments and regional organisations about the importance of having effective natural disaster management. The Hyogo Framework for Action[2], a global blueprint for disaster risk reduction efforts, was adopted by 168 governments. Despite this, little has been done by governments all over the world to reduce total greenhouse emissions or initiate disaster risk reduction strategies. Similarly, South Asian countries, adopting the Malé Declaration,[3] agreed on a collective response to large-scale natural disasters affecting member states. SAARC has established regional centres, such as the SAARC Coastal Zone Management Centre in the Maldives, the SAARC Forestry Centre in Bhutan, the SAARC Disaster Management Centre in India and the SAARC Meteorological Research Centre in Bangladesh, to address diverse aspects of environment, climate change and natural disasters. [ii]

Other positive regional initiatives include the EU climate and energy package[4] that was adopted in 2009 to implement the 20-20-20 targets endorsed by EU leaders in 2007. The package seeks a 20 percent reduction of green house gas emissions by 2020, compared to 1990; a 20 percent share of renewables in EU energy consumption; and 20 percent energy improvement. Likewise, in cooperation with the United Nations Economic Council for Europe (UNECE) and the European Water Initiative, the Organisation for Economic Co-operation and Development (OECD) is working with governments in Eastern Europe, the Caucasus and Central Asia to help them factor climate change and the need for adaptation in their water policies. The OECD's contribution focusses on the use of economic and financial instruments to adapt water allocation and investment in water-related infrastructures.[5]

One might be of the opinion that disaster events are probabilistic events and their occurrence can only be calculated on a probability basis and there is no escape from their destruction. However, it is important to understand the consequences of such occurrences and what can be done to help the affected populace overcome the calamities natural disasters cause. Research has shown that regardless of the scale of a disaster, a combination of national and international policies can help ward off disease and death faced due to natural disasters. [iii]

THE 2010 FLOODS IN PAKISTAN

The website of the geological department,[6] of the Australian government, defines flood as "the covering of normally dry land by water that has escaped or been released from the normal confines of: any lake, or any river, creek or other natural watercourse, whether or not altered or modified; or any reservoir, canal, or dam." Floods primarily impact the human community either directly through contact with the water or indirectly through the damage the water does to the natural and human-built environment. [iv] "Localised floods can have a significant impact on people's physical and mental health." [v]

The 2010 floods were one of the largest floods in the history of Pakistan causing unprecedented damage and killing more than 1,700 people. They affected over 20 million people; inundated almost one-fifth of the country's land; and caused billions of dollars in losses through damages to infrastructure, housing, agriculture and livestock, and other family assets. [vi]The World Bank and Asian Development Bank (ADB) estimated that the flooding had caused the economy $9.7 billion in losses. [vii] Cases of malnutrition, gastroenteritis, diarrhoea, skin infections, cholera, typhoid, malaria and hepatitis were reported. Moreover, the dramatic increase in the food prices placed the affected population under additional economic strain.

In the province of Sindh, the floods affected nearly seven million people and thousands trapped by flood waters were in need of assistance. The district of Thatta was affected – with flood waters touching 9,50,000 cusecs. The feeble dykes built to protect the district's populace overflowed causing both the banks of the Indus River to flood leading to widespread destruction. The provincial and federal government, along with many international and national non-governmental organisations, led the relief efforts that helped stop hunger and famine from spreading. However, in recent years continuous acts of terrorism have kept the government preoccupied with matters of public safety and security. This continues to be the main focus of the government and has reduced state capacity to productively provide basic services for which resources had already been deficient. Unfortunately, the government's response to natural disasters remained limited to needs assessment and immediate relief operations. The assessments have typically focused on direct damages of capital assets which includes the number of deaths and injuries, damages to buildings and public infrastructure and loss of crops and livestock.

Assessments of impacts of disasters on social sectors, such as health and education, are also limited to the measurement of damages to schools and hospital buildings and tend to ignore the long-term effects on the health and education levels of the affected populace. Long-term assessments of social sectors are critical even more so for a country like Pakistan as it already struggles with low social development indicators, ranking 145 out of 187[7] countries on the Human Development Index and 115 out of 146[8] countries on the Gender Inequality Index (GII).

APPROACHES TO MEASURE THE IMPACT OF NATURAL DISASTERS

Researchers across the world have used diverse approaches to determine the impact of floods. In Pakistan, the EU has previously employed the EMMA (Emergency Market Mapping and Analysis) – a rapid market analysis tool designed to be used in the short-term aftermath of a

sudden onset of a crisis. A better understanding of the most critical markets in an emergency situation enables decision makers (donors, NGOs, governments, other humanitarian actors) to consider a broader range of responses. The aim of the approach is to gauge and understand the structure and functioning of key markets in the short term so that immediate recovery programmes are consistent with the situation on the ground. Even though the research is useful in providing immediate relief, the approach does not take into consideration the long-term effects of the disaster affecting the overall well-being of households and individuals. [viii]

Likewise another approach which can help donors in targeting and addressing the sufferings of the affectees is the methodology identified by the Economic Commission for Latin America and the Caribbean (ECLAC) which deals with post-disaster evaluation. The methodology[9] focuses on rehabilitation and recuperation. It advocates using a dynamic and sectoral perspective that enables researchers to calculate future losses caused by the destruction of productive structures and forfeitures of business opportunities and their middle/long-term effects in different times. The methodology aims to enable its users to try to define the type of international cooperation the affected community needs. Although precise knowledge of various sectoral damages and losses, present and future, suffered by the communities enables the disaster relief agencies to execute more specific rehabilitation projects, the ECLAC methodology, by mainly focussing on economic costs, neglects the impact of floods on the social sector. [ix]

In a FLOODsite project report on the Mulde River in Germany, researchers have taken the bottom-up approach to understand social vulnerability caused by floods. The methodology helps in understanding the circumstances that makes an individual or a community vulnerable by investigating the circumstances that make some groups more so than others. The report describes social vulnerability as "the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist, and recover from the impact of a natural hazard." It primarily focuses on how communities and social groups are able to deal with the impact of a natural hazard. The report provides valuable insight into the dynamics of social capital; however, it does not provide the sectoral assessments. [x]

Recognising the importance of the sustainability[10] programmes, the approach identified by Assessments of Impacts and Adaptation to Climate Change (AIACC) based its findings on the sustainable livelihood conceptual framework.[11] The framework[12] helps evaluate the performance of sustainable livelihood and environmental management measures by creating an understanding of the role and impact of a project on enhancing and securing local people's livelihoods. The framework focuses on five types of capital namely natural, physical, human, social and financial.

The above-mentioned frameworks do provide a better understanding of the assessments used to gauge the impact. The frameworks, by and large, focus on the immediate needs assessment, macro-economic impacts, social capital, and sustainable livelihoods. However, they do not seem to be gender sensitive and lack focus on the social sectors.

GENDER ASPECTS OF NATURAL DISASTERS – INTERNATIONAL

Several studies indicate that women are most adversely affected by natural disasters. Sarah Bradshaw in her paper advocates the use of a gender approach by ensuring the inclusion of gender disaggregated data in research immediately after the flood. For example, in the case of Muslim countries women might opt not to visit a male doctor, hence if researchers have the number of women who need medical attention they can arrange the availability of female doctors accordingly. [xi] Enarson et al (1998), Fordham (1998), Morrow (1999) and Tapsell et al (2000) are of the view that floods and other disasters can impact men and women in different and distinct ways. The literature, such as Tapsell et al 2003, illustrates that women suffer markedly more than men at the worst time of flooding. This is due to socially constructed roles and responsibilities through which women are placed at a more disadvantageous position. For instance, with no access to resources and the nature of power relations, their ability to respond to the effects of climate change is minimised.[13] [xii]

Due to traditional gender roles, women are responsible for household chores such as cooking, washing, hygiene, children and raising small livestock. Children, in particular girls, share these responsibilities. In Africa, 90 percent of the work of collecting water and wood needed by the household, including food preparation, is done by women. Women often are burdened by extra workload to manage and cope with their everyday tasks during an emergency situation. [xiii] Babugura et al (2010) have suggested that this is because women have the main responsibility for and, probably, a greater emotional investment in the home than men. The role of women in developing countries, especially in rural areas, is mostly restricted to household responsibilities. Women in such conditions believe that the purpose of their life is to maintain their homes. They also usually have the key responsibility for the care of children and the elderly in the home. Moreover, in a post-flood situation, it is the central responsibility of the woman to bring the home back to normal. [xiv]

In many developing countries, especially in the South Asian region, food hierarchies favour male nutritional requirements and women's nutrition and health requirements are often ignored. In Bangladesh, it has been reported that "Given the already precarious nutritional state of large numbers of girls and women in Bangladesh … any further increase in discrimination would have serious consequences." In poor households, throughout the world, women go without food for the benefit of their children or male family members. [xv] Moreover, an ADB report[14] in 2001 found that in Bangladesh, of the 20-30 percent female-headed households, 95 percent are living below the poverty line. Even in developed countries such as the United Kingdom, lone parent and single pensioner households – the majority of which are female headed – are more likely to be living in poverty. It is noted that in some instances pressure on families has been so severe that there have been reports of children being offered for domestic employment and of female children being sold. The evidence indicates that female-headed households already tend to have limited economic resources and hence a natural disaster can have a greater impact on their livelihoods in comparison to others.

Other than overall poverty rates, health and education are two sectors, where women in the South Asian region, still lag behind men. The poor nutritional status of women makes them more susceptible to disease and infection, particularly in developing countries where there is little social provision and limited or no access to proper medical care. Poor nutrition also makes women more vulnerable to disasters and makes the physically strenuous tasks of water and fuel collection more difficult. Research in India has found that girls' nutrition suffers most during periods of low food consumption and rising food prices, which is common during disaster situations. [xvi]

Fewtrell and Kay (2006) provide evidence of floods causing bacterial, fungal and respiratory disease, and gastrointestinal infection along with earaches and skin rashes. It is widely acknowledged in health research that some groups, such as women (especially pregnant women), the young, the elderly and immune compromised people are more vulnerable to health impacts (especially infection) than other people (e.g. Flynn and Nelson (1998); White et al. (2002); WHO (2004)). [xvii] Moreover, floods can also have an impact on the mental health of the affectees. It has been suggested that women may suffer more mental strain in certain situations due to cultural norms. Women in poor health prior to the flood are more likely to be traumatised by it. When whole families move to urban slums or relief camps, the women, especially, face challenges adapting to the new environment. Problems include harassment, lack of security, unreliable water supplies (which increases their workload) and lack of privacy. Long journeys to the relief camps can cause both physical and mental stress when coupled with experiences of sexual harassment on these journeys. Women's dramatically expanded care giving roles following a disaster, and putting family needs before their own, may explain the overall decline in emotional well-being. [xviii]

GENDER ASPECTS OF NATURAL DISASTERS – PAKISTAN

The international literature on women in relation to climate change clearly highlights the nature of the vulnerability and adverse exposure that natural disasters pose to women. Similarly, research studies have been conducted by different development organisations to gauge the impact of the severe floods that hit Pakistan recently. The research results are in line with international literature. Pakistani women, particularly, have reproductive and domestic roles in the households and are barely visible in the public spheres especially in rural areas. These characteristics make way for a greater impact on their socio-economic conditions from natural disasters. The existing situation of women in Pakistan cannot be fully valued without an understanding of the ways in which religion, culture and traditions have organised social relations and fractured society along class, racial, ethnic and gender lines. Pakistan, therefore, presents a distinctive situation from a socio-economic perspective. A survey conducted by the Office for the Coordination of Humanitarian Affairs (OCHA) as a Needs Assessment Study on the 2011 floods in Sindh found that 37 percent of households had reduced or skipped food intake to meet the ration requirements. [xix]

Nazish Brohi (2010) in her study, based on case studies, shares the experiences of flood-affected women. The study discusses how, due to the absence of a pre-flood warning system,

the impact of the flood was magnified. For example, "in Mianwali, a thirty year old woman, Jawwahi, rushed out with her family in waist high water and saw her house crumble before her; in Charsadda, women awoke to cries and found water rushing into their houses". Similarly the study also illustrates how women's hygiene had been affected due to floods. For example, in Kalabagh district, "Baghat Bibi, a sixty year old woman, with her three daughters and three daughters in law, visited the river every few days and submerged themselves in the water to clean themselves and their clothes, and then dry themselves while wearing the same clothes – it is reported that the they had been doing it for over three weeks". As women in rural areas are not used to moving about in public spaces other than their villages; girls and women are often embarrassed to be seen accessing lavatories and hence do so during nightfall or early morning. Such overwhelming circumstances coupled with cases of harassment can have profound impacts on mental health. [xx]

The Preliminary Gender Needs Assessment report by UNIFEM[15] (UN WOMEN) notes that women were under severe stress as the devastation caused by the floods destroyed their limited assets, worsened their personal security situation, and changed their responsibilities as they were forced to respond to emergency conditions. The report stresses upon the fact that even though women's health is vital to the well-being of their families, after disasters, (traditionally as caregivers) they tend to place their needs last. It also affirms that in certain provinces, cultural norms, such as 'purdah', limits women from being able to express their needs. Additionally women also tend to have a chance of going unnoticed in the compensation process as their economic contributions are usually unseen. [xxi]

Similarly, the women interviewed by the Internal Displacement Monitoring Cell in Sindh alleged that access to income-earning opportunities has been their biggest challenge and a major concern for female heads of household. The slow pace of recovery from the extensive damage the floods caused to the agricultural sector was expected to have a major impact on women's employment. Women also lacked the documentation to prove their property rights. The female-headed household reported great difficulty in claiming inheritances, land and possessions left at home when they fled. [xxii] Similar difficulties were faced by internally displaced women and girls across the country who could not go out to receive emergency food aid without being threatened for violating purdah. [xxiii] A 2010 Assessment undertaken by the UNIFEM (UN Women) quoted women as reporting sexual harassment in flood displacement camps where different tribes, families and villages were placed together. [xxiv] Women complained that most health services available in the aftermath of the floods concentrated on primary health care with little specialised focus on reproductive health for women. [xxv] It is essential to take into consideration the immediate and the long-term management measures related to the overall flood-related health management issues.

The literacy rates of women in developing countries are much lower than their male counterparts. A study undertaken by UNICEF in the aftermath of the 2010 floods indicated gender disparities existing in Thatta. The study indicates the trends existing in the enrolment at the primary level before and after the floods. [xxvi] Lack of access to education isn't always related to scarcity of

schools, however, the neglect of gender-specific needs can cause a downward trend seen in the enrolment. Economic costs, social traditions, and religious and cultural beliefs also limit girls' educational opportunities, particularly when it comes to middle and high level schooling. As these social development indicators become worse due to the effects of climate change it is important for the authorities to not only measure them but also address them with sustainable measures.

Given that men and women in the study area are poverty-stricken with dependency on agriculture and natural resources for their livelihoods, natural disasters pose a high risk for them. As evident by the literature reviewed vulnerability seems to be higher for women as they do not have alternative means of employment, and most of all, employed women in the study area are employed in the agriculture sector. Sarah Bradshaw (2004) states "The first step towards ensuring that the specific basic needs of women are addressed over the short and long term is to collect data broken down by sex and age segment immediately after a disaster." The breaking up of data helps researchers understand women-specific needs better, which in turn can help policymakers design and implement women-specific strategies and programmes. [xxvii]

Even though the evidence provided above from both international and local research literature clearly indicates greater vulnerability of women, not much has been done to assess the post-disaster impact of floods on women. Research studies have remained limited to rapid assessments or need assessments and post-disaster impact has not been concentrated upon. In order to design long-term sustainable gender-sensitive recovery programmes, it is crucial to understand the post-disaster impact of floods on women.

Furthermore, research has shown that despite obstacles faced by women, they are already developing effective coping strategies which include adapting their farming practices. Literature, such as WEDO (2003); Gurung et al. (2006); and Mitchell et al. (2007), pointed out that women are very knowledgeable and experienced with regards to coping with climate-related impacts. They are aware of their needs and are very innovative in the face of change. Communities on the frontline in adapting to the effects of natural disasters need but so far often lack adequate information about climate change and adaptation strategies. Due to women's lower literacy levels in many regions, and other barriers to accessing information, such as culture, it is vital that women's needs are addressed in efforts to provide necessary information. [xxviii]

Ariyabandu and Wickramasighe (2005:26) suggest that although women are often more vulnerable to disasters than men (owing to conventional gender responsibilities and relations), they are not just helpless victims as often represented. Women have valuable knowledge and experience in coping with disasters. Yet these strengths and capabilities of women are often ignored in policy decisions and in mitigation, thereby, allowing these valuable resources to go to waste and sometimes creating dependency situations. Ignorance of gender differences in the past has led to insensitive and ineffective relief operations that have not been able to target women's needs and their potential to assist in mitigation and relief work. [xxix]

Taking the above into consideration, this study will help build a holistic understanding of the socio-economic impact of the floods on women, men, girls and boys; along with the overall effect on household welfare and social behaviour.

NOTES:

1. The Intergovernmental Panel on Climate Change (IPCC) is a leading international body for the assessment of climate change and was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in 1988. The Stern Review, named after economist Nicholas Stern, is a report on the effects of climate change. In 2008, the IPCC along with the Stern team released the fourth assessment report; the next report is due in 2014.
2. The World Conference on Disaster Reduction was held in Hyogo, Japan in the year 2005. The Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters concluded at the conference provided a unique opportunity to promote a strategic and systematic approach to reducing vulnerabilities and risks to hazards. It underscored the need for, and identified ways of, building the resilience of nations and communities to disasters. The Framework consisted of a 10-year plan.
3. SAARC member states, following tsunami (2004) and earthquake (2005) in its special session of the SAARC environment ministers agreed that an expert group of the member countries shall meet at Dhaka, Bangladesh to formulate a comprehensive framework on early warning, disaster management and disaster prevention. The complete draft of the framework can be viewed at http://saarc-sdmc.nic.in/pdf/framework.pdf
4. The climate and energy package is a set of binding legislation which aims to ensure the European Union meets its ambitious climate and energy targets for 2020.
5. For detailed information on OECD's efforts please refer to http://www.oecd.org/env/climatechange/46533473.pdf
6. http://www.ga.gov.au/hazards/flood/flood-basics/what.html
7. These figures are from the United Nations Development Programme (UNDP) for the year 2011.
8. These figures are from the United Nations (UN) for the year 2011.
9. The methodology can help forecast future economic losses based on the assessment of immediate flood damages and help in long-term economic relief planning.
10. The International Institute for Sustainable Development defines sustainable livelihoods as being “concerned with people's capacities to generate and maintain their means of living, enhance their well-being, and that of future generations.”
11. It primarily relies on a range of data collection methods, a combination of qualitative and quantitative data indicators and, to varying degrees, application of sustainable livelihoods framework. The framework employs the Livelihood Assessment Tracking (LAST) System to measure changes in coping and adaptive capacity. The quantitative and qualitative indicators are combined with the LAST system for its use; the LAST system is developed through creation of development indicators by the help of the local community.

12. For further understanding refer to; Elasha, B.O, et al (2005) Sustainable livelihood approach for assessing community resilience to climate change: case studies from Sudan, AIACC Working Paper No.17 August 2005.
13. For a detailed discussion refer to WEDO (2007); Commission on the Status of Women (2008); Carvajal et al (2008); Bridge (2008). Also see Du W, FitzGerald GJ, Clark M, Hou XY. (2010). Health impacts of floods, Journal of Prehospital and Disaster Medicine, 25(3) pp, 265-272; Enarson, E. & Hearn-Morrow, E. (1998). The gendered terrain of disaster: through women's eyes, Praeger, London; Fordham, M. H. (1998). Making women visible in disasters: problematising the private domain, Disasters 22(2), 126-143; Morrow, B. H. (1999). Identifying and mapping community vulnerability, Disasters 23(1), 1-18.
14. Asian Development Bank (2001) Country briefing paper: Women in Bangladesh, cited in Cannon, T. (2002) Gender and climate hazards in Bangladesh, in Masika, R. (ed.) (2002) Gender, development and climate change. Oxford: Oxfam.
15. Rapid gender assessment needs (RGNA) report by UN Women (UNIFEM) attempted to substantiate findings of the 2010 floods in Pakistan. It raised flag issues emerging from gendered readings of early data. The document aimed to provide a rapid gender assessment of the humanitarian crisis as well as the initial response to it.

CHAPTER 3

PRIMARY SURVEY METHODOLOGY

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Keeping in view the aim and objectives of the study, this chapter provides the details related to its methodological framework, sample composition, administration of primary survey, scope and coverage of data collected through the survey, and the various components of survey instruments. It also presents a summary of information collected from secondary sources on the effects of floods in Thatta.

METHODOLOGICAL FRAMEWORK

Chart 3.1 illustrates the methodological framework of the study. It is constructed on the basis that the floods in 2010 severely affected a large proportion of the population living in district Thatta. These effects were not limited to the livelihoods and daily routines of women, men, girls and boys at the time of the catastrophe, but also affected their future livelihoods, earning potential and overall well-being. The study analyses these aspects examining the damages caused by the floods and their impact on the affected population by primarily focusing on three major areas. In each of the following three areas, the study evaluates the effects on both women and men.

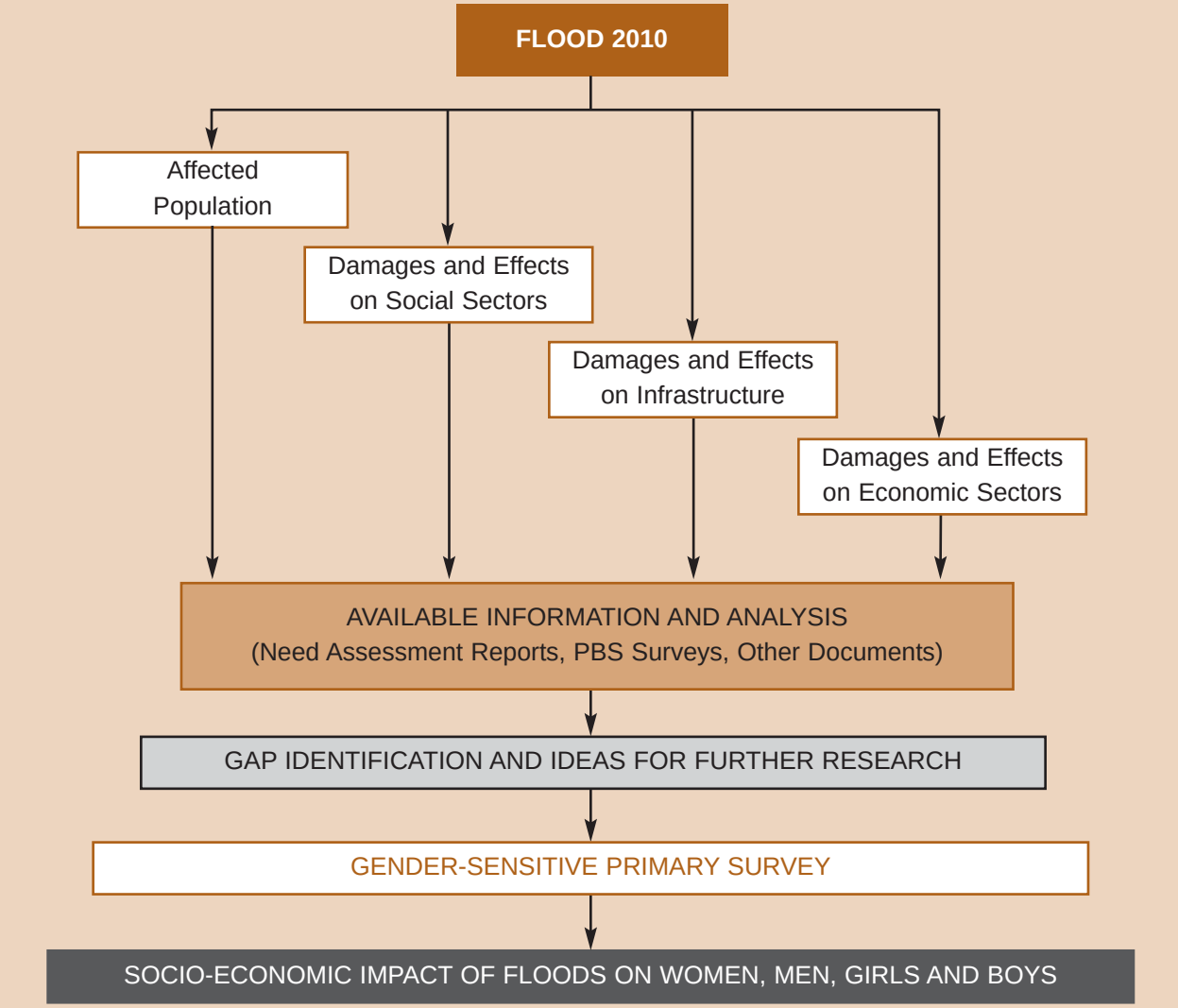
- Social sectors (health and education)
- Infrastructure (transport and communication)
- Economic sectors (agriculture, industry and business)

The initial analysis is based on the available information provided by secondary sources including the data and reports prepared by the government, NGOs, donors and other stakeholders. These sources helped in collecting the information on pre- and post-disaster conditions of district Thatta and helped in assessing the damages and losses caused by the floods. The initial review and information gaps thus provided the justification for this research. Moreover, they also helped in designing a representative gender-sensitive household survey conducted using a structured questionnaire in the flood affected areas of Thatta. The quantitative survey, while allowing the verification of available information and collection of missing information, facilitates a detailed assessment of the magnitude of socio-economic effects of disaster and its gender implications as noticed among the affectees in eight talukas of the district.

ANALYSES BASED ON SECONDARY SOURCES

Broadly speaking, there is a scarcity of district level data in Pakistan. The Pakistan Bureau of Statistics (PBS), formerly known as the Federal Bureau of Statistics (FBS), generally collects and provides provincial and national indicators based on provincially representative data. However, Pakistan Social and Living Standard Measurement (PSLM) Survey is an exception to this. The PBS-administrated PSLM Survey is designed to provide social and economic indicators at provincial and district levels every alternate year. The district level PSLM surveys of 2008-09 and 2010-11 are considered relevant for this study since they have been treated as the pre- and post-flood surveys, thus, allowing for a comparison of basic socio-economic indicators of district

Chart 3.1
Methodological Framework



Thatta. In addition to this, the Provincial Disaster Management Authority (PDMA) provided information about the total affected population and damages caused by floods in 2010. The United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) also provided data on the flood affected talukas, union councils (UCs) and dehs (villages). Though other survey-based studies are also available, the above-mentioned sources were used for the analyses.

Affected Population and Areas

According to the PDMA, 50 percent of the total population, 1.5 million, residing in district Thatta in the year 2010 were affected by the floods. Table 3.1 gives the total and flood affected number of UCs and dehs in each of the talukas in district Thatta. Of the total 55 UCs in talukas of district Thatta, 34 were affected by the floods while more than 50 percent of the dehs, out of 670 dehs, in all the UCs were affected.

Table 3.1
UCs and Dehs Affected by the Floods 2010: Thatta

	Number of UCs		Number of Dehs		
	Total	Flood Affected UCs	Total Dehs	Flood Affected Dehs	Percentage Share
Thatta	13	6	69	34	49.3
Mirpur Sakro	10	0	92	0	0.0
Ghora Bari	5	4	62	20	32.3
Keti Bunder	1	1	42	4	9.5
Sujawal	6	6	73	72	98.6
Mirpur Bathoro	8	5	65	17	26.2
Shah Bunder	5	5	93	36	38.7
Jati	6	6	133	131	98.5
Kharo Chan	1	1	41	30	73.2
Thatta district	**55**	**34**	**670**	**344**	**51.3**

Source: United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA)

Sujawal and Jati were the worst affected talukas of district Thatta where all the UCs and dehs, constituting the UCs, were devastated by floods. In taluka Kharo Chan, 73 percent of the dehs in the only UC were affected. In taluka Thatta, the floods disrupted six UCs consisting of 34 Dehs (villages) out of 13 union councils. Moreover, in these six UCs were some 49 percent of total dehs (villages). Comparatively in taluka Shah Bunder, only 39 percent of the total dehs were partially affected in all of its UCs. Similarly, talukas Ghora Bari, Mirpur Bathoro and Keti Bunder also were impacted partially while Mirpur Sakro was the only taluka that remained unaffected.

Pre- and Post-Flood Enrolment Rates

Table 3.2, while presenting gross and net enrolment rates, indicates a sharp decline for both boys and girls. In the case of boys, gross enrolment rates at primary level declined from 94 percent to 78 percent and net enrolment rates at the primary level from 50 percent to 40 percent, whereas in the case of girls they declined from 50 percent to 44 percent and from 30 percent to 28 percent respectively.

Similarly, gross and net enrolment rates at the secondary level for boys declined from 32 percent to 29 percent and from seven percent to five percent respectively, while for girls they declined from 17 percent to 12 percent and from four percent to three percent respectively. However, gross enrolment rate at the matric level remained the same, at 30 percent and 19 percent for boys and girls respectively. While the net enrolment rate at the matric level increased for males by four percentage points, it declined for females by one percentage point.

Indicators of Multiple Deprivations: Pre- and Post-Flood

Even prior to the floods, Thatta was a socio-economically deprived district of Sindh. A recent study undertaken by SPDC indicates that Thatta is the second most deprived district of Sindh[1].

Table 3.3 shows a comparison of the socio-economic situation of the district for 2008-09 and 2010-11 reflected in the estimates of Indices of Multiple Deprivations. The indices clearly portray worsening conditions, particularly in the sectors of education and health. For example, the

Table 3.2
Pre- and Post-Floods 2010 Gross and Net Enrolment Rates: Thatta

(Percent)

	Gross Enrolment Rate			Net Enrolment Rate		
	Boys	Girls	Both	Boys	Girls	Both
Gross Enrolment Rate: Primary (Age 5-9)				*Net Enrolment Rate: Primary (Age 5-9)*		
2008-09	94	50	75	50	30	41
2010-11	78	44	62	40	28	34
Difference	-16	-6	-13	-10	-2	-7
Gross Enrolment Rate: Middle (Age 10-12)				*Net Enrolment Rate: Middle (Age 10-12)*		
2008-09	32	17	25	7	4	6
2010-11	29	12	22	5	3	4
Difference	-3	-5	-3	-2	-1	-2
Gross Enrolment Rate: Matric (Age 13-14)				*Net Enrolment Rate: Matric (Age 13-14)*		
2008-09	30	19	25	1	3	2
2010-11	30	19	25	5	2	4
Difference	0	0	0	4	-1	2

Source: PSLM Survey 2008-09 and 2010-11

Table 3.3
Indicators of Multiple Deprivations: Thatta

(Percent)

	2008-09	2010-11	Difference
Education			
Illiteracy Rate (10 years and above) - Male	43.9	50.3	6.4
Illiteracy Rate (10 years and above) - Female	78.1	81.1	3.0
Out of School Children (5-9 Years) - Male	42.0	54.9	12.9
Out of School Children (5-9 Years) - Female	68.0	70.7	2.7
Health			
Lack of Immunization	1.6	5.0	3.3
No Prenatal Health Care	50.3	34.9	-15.3
Did not Receive Tetanus Toxoid Injection	41.4	61.7	20.4
No Postnatal Health Care	84.2	93.1	8.9
Housing Quality			
Household with Inadequate Wall Structure	64.2	71.4	7.2
Household with Inadequate Roof Structure	85.1	86.8	1.7
Households without latrine facility	55.9	37.7	-18.2
Congested Household (Households with only one room)	37.0	36.4	-0.6
Housing Services			
Households with no electricity	58.3	35.4	-22.9
Households using inadequate fuel for cooking (wood, coal, etc.)	78.0	85.8	7.8
Households using unsafe (not covered) water	38.2	31.3	-6.9
Households with no telephone connection (landline or mobile)	57.1	35.3	-21.7

Source: SPDC estimates based on PSLM Survey 2008-09 and 2010-11

proportion of the illiteracy rate, both among males and females, and boys and girls has increased. While the proportion of women who did not get prenatal care declined, the proportion of women who did not get postnatal health care increased. The proportion of the affectees with no immunisation and Tetanus Toxoid injection also increased by 3.3 and 20.4 percentage points respectively.

On the other hand, the quality of housing presents a mixed picture where the proportion of households with inadequate wall and roof structures has increased, while those without latrine facility and with only one room facility declined. The housing services indicate an improvement as the proportion of households with no electricity, unsafe water and no telephone connection also declined. However, the proportion of households having inadequate fuel for cooking has increased. Clearly, the difference in the two time periods indicates a mixed trend; while most of the indicators related to health, education and housing quality worsened, housing services improved.

Damages Caused to the Physical Infrastructure

Table 3.4 indicates the volume of the damages caused by the floods in the year 2010. As can be seen, 116 thousand houses were damaged amounting to a loss of Rs14.6 billion. Out of these, the houses in the rural areas were 93 thousand whereas those in urban areas were 23 thousand. In monetary terms, the total loss to the houses was Rs9.3 billion in rural areas and Rs5.2 billion in urban areas. In regards to damages to roads, the floods ruined 274 km of highways, 150 km of farm-to-market road and local roads each, nine bridges and 37 culverts.

Table 3.4
Damage Caused to the Physical Infrastructure by the Floods in 2010

	Number (in 000)	Cost (in Rs Billion)
HOUSES		
Rural	93	9.3
Urban	23	5.2
Total	116	14.6
ROADS		
Highways (km)	274	-
Farm-to-market road (km)	150	-
Local roads (km)	150	-
Bridges (number of)	9	-
Culverts (number of)	37	-

Source: Provincial Disaster Management Authority (PDMA) Government of Sindh http://flood2010.pdma.gos.pk/DamagesDetail.aspx)

Table 3.5 shows gender-wise distribution of the total schools and the schools damaged in 2010-11. It indicates that there are 3306 schools in Thatta out of which 42.5 percent were coeducational, 42.2 percent were for boys and only 15.3 percent were girls schools. It also indicates that, overall, 696 schools were damaged by the floods. Out of the total 406 (58.3 percent) were for boys, 66 (9.5 percent) were for girls and the remaining i.e. 224 (32.2 percent) had coeducation.

Table 3.5
Gender-wise Status of Schools in 2010-11

	Number	Percentage
Total Schools		
Boys	1,394	42.2
Girls	507	15.3
Mixed	1,405	42.5
Total	**3,306**	**100.0**
Damaged Schools		
Boys	406	58.3
Girls	66	9.5
Mixed	224	32.2
Total	**696**	**100.0**

Source: Reform Support Unit, Education and Literacy Department Government of Sindh, Karachi

Economic Losses Caused by the Floods

The major crops grown and produced by the district include rice, sugarcane, wheat and cotton. Table 3.6 presents the losses incurred due to the floods. The numbers are indicative of the loss of some 50 percent and 33 percent of the crop area of rice and sugarcane respectively in the district of Thatta. The loss resulted in a production loss of 155 thousand metric tons in production of rice crop, amounting to Rs2.5 billion, and 775 metric tons in the production of sugarcane crops, amounting to Rs 2.9 billion.

Table 3.6
Damage Caused to Crops due to the Floods in 2010

	Area (in Acres)		Loss in Production	Cost
	Total	Damaged	(Metric Tons)	(Rs Billion)
Rice	173,460	86,730	154,813	2.52
Sugarcane	101,521	33,600	775	2.91
Cotton	2,012	27	36	0
Total	**276,993**	**120,357**	**155,624**	**5.43**

Source: Provincial Disaster Management Authority (PDMA) Government of Sindh (http://flood2010.pdma.gos.pk/DamagesDetail.aspx)

Damage to livestock and poultry is given in Table 3.7. Altogether 6.5 thousand animals were affected by floods in the district of Thatta of which 60 percent were large animals (buffalos, cows etc.) and 40 percent were small animals (goats, sheeps, etc.). Cost-wise it amounts to Rs230 million in the case of large animals and Rs30 million for small animals. The floods also damaged some 400 farms, costing Rs60 million, and approximately 2.5 million birds, costing Rs500 million.

Table 3.7
Damage Caused to Livestock and Poultry due to the Floods 2010

	Number	Cost (in Rs Million)
LIVESTOCK		
Large animals	3,889	230
Small animals	2,567	30
Total	6,456	260
POULTRY		
Farms damaged	400	60
Birds perished	2,500,000	500
Total	-	560

Source: Provincial Disaster Management Authority (PDMA) Government of Sindh (http://flood2010.pdma.gos.pk/DamagesDetail.aspx)

The analysis based on secondary sources so far presents various effects of floods, with or without gender-sensitive indicators, on district Thatta considering it a unit. The actual gender-sensitive socio-economic impact of the floods on the affected areas of district Thatta remained unknown. Consequently, this study aims to bring forward the type of the gender differentials of the impact of floods by focusing on the population residing in the flood affected areas of district Thatta.

SAMPLE COMPOSITION AND ADMINISTRATION

A field survey was conducted in the eight flood affected talukas of the district. Data on these talukas, union councils and dehs was collected from the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) . The data showed that all union councils of talukas Sujawal, Jati, Shah Bunder, Kharo Chan and Keti Bunder were affected. 80 percent union councils of taluka Ghora Bari, 63 percent union councils of taluka Mirpur Bathoro, 46 percent union councils of taluka Thatta were affected.

Table 3.8
Distribution of Surveyed Households by Taluka

Taluka	Households Survey	Percentage
Sujawal	81	16.2
Jati	79	15.8
Ghora Bari	64	12.8
Mirpur Bathoro	64	12.8
Shah Bunder	64	12.8
Kharo Chan	64	12.8
Thatta	53	10.6
Keti Bunder	32	6.4
Thatta District	**501**	**100.0**

Source: SPDC Survey 2012

Since the sample design was based on this affected population in union councils and dehs, a disproportionate coverage of talukas was considered for the survey. Table 3.8 shows the distribution of total households surveyed in each taluka.

Overall, 501 households were surveyed with a sample of 81 households from taluka Sujawal, which had the highest proportion of the affected population. 79 households were surveyed from taluka Jati which, geographically, is the largest taluka of the district, and consisted of the second highest proportion of affected population. Whereas, taluka Keti Bunder had the smallest proportion of the affected population hence only 32 households were enumerated from there. Mirpur Sakro was not selected as there was no affected household.

SCOPE AND COVERAGE

The household survey was conducted between May-June 2012. Information was collected from the head of the household and the lady of the house (spouse of head of the household) who were part of the family at the time of floods. The recall method was applied to collect information related to floods. It should be noted that the two time periods used for reference are 'before flood' (BF) and 'at the time of the survey' (ATS). The former refers to the time just before the floods, while, the latter refers to the situation at the time of the survey. Two separate questionnaires were developed for male and female respondents. Following the approach taken by PBS for household surveys like PSLM Survey and other SPDC surveys, male respondents were asked to give basic information for all the male members of the household above nine years of age. Female respondents gave information on all female members and male members below 10 years of age. Information on household income and expenditures, housing, assets and land ownership was collected from male respondents. Information on public services, psychological effects, changes in gender roles was collected from both respondents.

Since the majority of the population residing in the district speaks the Sindhi language, the questionnaire was also developed in the latter. Table 3.9 shows the distribution of respondents by language of interview. It also shows that all female respondents gave interviews in the Sindhi language while only three male respondents responded in the Urdu language. Due to the language barrier, the questionnaire was administered in the Sindhi language.

Table 3.9
Percentage Distribution of Respondents by language of interview
(Percent)

Launguage	Male	Female	Total
Urdu	0.60	0	0.30
Sindhi	99.40	100	99.70
Total	100	100	100

Source: SPDC Survey 2012

The head of the households were asked about their caste. Table 3.10 shows the distribution of the head of the household by caste. Table 3.10 shows 12.38 percent of the head of the households belong to Mallah caste, followed by Jat caste at 7.19 percent.

Table 3.10
Distribution of Caste of Head of the Household
(Percent)

Caste	Frequency	Percent
Mallah	62	12.38
Jat	36	7.19
Shaikh	27	5.39
Mir Bahar	26	5.19
Shoro	24	4.79
Theem	24	4.79
Others[2]	302	60.27
Total	501	100

Source: SPDC Survey 2012

SURVEY INSTRUMENTS

Keeping in view the aim and objectives of the study, the main instruments for the survey were two separate structured questionnaires designed

to collect gender-sensitive information related to various socio-economic indicators. The objective was to collect individual and household information from both males and females separately that could be used to assess and evaluate the effects of the floods on household welfare and behaviour. The questionnaires focused on various socio-economic dimensions of household well-being including education, health, fertility, psychological stress, employment, sources of income, infrastructure damage caused by floods, capital losses, challenges encountered at the relocated sites, and the like.

Design of Male Questionnaire

Section 1. Roster of the 10 Years-and-Above Male Members of the Household

This section was designed to collect information related to basic characteristics of household male members who are older than 10 years of age and were part of the family at the time of the survey. These include listing of names, age, sex, residential status, marital status and relation to the head of household.

Section 2. Education

This section provides information about the literacy and schooling including educational institution, types and reasons for not attending any education institution for the household members mentioned in male household roster for the two time periods.

Section 3. Health at the Time of Interview

This section aimed to collect information about the general level of the health of household members, the utilisation of health facilities and level of satisfaction with the usage of public and private health services at the time of survey.

Section 4. Health at the Relocation Site

The purpose of section four was to gather information about health challenges faced at the relocation site. It includes overall health of household members, the utilisation of health facilities, and level of satisfaction, particularly, with the public and private health services provided at the relocation site.

Section 5. Economic Activities

One of the objectives of the primary survey was to collect information about pre- and post-economic activities of the 15 years-and-above household members. This section is based on the information provided by the respondents on the nature of economic activities (paid or unpaid) of all male household members at the time of the survey and prior to the floods.

Section 6. Questions Related to the Floods

In this section information on the immediate effects of floods in 2010 was collected. Questions were asked related to the duration of floods in the respondents' respective areas, challenges faced in reaching the relocation sites, mode of commutation and compensation received by households from the government and civil society for the damages caused by the floods.

Section 7. Change in Household Demography
The purpose of the section was to collect information regarding the household members who were part of the family at the time of floods (2010) and are not mentioned in the household roster.

Section 8. Household Expenditures and Income
In this section information was collected about the major sources of income and expenditures during the current year but before the survey.

Section 9. Housing and Access
In this section, information related to the structure of the house, type of material used in the roof and walls, household utilities, and access to facilities and public services is collected for the two time periods i.e. at the time of the survey and at the time of the floods.

Section 10. Ownership of Assets
This particular section collected information on the value, sex disaggregated ownership of household/business items both at the time of the interview and the floods.

Section 11. Ownership of Agriculture and Non-Agriculture Land
The section helped collect the gendered information about the ownership of agriculture, and non-agriculture, land including residential and commercial in both the time periods.

Section 12. Impact of the Floods
This section helps in bringing forward the information on the impact of floods on the respondents' mental health, household responsibilities and assets and production inputs.

Section 13. Coping
This section mainly focuses on the information regarding the involvement of male members of the household to cope with the negative effects of the floods in the year 2010.

Design of Female Questionnaire
Section 1. Female Roster Including Boys Under 10 years
This section was designed to collect information related to basic characteristics of all female members from every household in the sample as well as male members aged less than 10 years and part of the family at the time of the survey. Included was the listing of names, age, sex, residential status, marital status and relation to the head of household.

Section 2. Education
In this section, information is collected about the literacy and schooling including educational institution, types and reasons for not attending any education institution for the household members mentioned in the female-household roster for the two time periods.

Section 3. Health at the Time of Interview
This section, basically, collects information on the present health conditions of household members, the utilisation of health facilities and their level of satisfaction with public and private health services.

Section 4. Health at the Relocation Site
The purpose of this section was to gather information about health challenges faced at the relocation site. It includes overall health conditions of household members, the utilisation of health facilities and level of satisfaction with public and private health services at the relocation site. The section also has a sub-section focusing on the problems faced by pregnant women during the relocation and at the relocation site at the time of the floods. This sub-section was for ever married women only.

Section 5. Economic Activities
One of the objectives of the primary survey was to collect information about the pre- and post-economic activities of the 15 years-and-above household members. This section has helped in bringing forward the information on the type of economic activities (paid or unpaid) of all female household members at the time of the survey and prior to the floods.

Section 6. Questions Related to the Floods
In this section, information on immediate effects of floods was gathered. Questions were asked related to the duration of floods in the respondents' respective area, the challenges faced in reaching to the relocation sites, mode of commutation and compensation of damages received during the floods in 2010 both from the government and civil society.

Section 7. Change in Household Demography
The section collected information on household members who were part of the family at the time of floods in 2010 and are not mentioned in the household roster.

Section 8. Access and Usage of Public Services
In this section, information related to access to public services is collected for the two time periods i.e. at the time of the survey and at the time of the floods.

Section 9. Impact of the Floods
This section particularly helps in bringing forward information on the impacts of the floods on the respondents' mental health, household responsibilities, assets and production inputs.

Section 10. Coping
This section focuses on the involvement of female members of the household to cope with the negative effects of floods.

Pilot Survey, Training of Field Staff and Development of Other Instruments
Prior to the actual survey, a pilot survey was conducted to test the validity of the questionnaire. Pilot testing consisted of interviews with 20 male and female respondents living in the flood affected suburban areas of taluka Thatta. The pilot helped in providing valuable feedback following which the questionnaire was restructured.

The enumerators were sensitised to the obstacles/difficulties that could be encountered during the survey. A three-day training session for all enumerators was held in Thatta city in order to

ensure the quality of collected information. It was also made certain that on every visit a senior member of the SPDC team accompanied the locally trained enumerators. A 'Manual of Instruction' for field enumerators and supervisors was prepared for their guidance. The manual helped in explaining the rationale of the survey and answering certain questions. Further, in order to ensure the quality of data, a coding manual was also prepared for data entry and a data entry software was developed. Data entry of forms was checked through various statistical checks and the data was cleaned to ensure quality analysis.

Translation of the Questionnaire

During the pilot survey it was discovered that local enumerators were not comfortable with both English and Urdu. Therefore, prior to the actual survey the male and female questionnaires were translated into the Sindhi language to make sure that locally trained Sindhi-speaking enumerators and respondents do not face any difficulties during the exercise.

NOTES:

1. Haroon Jamal (2012), Districts indices of multiple deprivations for Pakistan, 2011.
2. Others include Babber, Badin Pota Das, Chakai, Dars, Dhandal, Gah, Gandro, Gharano, Ghoota, Ghoto, Guggo, Karo, Katyar, Khari, Khaskheli, Laghari, Mar Ghar Baloch, Matai, Muhajio, Narejo, Odhijo, Odhu, Panyar, Sehto, Sobani, Sodai, Solangi, Soomro, Sorjo, Syed, Theemor, Udhejo and Walhari.

CHAPTER 4

THE STATE OF EDUCATION AND HEALTH IN FLOOD AFFECTED AREAS

CHAPTER 4 THE STATE OF EDUCATION AND HEALTH IN FLOOD AFFECTED AREAS

Flooding causes both tangible[1] and intangible[2] losses due to which society, in general, and the affected population, in particular, incur direct and indirect costs. It slows the overall pace of social and economic development, leading the affected population to obscurity. Intra-household changes[3] often modify the living patterns of the (all age groups) affected population. The subsequent chapters discuss the additional burden borne by the men and women of district Thatta and several other effects of the floods on their lives and the lives of other household members.

This chapter limits itself to the implications of floods on the education and health of the sample population. Enrolment ratios and patterns seen in the literacy rates before and after the floods have been compared and analysed. Similarly, prevalence of sickness or injury during the two time periods has also been examined along with the change in the profile of households.

AFFECTED POPULATION AND DEMOGRAPHIC STRUCTURE

In order to set the context for education and health analysis, it is important to understand the various aspects of the demography of the flood affected areas. This particular section presents the changes that occurred in the sex ratio[4], household size[5], proportion of males and females[6], age-specific population, dependency ratio[7] and the reasons for change.

Ratio of Male and Female Population

Demographic changes, as a consequence of floods, are mainly due to deaths either by drowning or an increased incidence of illness; early marriages, especially in the case of girls; and outward migration[8] caused by economic deprivation, and the loss of income and employment opportunities. Generally, men of the affected households migrate to other cities (or non-affected areas) in search of work or employment leaving the women to shoulder the responsibilities of the family.

The survey findings show a slight change in the sex ratio and proportions of male and females living in the household. The sex ratio decreased slightly from 1.10 to 1.08 (Table 4.1) showing a decline in the proportion of the male population (0.02 points), yet the proportion of the male population remains higher than the female population.[9] The reasons attributed to this are poor health and the low nutrition levels of women in Pakistan. The changes, however slight they may be, added to the burden of family and household responsibilities for women in the absence of male members – in and out of the house.

Table 4.1
Sex Ratio and Household Members Before the Floods (BF) and at the Time of Survey (ATS)

Gender	BF	ATS
Sex Ratio	1.10	1.08
Male (%)	52.2	51.8
Female (%)	47.8	48.2

Source: SPDC Survey 2012

Family Size

One important aspect of demographic analysis noticed is the change in family size. The family size is considered to be a crucial indicator for targeting the provision of public services at the household and community level. The decomposition of changes in family size explains the

reasons for growth in family size. The family size increased from 5.97 to 6.21 (Table 4.2) persons between the two time periods[10]. The table also shows the reasons for a decrease in the sex ratio. The male and female members per household before the floods were 3.12 and 2.85 respectively i.e. male members were 0.27 units higher than female members. In the two-year time period, 0.16 male members and 0.18 female members have been added to the family while 0.06 male and 0.04 female members left the family. The average number of male members per household is 3.22, whereas, for female members it is 2.99. Thus, male members are 0.23 units higher than females. The reason for the higher proportion of female entrants and low proportion of females leaving the family that contributed towards a rise in female proportion are given in Table 4.3.

Table 4.2
Decomposition of Changes in Family Size
(No. of persons)

Decomposition	Male	Female	Both
Members per household BF	3.12	2.85	5.97
Entrants per household (plus)	0.16	0.18	0.34
Person left family per household *(minus)*	0.06	0.04	0.10
Members per household ATS	3.22	2.99	6.21

Source: SPDC Survey 2012

Table 4.3
Reasons for Inclusion and Exclusion in the Family After the Floods (Male and Female Respondent)
(Percent)

Decomposition	Male	Female	Both
for Inclusions:			
Born after 2010 Flood	100.0	98.9	99.4
Became family member after marriage	0.0	1.1	0.6
Total	**100.0**	**100.0**	**100.0**
for Exclusions:			
Death	84.4	81.0	83.0
Marriage	3.1	19.0	9.4
Due to Work	9.4	0.0	5.7
Family conflict	3.1	0.0	1.9
Total	**100.0**	**100.0**	**100.0**

Source: SPDC Survey 2012
Note: Number of inclusion are greater than number of exclusions

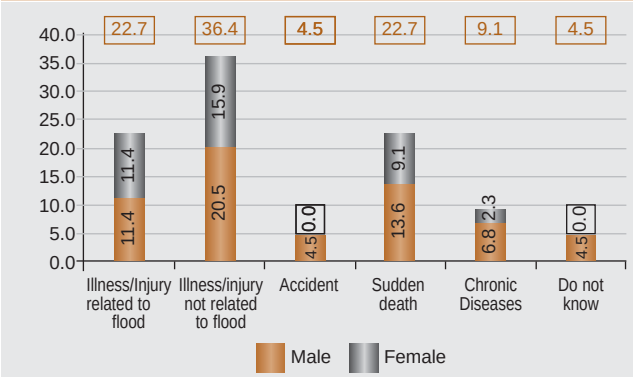
In the majority of cases, and for all male members, the addition has been due to birth after the floods. Only 1.1 percent of the females became part of a family after the floods due to marriage. This negates the popularly held view that floods increased child marriages. Whereas, the exclusions from the family were mainly due to the death of a household member (83.0 percent); followed by 'left home due to marriage' (9.4 percent); and 'left home due to work/employment' (5.7 percent). In 1.9 percent of the cases the household member opted to leave the home due to family conflict.

The table shows that none of the female household members left the family for employment as against 9.4 percent of the males. The socio-cultural norms being followed in rural areas prohibit and restrict the female's movement outside the house, even for employment. To supplement the family income, women are predominantly reliant on the informal sector. The sociological factors restricting their movement, however, are not being discussed in order to keep the study focussed. Clearly, even the large-scale devastation caused by the floods did not compel the 'displaced and later rehabilitated' females to step out of their 'comfort zone' and work. Further, displacement disabled them from participating in informal work.

The table also shows that 3.1 percent of males left their families and lived separately after marriage. It has been reported that cases of early age marriages increased after the floods[11]. However, the data gathered does not support these reports as it shows that the lowest age of a girl getting married was 16 years.

Chart 4.1 shows the gender distribution of the reasons of deaths during the post-flood period – around 22.7 percent of the deaths were caused by the floods. The reasons cited were illness or injuries suffered due to drowning; infections or diseases that spread due to stagnant waters; and injuries caused by the destruction of houses and other buildings. Equal proportions of deaths were reported among men and women, indicating equal threats to the lives of both.

Chart 4.1
Percentage Distribution of Reason of Death After the Floods
(Male and Female Respondents)
(Percent)



Source: SPDC Survey 2012

In a higher percentage (36.4 percent) of cases, deaths were not related to the floods but caused by illness / injuries. Though, the deaths have not been linked to the floods by the respondents it cannot be said with certainty whether they were familiar with the mid- and long-term effects of floods in the spread of disease and overall health conditions. The proportion of males is 4.6 percentage points higher and was more prominent for ages between zero-four years (nine cases) and ages between 70-85 years (five cases). 'Accident' was cited as a cause of death in some 4.5 percent of cases – all were men. 'Sudden death' was reported in 22.7 percent of cases. As can be seen, it was higher in the case of males (13.6 percent). The reason cited was sudden heart failure or natural death or reason unknown to the respondents. Chronic diseases[12] were reported in 9.1 percent of cases. However, this does not indicate a lower incidence of chronic disease. The nature and type of the latter was not shared by the respondents, however, only two cases were reported of hepatitis and cancer.

Table 4.4
Percentage Distribution of Household Members by Age Groups and Sex
(Percent)

	BF			ATS		
	Male	Female	Both	Male	Female	Both
Infants (0-1)	0.8	0.8	1.5	2.7	2.9	5.6
Children (2-4)	7.5	6.9	14.4	5.0	4.9	9.9
Primary school-going age (5-9)	9.9	8.9	18.8	11.5	8.7	20.2
Secondary school-going age (10-14)	6.0	5.2	11.2	5.1	6.2	11.3
Youth[13] (15-24)	8.7	8.0	16.6	8.2	7.2	15.4
Adults (25-44)	12.4	12.4	24.8	12.3	12.3	24.7
Adults (45-59)	4.5	4.4	8.9	4.3	4.2	8.5
Age 60 and above	2.6	1.2	3.8	2.7	1.8	4.4
Children (0-14)	24.1	21.7	45.9	24.4	22.7	47.0
Adult (15-59)	25.5	24.9	50.4	24.8	23.8	48.6
Age 60 and above	2.6	1.2	3.8	2.7	1.8	4.4
All age groups	52.2	47.8	100.0	51.8	48.2	100.0

Source: SPDC Survey 2012

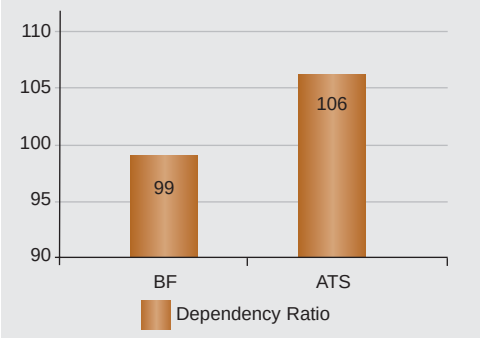
Age-specific Population and Dependency Ratio

Children[14] constituted the majority of the population: 45.9 percent before the floods and 47.0 percent at the time of the survey. With the average population growth of Pakistan being 1.8 percent[15] per annum, child population continues to grow. The rapid increase in the population continues to

pose a serious challenge for the government in improving the health sector. It also contributes to the poor health of women of reproductive age besides keeping them out of productive work. The proportion of boys in the age group (zero-14) increased from 24.1 percent before the floods to 24.4 percent at the time of the survey. While that of girls increased from 21.7 percent to 22.7 percent. The increase has been higher in female birth rate. Adults (15 to 59 years of age) constituted 50.4 percent of population prior to the floods which is now, after a decline of 1.8 percentage points, 48.6 percent.

The increase in the proportion of children and 60-plus age population is reflected in the increasing dependency ratio[16] (Chart 4.2). Dependency is computed as population under 15 years of age and above 59 years of age divided by population between 15 to 59 years of age. Child dependency constitutes a larger proportion of the total dependency ratio. The economic implications of increased dependency are mainly borne by the male adult population.

Chart 4.2
Dependency Ratio Before the Floods and at the Time of Survey



Source: SPDC Survey 2012

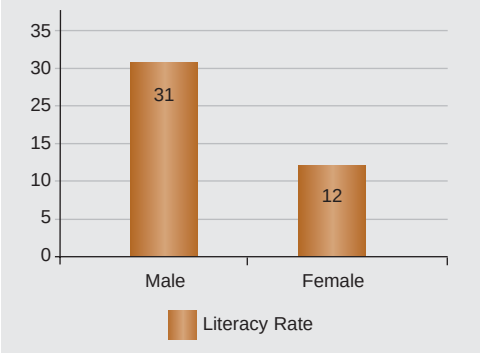
ADULT LITERACY AND SCHOOLING

According to the Department of Education and Literacy, Government of Sindh,[17] 21.05 percent of the total schools of district Thatta were damaged due to floods and proportionately more damage occurred to secondary level schools. The same report also indicates that boys' schools (29.1 percent) were damaged more than girls' schools (13.0 percent) leading to a rise in the dropout rate and teacher absenteeism. This section focuses on the impact of floods on the education sector. Respondents were asked about their current level of education acquired, enrolment status, type of institution attended, level of satisfaction with the quality of education provided, and the reasons for not attending school (if applicable).

Literacy Rates

The literacy rate is a stock indicator to evaluate human capital. Chart 4.3 indicates intense gender disparity in the literacy percentage among the population (10 years and above). Clearly, the importance of girls' education continues to be undermined both by the families and the communities other than poverty being the reason. PSLM data also shows a decline of three percentage points i.e. from 34 percent to 31 percent between 2008-09 and 2010-11 for both the sexes. The literacy estimates of SPDC are approximately ten percentage points lower than what are reported in PSLM for the year 2010-11. The difference, perhaps, is due to the fact that the survey undertaken by SPDC was restricted to flood affected areas – where the conditions have further deteriorated due to the damages caused by the floods.

Chart 4.3
Literacy Rates - Population 10 Years and Older
(Percent)



Source: SPDC Survey 2012

Primary Education

Table 4.5
Gross Primary Enrolment Ratio and Out-of-School Children (Age 5 - 9 Years)
(Percent)

Gender	Gross Primary Enrolment Rtio			out-of-school children
	BF	ATS	Difference (ATS-BF)	
Boys	39.9	49.3	9.4	61.6
Girls	29.7	46.3	16.6	68.9
Both	35.1	48.0	13.0	64.7

Source: SPDC Survey 2012

According to the Government of Sindh,[18] 20 percent of primary schools were damaged by floods in 2010, which would prevent children from going to school and their schools years being wasted. To minimise the adverse affects, some non-governmental organisations[19] opened make-shift schools in relief camps and within the communities at the time of floods. The involvement of non-governmental organisations with the communities also helped in creating awareness among the local communities about the importance of education both for girls and boys. This section looks into the changes in the enrolment ratios of boys and girls for primary and secondary levels caused by the floods and the role played by the non-governmental sector in filling the gaps. The gross primary enrolment ratio (GPER) is taken to be total primary enrolment divided by population corresponding to the enrolment rate[20]. The survey data shows an improvement in the GPER from pre-floods to present times, an increase of 13.0 percentage points. Welcomely, GPER for girls increased by 16.6 percentage points while that of boys increased by 9.4 percentage points, decreasing the gender gap from ten percentage points to three percentage points. The improvement can be attributed to the efforts of non-governmental initiatives, with the affected population during their stay at relief camps, on the significance of girls' education.

Out-of-school children are calculated by netting out the number of primary school-age children enrolled in primary level from total population of primary school-age children[21]. Though the findings show a slight improvement in GPER (13 percentage points), they indicate that 65 percent of primary school-going age population were out of school (61.6 percent boys and 68.9 percent girls).

Table 4.6 based on the responses of the respondents indicates both the demand and supply side reasons for not attending school for population aged five to nine years (primary school-going age). The majority of the respondents said their children were too young to go to school during both the time periods. Some 24.8 percent cited the reason in the case of the girl child, while 21.5 percent attributed the same reason for keeping the male child away from school at the time of the survey. The main concerns cited in the case of the male child were the poor quality of schools and education (20.7 percent of responses) – a fact indicating that households value boys' education more than girls' education and demand better schooling for boys. In the case of the girl child, the second highest reason cited for not sending the child to school (15.3 percent) was the distance to the school. Due to cultural barriers, parents are not willing to let their children, especially girls, to travel long distances for school. However, the difference in the percentage for the two periods is more in the case of the male child. The difference in the percentage of those citing financial constraints as a reason is small as against those citing 'no permission' particularly prior to the floods. With a higher percentage in the case of the male child (during the two time periods) it appears that school-going boys got involved in work and helped deal with financial hardships. A difference of 1.69 percentage points can be noticed during the two periods. In some

1.6 percent of responses for boys and 1.8 percent of responses for girls, the respondents reported that due to financial hardships after the floods they were unable to send their child to school and eventually took them out of school. Similarly, the reason for not sending the child to school because of teacher absenteeism is more obvious in the case of the male child. Whereas, 0.8 percent of responses of boys and 1.8 percent of responses for girls indicated that they have to leave the school as there are no teachers at schools after the floods.

Table 4.6
Reasons for Not Attending School for Primary School-Going Children Age 5-9 (Male and Female Respondents)
(Percent of responses)

	Boys		Girls	
	BF	ATS	BF	ATS
A. Demand Side Constraints:	***48.7***	***53.1***	***53.8***	***59.0***
Too young	21.7	21.5	21.2	24.8
Education is expensive	10.1	11.7	9.1	12.2
Child not wanting to go to school	4.9	6.3	8.3	8.6
No permission from family	4.1	3.5	3.0	1.4
Helps in work/business	2.6	4.3	3.0	2.7
Family does not value education / education is not necessary	1.9	1.6	2.7	2.3
Due to domestic responsibilities	1.9	1.2	4.9	5.0
Ill/disabled	1.5	1.6	1.1	0.5
Due to financial hardships after flood	0.0	1.6	0.0	1.8
Education completed	0.0	0.0	0.4	0.0
B. Supply Side Constraints:	***40.5***	***44.1***	***36.0***	***39.2***
Poor quality of schools/education	18.0	20.7	12.9	14.9
Distance to school	12.4	15.6	14.0	15.3
Teacher absenteeism	6.0	7.0	4.9	5.0
No School	4.1	0.0	3.4	1.4
Teachers unavailable after floods	0.0	0.8	0.0	1.8
Un-availability of gender specific teachers	0.0	0.0	0.8	0.9
C. No Response/No Reason specified	***10.9***	***2.7***	***10.2***	***1.8***
Total	**100**	**100**	**100**	**100**

Source: SPDC Survey 2012

Secondary Education

In Pakistan, due to the international commitment on the principle of universal education and the country's commitment to the millennium development goals (MDGs), the focus primarily has been on improving the enrolment at the primary level of schooling. Unfortunately, this has been at the cost of the secondary level of education. This is despite the fact that families, belonging to lowest strata of the society, inevitably take their children out of school either at the secondary or higher secondary level of schooling. An additional factor of 'reaching puberty' places a girl child at a disadvantage.

The gross secondary enrolment ratio is the total enrolment at the secondary level divided by the total population of children aged 10 to 14 years.

Table 4.7
Gross Secondary Enrolment Ratio and Out-of-School Children (Age 10 - 14 Years)
(Percent)

	Gross Primary Enrolment Rtio			out-of-
Gender	BF	ATS	Difference (ATS-BF)	school children
Boys	31.5	28.3	-3.2	89.3
Girls	10.3	6.2	-4.0	96.4
Both	21.6	16.2	-5.4	93.2

Source: SPDC Survey 2012

Table 4.7 shows that the gross secondary enrolment ratio (GSER) decreased by 5.4 percentage points after the floods. For boys, it decreased by 3.2 percentage points as against 4.0 percentage points in the case of girls. The gender difference further widened after the floods – the percentage difference (GSER of boys minus GSER of girls) increased from 21.2 percent to 22.1 percent. The factors contributing to the difference are: financial difficulties; inclusion in

income-generating activities; investment in boys' education being viewed as future monetary investment; girl reaching puberty age – which restricts her movement outside the house; and young marriage.

Table 4.8
Reasons for Not Attending Secondary School for School-Going Children Age 10 - 14 (Male and Female Respondents)
(Percent of responses)

Reasons for not attending education institute	Boys		Girls	
	BF	ATS	BF	ATS
A. Demand side constraints:	***70.5***	***72.2***	***53.6***	***61.1***
Household responsibilities	13.1	21.6	14.3	11.9
Education is expensive	11.5	17.9	11.3	11.9
Help in work	13.1	15.4	4.8	7.8
Education is not necessary	15.9	5.6	1.8	2.1
No permission/Opportunity cost is high	8.7	3.7	12.5	11.4
Children not wanting to go to school	3.3	2.5	6.0	7.8
Education completed/Don't want to study further	1.6	2.5	1.8	2.6
Work/employment	1.6	1.9	0.0	0.0
Ill/disabled	1.1	1.2	0.6	2.1
Too young	0.6	0.0	0.6	3.6
Due to financial hardships after the flood	0.0	0.0	0.0	0.0
B. Supply side constraints:	***26.2***	***25.3***	***39.3***	***32.6***
Distance to school	13.1	16.7	17.9	14.0
Poor quality of schools/education	13.1	6.8	13.7	13.0
Unavailability of teachers after the flood	0.0	1.9	0.0	1.6
Unavailability of gender specific teachers	0.0	0.0	1.8	1.6
No School	0.0	0.0	2.4	0.0
Teacher absenteeism	0.0	0.0	3.6	2.6
C. No Response/No Reason specified	***3.3***	***2.5***	***7.1***	***6.2***
Total	**100**	**100**	**100**	**100**

Source: SPDC Survey 2012

The table also shows out-of-school children for the secondary level which is calculated by deducting the number of secondary school-age children enrolled at the secondary level from the total population of secondary school-age children. According to the data, an alarming percentage (93.2) of secondary school-going population were out of school (89.3 percent boys and 96.4 percent girls). The government needs to target the sector and seriously work towards the improvement of enrolment at the secondary level of education. The reasons for not attending secondary school are indicated in Table 4.8 for the population aged 10 to 14.

21.6 percent of boys of this age group did not enter secondary level schooling or dropped out due to increased responsibilities at home during the post-floods period. In the case of girls, 'household responsibilities' was cited as a reason by some 11.9 percent of responses. The second most cited reason for boys was the 'cost of education' which compelled the parents not to send their child to school. Distance to school, although cited in the case of both sexes, was mentioned as the main reason in the case of girls during the two time periods [17.9 percent (before the flood) and 14 percent (at the time of the survey)]. Poor quality of school /education was also reported in some 13 percent of responses for girls at the time of the survey unlike for boys – where this complaint was higher (13 percent) for the pre-floods period and came down to 6.8 percent for the period indicating the survey. Since the respondent did not speak about the quality of education, seemingly, it is the poor/depleted, or no, infrastructure of schools which prevented them from sending their girls to schools. The non-availability of gender-specific teachers (1.9 and 1.6 percent) did not come as a major discouraging factor.

Enrolment by Type of Educational Institute

While 92.3 percent of boys and 92.7 percent of girls were attending government schools at the time of the survey, a marginal change in preference for non-government[22] educational institutions is noticed as against government schools, especially in the case of girls (Table 4.9) [3.2 percent (before the floods) to 7.3 percent (at the time of the survey)]. The preference can either be due to the better quality of education imparted in private/ non-government schools, non-availability of public schools in the vicinity especially for girls or, as stated earlier, the poor infrastructure of schools. The findings also suggest that the bulk of the responsibility still lies with the government sector since enrolment is higher in public schools.

Table 4.9
Enrolment Ratio by Type of Institution
(Percent)

Type of Educational Institute	Gross Enrolment			
	Boys		Girls	
	BF	ATS	BF	ATS
Government	93.1	92.3	96.8	92.7
Non-Government	6.9	7.7	3.2	7.3
Total	100	100	100	100

Source: SPDC Survey 2012

THE IMPACT ON THE HEALTH OF THE AFFECTEES

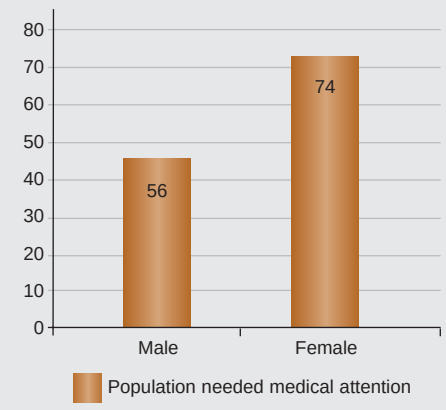
This section focusses on the health facilities available at the relocation site immediately after the floods and at the time of the survey. The 'recall method' was used to gather information about health facilities provided to them at the relocation sites soon after being moved. The questionnaire also consisted of the questions that helped understand the mental stress and agony factors which continue to exist. The specific needs of the flood affected population, addressed and otherwise, in the immediate post-flood period were also assessed.

Status of Health at the Relocation Site

This sub-section is on the general conditions of the health of the affected population and health services availed by them at the relocation site. Specific questions were to assess the magnitude of the problem, reasons mentioned by the respondents that caused health-related problems and their level of satisfaction with the quality of service accessed. Questions were also included on the specific needs of pregnant women.

International development organisations and the media[23] reported an increase in the cases of malnutrition, dehydration, gastroenteritis, diarrhoea, skin infections, cholera, typhoid, malaria and hepatitis, while millions were considered to be at risk from water-borne diseases. According to the survey data (Chart 4.4), approximately 56 percent of the total male population and 74 percent of the total female population needed medical care soon after the floods at the relocation sites (relief camps). Poor nutritional levels, resulting in lower resistance, also caused a higher occurrence of illnesses, particularly among women and children.

Chart 4.4
Population that Required Medical Care Soon After the Floods
(Male and Female Respondents)
(Percent)



Source: SPDC Survey 2012

Table 4.10
Medical Conditions Reported by Reasons at Relocation Site Soon After the Floods
(Male and Female Respondents)

(Percent)

Reasons →	Unhygienic Conditions		Unclean Water		Poor Quqlity of Food		Post Traumatic Streess Disorder		Accidents During Flood		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Femal	Male	Female
Gastrological	8.8	10.0	4.6	5.4	1.9	0.4	0.3	0.3	-	-	15.7	16.0
Fever	12.7	21.6	6.2	6.9	2.8	0.9	4.7	5.4	-	-	26.3	34.8
Injury	-	-	-	-	-	-	-	-	2.6	2.2	2.6	2.2
Body Ache	0.1	-	0.1	-	0.1	-	-	0.1	-	-	0.2	0.1
Pregnancy related complications and miscarriages	0.1	-	-	-	-	-	0.6	-	0.1	-	0.7	-
Chronic Diseases			0.1	0.1			0.2	0.3			0.3	0.3
Allergy and Infections	0.4	0.2	0.1								0.5	0.2
TOTAL	**21.9**	**31.8**	**11.1**	**12.3**	**4.8**	**1.3**	**5.2**	**6.6**	**2.6**	**2.3**	**45.6**	**54.4**

Source: SPDC Survey 2012

The main illnesses mentioned were gastroenteritis (31.8 percent)[24], fever (61.1 percent)[25], injury (4.8 percent)[26], body ache (0.3 percent)[27], pregnancy-related complications and miscarriages (0.7 percent), chronic diseases[28] (0.6 percent), allergies and infections (0.7 percent)[29] caused mainly due to unhygienic conditions[30], unsafe drinking water, poor quality of food provided at relocation site, post-traumatic stress[31] and accidents during the floods. Table 4.10 indicates that the ratio of females affected due to a particular medical condition is higher for fever and gastrological-related diseases. The difference in the percentage was substantive in the category of fever (34.8 percent (female) and 26.3 percent (male)), whereas, the increase in the case of gastrological-related diseases was marginal. The reasons cited were: exposure to unhygienic living conditions, nursing for the ill and infected members of the family, and poor food intake – as a result of the restricted mobility of women i.e. being confined to the relief camps.

Some 0.7 percent of females reported pregnancy-related complications/ miscarriages as a result of unhygienic conditions[32] along with post-traumatic stress and accidents during the floods. While allergies and infections, injuries, and body aches were commonly cited health-related issues for men. This indicates the comparatively higher physical exposure of men to the flood/disaster both at the time of floods and during the relocation period.

Almost 95 percent of the population that needed health care consulted health providers at relocation sites (94.5 percent male and 96.0 percent females). Table 4.11 shows the distribution of types of health care availed at relocation sites. 47.8 percent of males and 55.7 percent

Table 4.11
Proportion of Sick/Injured Population by Type of Health Care Service Availed at Relocation Site
(Male and Female Respondents)

(Percent)

Type of health care provider	Male	Female
Public services	47.8	55.7
Private services	34.0	26.5
Visiting doctor teams at relief camps	18.2	17.8
Total	**100**	**100**

Source: SPDC Survey 2012

of females (of the ill) accessed public sector health services. The reason, perhaps, was the availability of public sector services especially at relocation sites. Doctors' teams visiting the relief camps remained prominent – with some 18.2 percent of males and 17.8 percent of females benefitting. These teams were either arranged by the government or by associations of private hospitals and doctors.

The quality of health service availed at relocation sites for all types of health services and the problems faced are reflected in Table 4.12. The data shows 73.7 percent of total males and 71.9 percent of total females who availed health care facilities at relocation sites were satisfied with the service. The table also shows the distribution of the remaining population that confronted difficulties during their visits to health care providers. Among those who obtained health care services, the most cited problem (by both males and females) was that the service was too expensive, 26.7 percent and 35.9 percent respectively. Similarly, those who required health care but did not avail it, cited the same reason 64.3 percent (male) and 44.7 percent (female). For females, the distance to health care providers was also an important reason for not availing the service (44.7 percent).

Table 4.12
Problems Faced During Visit to Health Care Provider and Reasons for Not Visiting Health Care Provider at Relocation Site (Male and Female Respondent)
(Percent)

	Male	Female
Satisfied with health care availed at relocated site	73.7	71.9
Problems faced during visit to health care provider at relocation site:		
No Doctor	25.1	4.5
Staff not helpful	20.9	1.8
Long waiting	18.7	24.2
Too expensive	26.7	35.9
Treatment Unsuccessful	8.6	33.6
Total	**100**	**100**
Population needed health care but did not visited health care provider	4.5	2.6
Reason for not visiting health care provider at relocation site:		
Too expensive	64.3	44.7
Too far away	26.2	44.7
No confidence in service available	0	7.9
No doctor available	9.5	2.7
Total	**100**	**100**

Source: SPDC Survey 2012

Further decomposition of data shows that despite public health care being less expensive, those unwell were discouraged by the long waiting hours; and, therefore, preferred private health care providers. ‘Long waiting’ was reported as the second highest problem faced by men and women (18.7 percent and 24.2 percent respectively). Other major problems cited were the unavailability of doctors for males (25.1 percent for male and 4.5 percent for female), unhelpful staff (20.9 percent for males and 1.8 percent for females) and unsuccessful treatment (8.6 percent for males 33.6 percent for females).

The floods largely affected publically constructed physical infrastructure related to the provision of health care. It was also constrained by the non-availability of adequate facilities and doctors to cater to such a large number of the ill. Although, emergency relief measures were taken to cater to health-related emergencies, the ratio of doctors to the affected population was low.

Of the total population, that which needed health care but did not visit was 7.1 percent [4.5 percent (male) and 2.6 percent (female)]. They relied on traditional domestic remedies and refrained from reaching out to health care providers.

Maternal Health at Relocation Site

To assess the health of pregnant women, specific questions were asked to identify the difficulties and complications faced. Table 4.13 shows that 14.7 percent of women[34] were pregnant at the time of floods, and lived in relief camps (relocation sites). About 95.3 percent of women went for prenatal check-ups at the relocation site. The majority went to the public hospitals/clinics (50.6 percent) followed by private hospitals/clinics (46.9 percent) (Table 4.14). The reason of preference, though not asked, seems to be the availability of types of services at the relocation site. Surprisingly, none of the pregnant women confirmed consulting the visiting teams of doctors. This could be due to no or low proportion of inclusion of female doctors in such groups/teams.

Table 4.13
Pregnant Women at the Time of Floods and Proportion of Women Consulted for Prenatal Care at Relocation Site (Female Respondents)
(Percent)

Pregnant women	14.7
% Consulted	95.3

Source: SPDC Survey 2012

Table 4.14
Type of Prenatal Health Care Service Availed at Relocation Site (Female Respondents)
(Percent)

Govt. hospital/clinic	50.6
Private hospital/clinic	46.9
Untrained Dai/TBA[33]	2.5
Total	**100**

Source: SPDC Survey 2012

The main reasons cited for prenatal consultation (Table 4.15) were general check-ups (42 percent) and high-risk pregnancies (55.6 percent), while 2.5 pregnant women cited stress[35] as the reason for check-ups. The latter reasons are reflective of physical and psychological trauma faced by pregnant women.

Table 4.15
Reason for Prenatal Consultation (Female Respondents)
(Percent)

General pre-natal checkups	42.0
Stress	2.5
High Risk Pregnancies	55.6
Total	**100**

Source: SPDC Survey 2012

The government claimed that "Not a single baby or woman died during the thousands of delivery in any of the relief camps in Sindh[36]". The data gathered, however, shows that only 58.3 percent pregnancies[37] resulted in live births (Table 4.16). A large number of pregnancies ended with stillbirths and miscarriages (20.8 percent for both). Inadequate maternal health facilities, mental trauma, poor nutrition and problems in adjusting to the new environment were cited as probable reasons for stillbirths and miscarriages.

The presence of a skilled birth attendant at the time of delivery is important for averting maternal and neonatal mortality and morbidity. The studies undertaken have indicated that trained traditional birth attendants (TBAs) cannot, in most cases, save women's lives in the case of complications during delivery[38]. Table 4.16 also indicates that 42.9 percent of total live births were attended by doctors, while stillbirths were largely attended by TBAs (41.2 of

Table 4.16
Outcome of Pregnancy at Relocation Site, Birth Attendant and Percentage of Women Satisfied with Obstetric Service Availed (Female Respondents)
(Percent)

Outcome of pregnancy at relocation site		Birth Attendant			% of Women Satisfied with service availed
		Doctor(s)	Nurse(s)	TBA/Dai	
Live Births	58.3	42.9	33.3	23.8	100.0
Still Births	20.8	35.3	23.5	41.2	93.3
Miscarriages	20.8	53.9	15.4	30.8	66.7

Source: SPDC Survey 2012

total still births). The decomposition of data also indicates that 35.3 percent of total stillbirths were attended by doctors while 23.5 percent were attended by nurses. Similarly, cases of miscarriages were handled mainly by doctors in 53.9 percent of cases. All the women included in the category of live births, along with 93.3 percent of women with stillbirths and 66.7 percent women who had miscarriages said that they were satisfied with the quality of service provided to them. Table 4.17 indicates the average cost incurred on a pregnancy by a doctor was Rs. 9,800, whereas those handled by a nurse or TBA cost Rs. 9300 and 3,800 respectively. The cost included consultation fee, medicines and laboratory tests. Surprisingly, there is not much difference between the average cost of a case handled by a doctor and nurse – a fact that indicates that qualified and trained nurses charge the same amount per case as doctors. Also the non-availability of female doctors compels women to opt for a nurse, which, perhaps, is a reason for the high charges of female nurses.

Table 4.17
Average Cost Per Obstetric Case at Relocation Site (Female Respondents)
(Rupees)

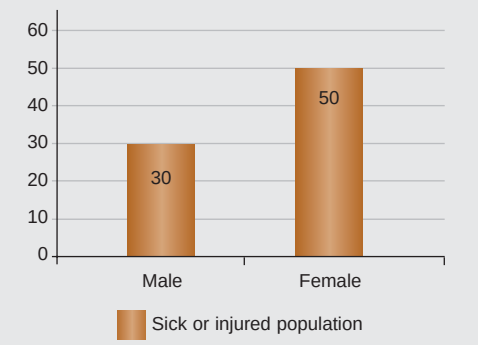
Birth Attendant	Average Cost of one pregnancy case
Doctor(s)	9,800
Nurse(s) (female)	9,300
TBA/Dai	3,800
Overall	7,600

Source: SPDC Survey 2012

Status of Health at the Time of Survey

The previous health-related analysis provides insight into health-related issues soon after the floods and was based on the 'recall method'. This section presents the on-ground situation related to the health status of the flood affected population at the time of the survey. The long-term consequences of the floods were mainly visible due to infrastructure damages caused to hospitals, clinics, basic health units (BHUs), mother and child health centres (MCHs) and water along with the loss of human capital[39]. Chart 4.5 shows that 30 percent of total male population and 50 percent of total female population either had fallen sick or was injured even two weeks prior to the survey undertaken for the study. Evidently the impact of floods for the female affectees has been worse than men[40]. The findings emanating from the survey are significantly worse than the ones documented in the PSLM Survey, where the decline in the proportion of sick or injured population for rural areas of district Thatta is 11.2 percent in 2010-11. One possible explanation for this difference may be that survey findings are based exclusively on the flood affected areas while the PSLM data brings forward the complete picture of the district. Clearly, the health conditions of the population residing in the flood affected geographical areas are much worse than those living in the non-affected areas of the district.

Chart 4.5
Sick or Injured Population Two Weeks Prior to Survey
(Male and Female Respondents)
(Percent)



Source: SPDC Survey 2012

Table 4.18 indicates the type of health care provider accessed by the population that had fallen sick or were injured and the average number of visits made to health centres/hospitals. The types

of health care providers are 'public services'[41] and 'private services'[42]. The table shows a higher preference for private health care services among the affectees of the Thatta despite being expensive[43]. The reasons cited were poor laboratories and clinical facilities available at public hospitals, untrained and unhelpful staff, and non-availability of gender-specific doctors (especially for females).

Table 4.18
Type of Health Care Provider and Average Number of Visits to Hospitals/Clinics at the Time of Survey
(Male and Female Respondents)
(Percent)

Type of health care provider	Male	Female
Public Services	33.5	42.8
Private Services	66.5	57.2
Total	**100**	**100**
Average number of Visits made to health care providers	2	3

Source: SPDC Survey 2012

Average number of visits made for treatment is higher for females (three visits per female population) as against two visits per male population. The reason for the higher average among female members can be linked with the findings in Table 4.19 which indicates the difficulties faced during their visits to hospitals/health care centres.

Table 4.19
Percentage Distribution of Difficulties Faced During Visit to Health Care Provider and Reasons for Not Visiting Health Provider Despite Being Sick
(Male and Female Respondents)
(Percent)

Reasons	Male	Female
Problems confronted while treatment:		
No problems	28.3	37.5
Too expensive	62.3	48.6
Unsuccessful Treatment	9.4	13.9
Total	**100**	**100**
Reasons for not visiting despite being sick:		
No need to visit	9.4	3.5
Too expensive	86.6	74.8
Too far away	4.0	21.7
Total	**100**	**100**

Source: SPDC Survey 2012

The data gathered revealed that 28.3 percent of males and 37.5 percent of females who consulted medical service providers (both public and private) and were satisfied with the services availed (Table 4.19). It also shows that the majority of the population complained about the higher user charges by the private sector. As discussed earlier, due to unsatisfactory services available at the public health care centres and the long waiting hours, the majority preferred private health care providers – consequently, bearing higher expenditures. Unsuccessful treatment was also cited by women (13.9 percent) which resulted in higher average number of visits to the health care providers. Low immunity due to anemia resulted in slowing the recovery, particularly, among females.

Of the total ill or injured population who did consult helth care providers, 9.4 percent males and 3.5 percent of females cited that since their illness/injury was of a minor nature and was treated at home. Higher user charges (expenditures) was cited as the most important reason for not accessing health care providers (86.6 percent males and 74.8 percent females). In the absence of the provision of good health facilities by the government, the people had no option but to rely on non-professionals (quacks) or home remedies further worsening the disease or illness. Distance of health care provider from the house / patient was cited as a discouraging factor by around four percent of males and 21.7 percent of females.

Psychological Health of the Respondents at the Time of Survey

To bring forward the prevalence of trauma after the floods, its deep-rootedness, and how it is posing challenges to the health of the affected population, questions were posed to household

Table 4.20
Psychological Health Status (Male and Female Respondents)

(Percent)

	Health Symptoms	Men	Women
1.	Do you often have headaches?	76.7	96.8
2.	Is your appetite poor?	43.1	78.4
3.	Do you sleep badly?	61.3	72.3
4.	Are you easily frightened?	36.1	80.4
5.	Do your hands shake?	18.0	71.5
6.	Do you find difficulty in enjoying your daily activities?	45.9	69.3
7.	Do you face difficulty in decisions-making?	44.9	90.6
8.	Is your daily work suffering?	45.7	79.4
9.	Are you unable to play a useful part in life?	24.4	71.9
10.	Have you lost interest in things?	43.9	79.6
11.	Do you feel nervous, tense or worried?	67.9	95.8
12.	Is your digestion poor?	29.9	69.1
13.	Do you have trouble thinking clearly?	53.9	87.8
14.	Do you feel unhappy?	42.7	70.3
15.	Do you cry more than usual?	9.2	58.5
16.	Do you feel that you are a worthless person?	19.2	60.9
17.	Has the thought of ending your life ever came to your mind?	7.6	21.6
18.	Do you feel tired all the time?	69.5	96.0
19.	Do you have uncomfortable feelings in your stomach?	23.8	57.1
20.	Are you easily tired?	72.9	97.2
	Mental Health Score (Population having significant psychological distress)	60	99
	Average Age of Respondent	43	38

Source: SPDC Survey 2012 (Methodology followed from WHO 1994)

heads and their spouses. This was done in order to assess their mental health. The component consisted of 20 questions specifically helpful in understanding the type of health issues confronted by them 30 days prior to the survey. The findings based on the self-reported questionnaire[44] are reflected in Table 4.20. Based on the percentage of positive answers to each health-related symptom, the mental health score indicates the proportion of affirmative responses on seven or more symptoms. According to WHO, this population may be considered as having significant psychological distress.

The table shows that an alarming 60 percent of male respondents and 99 percent of female respondents are under mental distress. The percentage of females is higher than male respondents in all health symptoms. The responses generated clearly indicate the agony and uncertainties existing in the lives of the flood affectees. Among the female respondents, more than 90 percent complained of frequent headaches and nervousness (which is caused by distress) about taking decisions on issues concerning family welfare. With fear in their lives, they complained of exhaustion. Though, the feeling of nervousness expressed by the male respondents is less (67.9 percent as against 95.8 percent among females), they also complained of headaches and tiredness. Headaches, to which both the sexes responded in the affirmative, may be a result of constant tension, anxiety and poor nutrition. The experiences and suffering of the affected population have been further compounded by uncertainty – which may be

addressed by taking preventive measures and also by ensuring preparedness among the exposed population.

To sum up, the data shows enormous implications on secondary education and health of the affected population after the floods. Although primary enrolment increased due to the intervention of non-governmental organisations, secondary education remained neglected as households took their children out of school due to financial constraints. The conditions of psychological and physical health also deteriorated and continue to exist even after two years of the floods.

NOTES:

1. Buildings and their contents, vehicles, livestock, crops, infrastructure.
2. Lives and injuries, damage to cultural and heritage sites, ecological damage.
3. Family loses due to flood such as deaths, injuries, migration.
4. Ratio of males to females.
5. Number of persons residing together in one house.
6. Male (female) population divided by total population of the households.
7. Ratio of dependents i.e. people older than 60 years and less than 15 years of age divided by people between 15 and 60 years of age.
8. Other cities or non-affected areas
9. The World Factbook (2012) states that biologically women can live longer than men if equal socio-economic opportunities are provided to them.
10. The increase of 0.24 occurred due to 0.34 new members in the family and 0.10 members who left the family.
11. Rapid gender needs assessment of flood affected communities, UNIFEM - Pakistan (2010).
12. Such as cancer and hepatitis.
13. The youth age bracket varies from country to country. For e.g. in Pakistan it is 15-29 years of age and 15-35 years of age for the South African Council. For this particular study the age group identified as the youth is the one used by the United Nations Educational, Scientific, and Cultural Organization (Unesco).
14. Population under 15 years of age.
15. World Development Indicators (2011) a publication of The World Bank.
16. Ratio of people older than 60 years of age and less than 15 years of age to people between 15 and 60 years of age.
17. Sindh-EMIS Reform Support Unit (RSU), Flood report on educational sector of Sindh report: Year 2010-2011, Department of Education and Literacy Department, Government of Sindh, Pakistan.
18. Sindh-EMIS Reform Support Unit (RSU), Flood report on educational sector of Sindh report: Year 2010-2011, Department of Education and Literacy Department, Government of Sindh, Pakistan.
19. UNIFEM - Pakistan, WASH, HANDS etc.
20. Total enrolment in primary schools divided by population aged five to nine years.
21. UNESCO Institute for Statistics Montreal (2005), Children out of school: Measuring exclusion from primary education.
22. Includes private and NGO-run schools (NCHD, HOPE HANDS etc.).
23. World Health Organisation (WHO), Humanitarian Health Action, Flooding and communicable diseases fact sheet, Asian Development Bank (ADB) (2010), Projects: Pakistan floods (2010) damage and needs assessment, British Broadcasting Corporation, BBC News (24th August 2010).

24. 15.7 percent male and 16.0 percent females.
25. 26.3 percent males and 34.8 percent females.
26. 2.6 percent males and 2.2 percent females.
27. 0.2 percent males and 0.1 percent females.
28. Hepatitis, heart disease, diabetic etc. The ratio was 0.3 percent males and 0.3 percent female.
29. 0.5 percent males and 0.2 percent females.
30. Poor sanitation, unclean utensils.
31. Depression, anxiety, fear and agony.
32. Causing infections that threaten pregnancy.
33. Traditional birth attendant.
34. Women that were either married, divorced or separated at the time of the floods.
35. Such as sleeplessness, abdominal cramps (false labour).
36. Published in The Express Tribune, 20th September 2010, http://tribune.com.pk/story/52191/federal-health-minister-brags-of-zero-infant-maternal-mortality/
37. Of the 87 percent pregnancies that ended/completed at the relocation sites.
38. Mary Fran Myers, Trends in Floods, University of Colorado, http://sciencepolicy.colorado.edu/socasp/weather1/myers.html, has discussed the issues of consequences of the absence of qualified midwives/doctors at the community levels in rural areas.
39. Reduction in trained staff either by drowning, injury or illness.
40. Low immunity level, malnutrition, fever and stress factors comparatively were more evident among female affectees (discussed earlier in the chapter).
41. Public hospitals/dispensary, RHC/BHU, LHV/LHW.
42. Private hospitals/dispensary, homeopath, chemist, pharmacy.
43. Also shown in table 4.18.
44. WHO (1994), Division of Mental Health, Geneva, A user's guide to the self-reporting questionnaire (SRQ).

CHAPTER 5

THE IMPACT OF THE FLOODS ON EMPLOYMENT AND WELL-BEING

CHAPTER 5 THE IMPACT OF THE FLOODS ON EMPLOYMENT AND WELL-BEING

The floods in 2010 not only caused extensive damage to the physical and economic infrastructure they also negatively impacted the general well-being of the men and women residing in the affected areas, including the affected talukas of district Thatta. The most crucial aspect of the impact is the reversion seen in the livelihood of the population caused by the substantial decrease in employment opportunities.

Gender analysts would argue that unequal and inequitable division of labour along with a lack of access and control over material and non-material resources were leading factors in the disadvantageous position of women in the aftermath of the 2010 floods. The women living in the affected areas of Thatta were disproportionately engaged in the household domestic work, unpaid work, and underpaid and non-formal sectors of economy even prior to the floods. This situation further deteriorated after the floods. Economically disempowered, their role in decision making was also limited at all levels.

This chapter presents the findings of the survey on the employment opportunities for both the women and men living in the affected talukas of the district. Discussion on the sources of income by economic activities and gender distribution of employment in these activities along with the coping strategies adopted both by women and men is also included. The chapter fundamentally looks at the multifaceted aspects of the impact of floods on well-being, and does not exclusively focus on the labour force statistics. It, therefore, does not cover all the labour force related indicators.

LABOUR FORCE AND EMPLOYMENT

The floods in the year 2010 displaced more than eight hundred thousand people besides destroying large swathes of agriculture land, partially or fully, in the district Thatta. The devastation caused by the natural disaster also affected the employment opportunities of the district. This particular section discusses the effects of the floods on employment.

The labour force, for practical purposes, divides the entire working age population in to the following three categories: employed, unemployed and economically inactive population. In Pakistan, according to Labour Force Surveys (LFS), working age population consists of all persons of age 10 years and above. Contrary to the interpretation of LFS, population in the age group 10-14 years is considered child labour as per international labour laws[1]. In order to avoid the inclusion of child labour in subsequent analysis of employment, we have excluded this age group.

The Employment Share Before and After the Floods

Table 5.1 gives the comparison of the proportion of employed in the total sample population residing in the district during the two time periods i.e. (before the floods and at the time of the survey). At the time of floods, 60.6 percent of the population (aged 15 years and above) covered

Table 5.1
Share of those Employed in Surveyed Areas

(Percent)

	Employed Before Floods (%)			Employed ATS (%)		
	Both	Male	Female	Both	Male	Female
Thatta	58.2	40.1	18.1	52.6	40.5	12.1
Sujawal	68.9	39.8	29.2	60.0	42.7	17.3
Jati	68.4	43.9	24.6	59.1	44.4	14.7
Mirpur Bathoro	65.4	43.4	22.0	56.9	43.6	13.3
Keti Bunder	66.7	43.5	23.1	59.1	44.5	14.5
Ghorabari	48.8	42.6	6.2	48.4	42.3	6.0
Kharo Chan	56.8	41.6	15.1	55.9	41.0	14.9
Shah Bunder	52.8	44.4	8.4	53.2	43.2	10.0
Total	**60.6**	**42.3**	**18.3**	**55.5**	**42.8**	**12.7**

Source: SPDC Survey 2012

in the sample was employed. Included were 42.3 percent males and 18.3 percent females. Taluka-wise, the highest share of employed women was found in Sujawal (29.2 percent) and the lowest share in Ghorabari (6.2 percent). While these shares clearly indicate fewer employment opportunities for the females of the district prior to the floods, it is important to compare them with those at the time of the survey.

The overall employment situation indicates slightly improved conditions for the men (42.8 percent), whereas in the case of females it worsened by more than five percentage points. As can be seen, the combined share also declined.

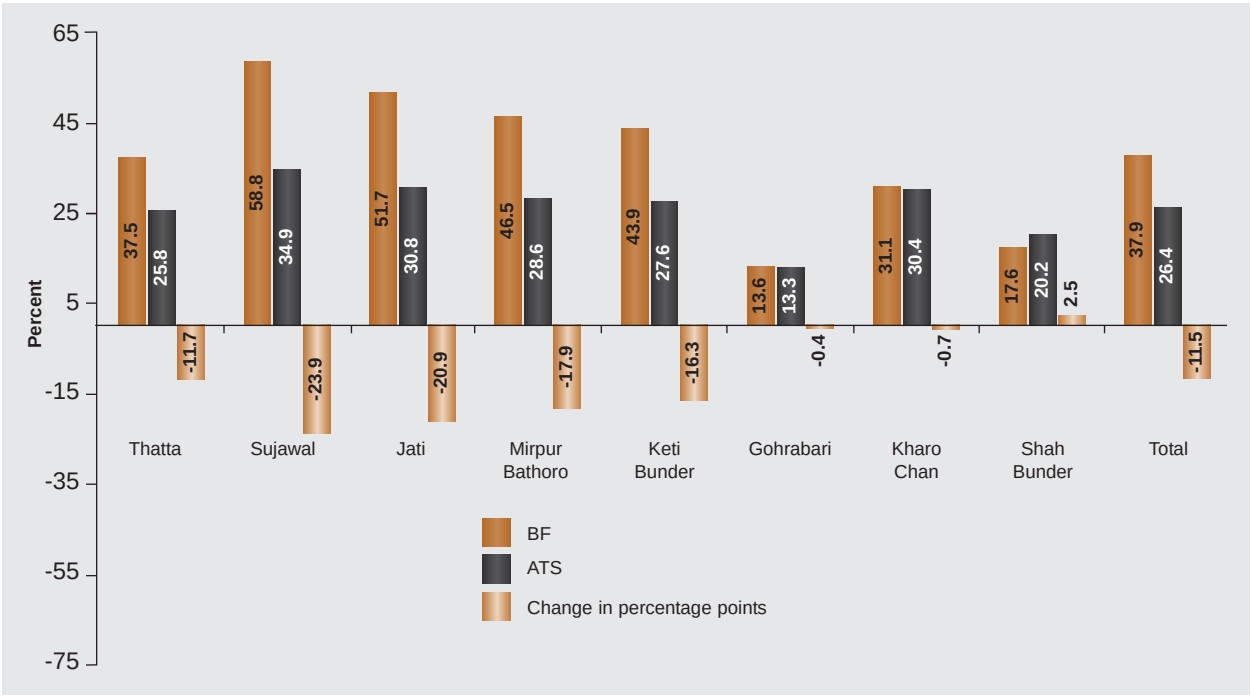
At the time of interview, 55.5 percent of the respondents were employed. The share taken by the male population was 42.8 percent as against a meagre 12.7 percent of females. The table also indicates that compared to the pre-floods situation, the overall share of those employed in the total sample population declined by 5.1 percentage points. While there is a marginal increase of 0.5 percentage points in the employment opportunities for men, the same declined by 5.6 percentage points in the case of women – a decrease that further deepened the economic marginalisation of the female population of the district. A comparison of taluka-wise employment share indicates that the highest decrease in employment opportunities for women occurred in Sujawal where it came down from 29.2 percent to 17.3 percent.

Employment to Population Ratio Before and After the Floods

Chart 5.1 presents a comparison of the female employment rate to population ratio[2] during the two periods. Unfortunately, overall the female employment to population ratio declined from 37.9 percent to 26.4 percent. The trend indicates a decline of an alarming 11.5 percentage points. The decline occurred in all the talukas except Shah Bunder – where a slight improvement has been noticed. The maximum decline was observed in taluka Sujawal where it declined from 58.8 percent to 34.9 percent, thus indicating a decline of 24 percentage points. Whereas, other talukas where a considerable decline occurred include Jati (21 percentage points), Mirpur Bathoro (18 percentage points) and Keti Bunder (16 percentage points).

Chart 5.1
Taluka-wise Comparison of Employment to Population Ratio of Women

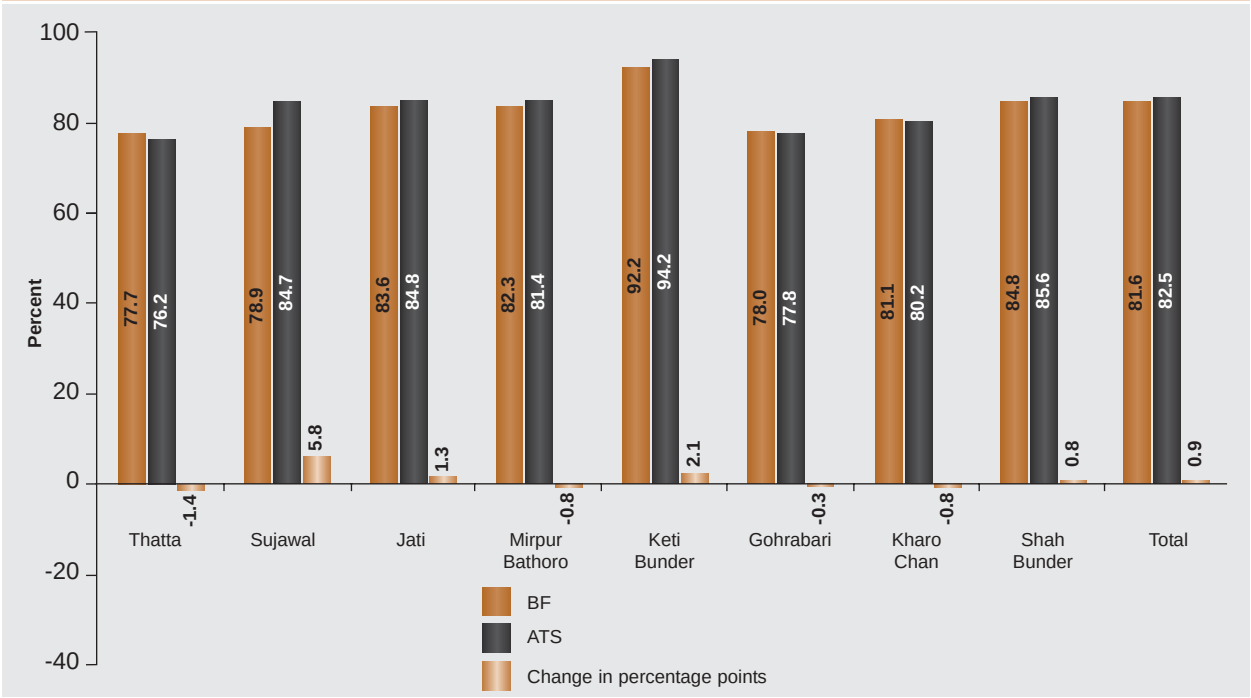
(Percent)



Source: SPDC Survey 2012

Chart 5.2
Taluka-wise Comparison of Employment Rate to Population Ratio of Men

(Percent)



Source: SPDC Survey 2012

Similarly, Chart 5.2 shows a comparison of male employment rate to population ratio. It shows that male employment to population ratio improved from 81.6 percent to 82.5 percent. However, the pattern is not similar in all of the affected talukas. It increased in Sujawal, Jati, Keti Bunder and Shah Bunder where the highest increase occurred in Sujawal (5.8 percentage points) and the lowest in Shah Bunder (0.8 percentage points). In the remaining talukas, male employment to population ratio declined by 0.3 to 1.4 percentage points.

The findings of the two charts above clearly indicate a negative impact on female employment opportunities. Taluka Sujawal indicates the highest increase in employment opportunities for men and the maximum decline in the case of female employment opportunities. In this particular taluka, the employment opportunities decreased and, moreover, men have been employed where women were employed prior to the floods.

Table 5.2 is based on the responses of those who were employed prior to the floods of 2010 and are now unemployed. Reflected in the table are their views on the reason(s) for losing their jobs. The table clearly indicates that the majority of the female respondents, 48 percent, felt that additional and peculiar[3] household responsibilities increased during the post-flood period (Chart 6.9), while only 4.3 percent men cited the same reason. The majority (60.9 percent) of the male respondents who were not working said that their workplace was flooded and hence fewer employment opportunities were available in the immediate post-floods period. Whereas, a greater percentage of females cited illness and injury as the reason for being unemployed. 13 percent of the male respondents cited education as a reason. Unfortunately, none of the females cited education as a reason. The reasons given by the two sexes clearly point to a more intense negative impact of the floods on the female respondents residing in district Thatta.

Table 5.2
Reasons for Losing Paid Work
(Percent)

Reasons	Male	Female
Increase in household responsibilities	4.3	48.0
Lack of employment opportunity	8.7	20.0
Place of work was flooded	60.9	12.0
Illness/injury	4.3	12.0
Educational engagements	13.0	0.0
Others	8.7	8.0
Total	**100**	**100**

Source: SPDC Survey 2012

In contrast, Table 5.3 gives the distribution of responses from those who were neither employed prior to the floods nor working at the time of the survey. While citing the reasons for not working, 37 percent of male respondents and 80 percent of female respondents mentioned that they did not work at all because of their household responsibilities. 26 percent male and eight percent female respondents said that they were too old to work. The responses of the remaining male respondents are as follows: educational

Table 5.3
Reasons for Not Working
(Percent)

Reasons	Male	Female
Household responsibilities	36.9	79.6
Too old	26.2	8.4
Educational engagements	14.1	0.9
Too young	9.4	0.9
Illness/Injury	7.4	9.3
Disabled	4.0	1.0
No response/ no answer	2.0	0.0
Total	**100**	**100**

Source: SPDC Survey 2012

attainment (14 per cent); too young to work (nine percent); and illness or disability (seven percent). On the other hand, 10 percent of the remaining female respondents cited illness or disability as the reason. The table, altogether, indicates additional household responsibilities as the major reason for keeping women economically disempowered.

THE IMPACT OF THE FLOODS ON DISTRIBUTION OF UNPAID WORK AND OTHER ACTIVITIES

Given that employment opportunities decreased, particularly for women, they were asked about the nature of change that occurred in either their unpaid care[4] or productive work. They were also asked to comment on the role and responsibilities of both the sexes in carrying out certain household and work-related activities during the two periods i.e. before and after the floods. The section helps in understanding the relevance of poverty at the time and its effects on the men and women.

Role and Responsibilities of Women and Men in Unpaid Work

The System of National Accounts (SNA)[5] is the international system followed all over the world including Pakistan. The system divides work-related activities into two broad categories: (1) paid activities that fall within the 'production boundary' of the SNA and (2) unpaid care work, which is also referred to as 'extended' SNA work[6]. The findings presented in Table 5.4 help in understanding the distribution of responses on the role and responsibilities assigned and assumed by the male and female affectees under the following three headings: Activities within

Table 5.4
Role by Gender in Performing Certain Household and Work-Related Activities: Female Perspective
(Percent)

	During Normal Time					After Flood 2010				
	Male	Female	Both	None	Total	Male	Female	Both	None	Total
Extended SNA Productive work										
Meal preparation & serving	2.6	84.2	13.2	0.0	100	2.5	86.9	10.7	0.0	100
Collecting water	4.4	83.0	12.6	0.0	100	3.5	86.4	10.1	0.0	100
Collecting wood for cooking	53.9	23.8	21.2	1.2	100	54.0	25.9	18.9	1.2	100
Extended SNA Care Work										
Taking care of children	1.4	55.9	37.3	5.4	100	2.1	57.0	35.4	5.6	100
Taking care of sick & old	2.2	51.9	42.7	3.2	100	2.1	53.1	41.6	3.3	100
Teaching children	7.6	28.9	26.3	37.1	100	5.6	29.8	26.5	38.1	100
Activities within 'Production Boundary' of the SNA										
Livestock rearing	34.1	5.2	10.4	50.3	100	31.5	6.0	9.9	52.6	100
Making fishing net	21.6	0.4	1.0	77.0	100	19.3	0.6	1.0	79.0	100
Poultry rearing	12.8	11.4	6.2	69.7	100	10.1	13.2	5.6	71.2	100
Agricultural paid labour	72.3	0.4	4.6	22.8	100	71.6	0.6	4.7	23.0	100
Non-agriculture paid labour[7]	83.0	1.0	4.4	11.6	100	82.3	1.2	4.7	11.7	100
Agricultural unpaid work[8]	69.7	1.0	4.2	25.1	100	68.5	1.0	4.3	26.1	100
Fish farming	15.6	0.8	0.2	83.4	100	13.2	1.0	0.2	85.6	100
Fishing	23.4	0.8	0.4	75.4	100	21.2	1.0	0.4	77.4	100
Shrimp farming	7.8	0.8	0.2	91.2	100	4.8	1.0	0.2	94.0	100
Small business	18.0	0.8	0.2	81.0	100	15.3	1.0	0.4	83.3	100

Source: SPDC Survey 2012

Table 5.5
Impact on the Individual Activities Outside the Homestead

(Percent)

Activities	Female Perspective				Male Perspective			
	Severely[9] Affected	Less Affected	Not Affected	Total	Severely Affected	Less Affected	Not Affected	Total
Visiting relatives	78.6	20.2	1.2	100	74.5	23.2	2.4	100
Going to market	29.0	39.2	31.8	100	43.3	54.3	2.4	100
Collecting water	88.2	8.6	3.2	100	27.5	50.3	22.2	100
Working outside (employment)	47.0	23.8	29.2	100	52.5	40.5	7.0	100
Going to Fair	21.2	25.6	53.2	100	9.4	37.5	53.1	100
Going to health centre	33.8	54.2	12.0	100	17.2	72.5	10.4	100
Going to bank	12.6	19.0	68.4	100	1.6	20.6	77.8	100
Parent-teacher meeting	10.8	22.8	66.4	100	6.8	17.0	76.2	100
Village arbitration	13.0	26.2	60.8	100	29.1	20.4	50.5	100
NGO activities	16.1	45.3	38.6	100	7.0	18.8	74.1	100

Source: SPDC Survey 2012

'Extended SNA Productive Work, 'Care Work' and 'Production Boundary' of the SNA,. The findings emanating indicate that the bulk of extended SNA work was performed by females in normal times as well as in the post-disaster period; bulk of the productive work, which falls within SNA boundary, is performed by the male; and in the post-floods period, the female's involvement increased in the extended SNA activities and the care work.

More than 80 percent of the female respondents reported that activities like meal preparation, serving food, collecting water have always been performed by females at all times and under all conditions. In comparison, almost 56 percent said that child care was their responsibility during the two periods, while over 35 percent thought it to be the responsibility of both males and females.

Non-agriculture paid labour, according to most of the females respondents, is invariably performed by men. Similarly, 70 percent of the female respondents attributed agriculture paid and unpaid labour to men, while 20 percent mentioned that those were not performed by both men and women. These analyses clearly indicate that the division of labour prevails in the rural economy of Thatta where males were engaged mostly in paid activities and females in unpaid work. The floods in Thatta further reinforced this gender division of labour.

As far as the effects on social, cultural and productive work, in and outside the homestead[10], were concerned, female respondents stated that collection of water and socialising with relatives (Table 5.5) were greatly affected by the floods – a fact that indicates an increase in the time required or spent by the female in collecting water. Similarly, due to damages of physical infrastructure, socialising among relatives also decreased in the aftermath of the floods. Moreover, 47 percent said that due to limited employment opportunities their chances of getting a job minimised ; 24 percent termed it as being less affected, while for 29 percent of the respondents the activity was not affected by the floods.

Among the poor segment of society, health and issues of health care have been pushed back due to other problems such as food, shelter and clothing. This is reflected in the table whereby 34 percent said that access to health centres was severely affected, while 54 percent said this was less affected.

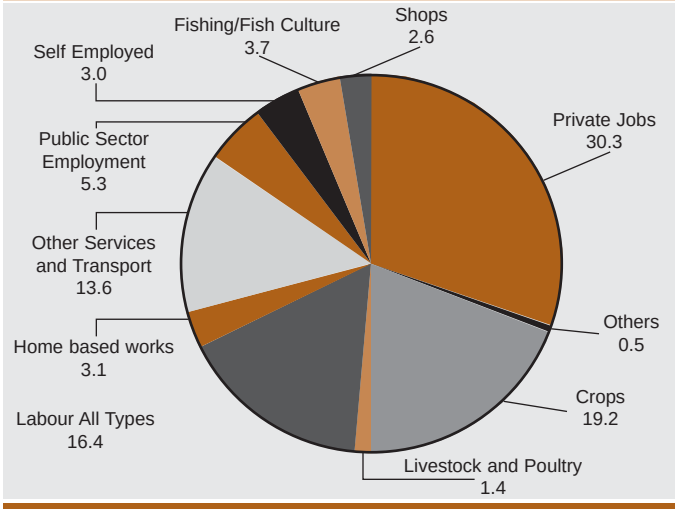
Other activities as reported by over 60 percent of the females not affected by floods include going to the bank, attending parent-teacher meetings and village arbitration. This could be due to the fact that many women traditionally have never been involved in such activities.

According to 75 percent and 53 percent of the male and female respondents respectively, visiting relatives and working outside were two severely affected activities (Table 5.6). 54 percent of males responded that going to the market was less affected, while 43 percent said that it was an activity that was highly affected. As far as going to health centres and collecting water are concerned, due to better health as compared to children and women, and their limited role in water collection, 73 percent and 50 percent respectively said that those were less affected. Over 70 percent of the male respondents said that going to the bank, attending parent-teacher meetings and NGO activities were not at all affected by floods, while for over 50 percent going to the fair and village arbitration were not affected.

INCOME AND WELL-BEING

This section looks into the issues of the overall well-being of the population living in the affected areas of the district. In order to do this objectively, the respondents were asked for details about the sources of income by economic activities and the gender distribution of employment in the same economic activity. Details about the type of food assistance received at the time of floods were also taken.

Chart 5.3
Sources of Income
(Percent)



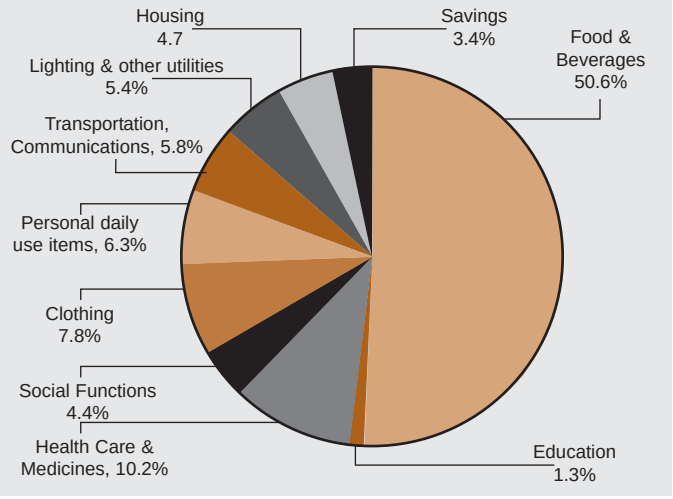
Source: SPDC Survey 2012

Sources of Income and Gender Distribution of Employment

Chart 5.3 indicates that over 30 percent of the income in flood affected areas came from private jobs, which is largely concentrated in taluka Jati (72 percent). The second largest source of income was cultivation of crops which accounted for over 19 percent of total income. The other significant sources of income include labourers earning on a daily and weekly basis (16.4 percent) and transport services (13.6 percent).[11] Those involved in home-based work merely consisted of 3.1 percent of the total income. Of the total percentage in this category, 97.7 percent were female workers. Rest of the work areas were dominated by men. Two other areas indicating the presence of

females were other private jobs (12.8 percent) and crop cultivation (8.9 percent).

Chart 5.4
Distribution of Expenditures
(Percent)



Source: SPDC Survey 2012

Chart 5.4 shows the distribution of household monthly expenditures in major categories. It depicts that slightly over 50 percent (50.6 percent) spent money on food and beverages followed by health care- and medicines-related expenditures (10.2 percent); clothing (7.8 percent); personal daily use items (6.3 percent); and transport and communications were 5.8 percent of the total expenditures. Among the other categories, expenditures on fuel required for cooking, lighting and other utilities like drinking water were 5.4 percent, housing 4.7 percent and on education a meagre 1.3 percent of total expenditure.

Table 5.6
Effect on Family Well-Being - Female Perspective
(Percent)

Reasons	Male	Female	Children
Food Security	90.7	97.8	88.7
Health	86.2	98.4	91.1
Education	26.3	35.9	51.6
Safe Water	91.9	98.2	68.1
Sanitation	88.7	96.1	44.4
Homestead	83.8	93.2	41.4
Income Sources	90.5	79.5	-
Social Security	84.6	89.3	37.9

Source: SPDC Survey 2012

Table 5.6 presents the female perspective about the effects of floods on the well-being of males, females and children. The indicators were carefully identified to draw a comparison of the overall well-being of men, women and children. According to the females, the most severe impact in the case of men was felt on the availability of safe drinking water (91.9 percent), food security (90.7 percent) and their source of income (90.5 percent). As expected, the most severe impact in the case of women was felt on health (98.4 percent), availability of safe drinking water (98.2 percent) and food security (97.8 percent). Health of children was the most affected (91.1 percent) followed by food poverty (88.7 percent).

As far as gender dimensions of the effects of the floods on family well-being are concerned, it emerged that floods affected women more severely, in all facets of family well-being, than they did men. As can be seen, income is the only indicator where the female respondents claimed of being less adversely affected than males. Other well-being indicators quoted by them indicate that the percentage of women affected was higher than that of men (Table 5.6).

To conclude, the floods caused severe hardships in the lives of the affected population. Their overall well-being was compromised by the non-availability of formerly available income sources,

especially for men; and non-availability of safe drinking water, non-existence of sanitation facilities, food insecurity and poor health facilities, for women in particular.

COPING STRATEGIES

The review of the literature indicates that households usually identify ways to mitigate and minimise the adverse impacts of the floods on their overall well-being. This section provides a summarised distribution of coping mechanisms adopted by the affected households during the floods. Moreover, it also focusses on the gender roles in the identification of the coping strategies adopted by the affected communities both during the floods and in their aftermath.

The analysis is based on the responses of both the male and the female population affected by the floods. The analysis built has also helped in understanding the role played by the two sexes in the decisions taken about the ownership and control of household and financial resources.

Coping Strategies during the Floods

During the disaster, the affected households did not have enough food to fulfill the nutritional needs of the family. Table 5.7 is reflective of the responses received from the female respondents about the measures taken by them to minimise suffering. According to the 86 percent of the respondents, the families did not eat food for a full day during the disaster. Out of the 86 percent, 28 percent skipped meals several times while 58 percent did not eat occasionally. Similarly, 85 percent reduced their food consumption. A significant percentage (82.6) of households protected the food consumption of children by reducing adult food consumption. Some 71 percent of the affectees sold their assets to fulfill the nutritional needs. Borrowing from friends and family, earnings from casual labour, snatching food, eating somewhere else and begging for food were also mentioned.

Table 5.7
Coping Strategies Adopted by the Affected Households During Floods - Female Perspective
(Percent)

	Sometimes	Often	Total
Did not eat for a full day	58.3	27.7	86.0
Limit portion size	58.1	26.7	84.8
Reduce number of meals	62.5	22.2	84.6
Reduce adult consumption	51.7	30.9	82.6
Sold Household assets	35.9	35.3	71.3
Borrow/rely on friends/family	40.7	24.6	65.3
Rely of casual labour	32.7	24.2	56.9
Snatch food	31.5	17.2	48.7
A household member eat elsewhere	27.9	12.0	39.9
Begging for food	27.7	12.0	39.7

Source: SPDC Survey 2012

Gender Roles in Coping Strategies: The Two Perspectives

In order to probe the roles and responsibilities in activities performed to cope with disasters like floods, four choices were given to both female and male respondents. These four choices indicate that the coping responsibility performed (1) solely by men, (2) solely by women, (3) jointly by both men and women and (4) not performed at all due to either unavailability of assets or availing other choices.

Table 5.8 shows the responses received from both female and male respondents regarding the roles and responsibilities. The responses received from female respondents show that there is literally no role of women in activities ranging from getting food to selling assets and other

Table 5.8
Gender Role and Responsibilities in Activities Performed to Cope with Disaster

(Percent)

Activities	Male Perspective				Female Perspective			
	Male	Female	Both	None	Male	Female	Both	None
Meeting food deficit	97.4	0.2	2.4	0.0	92.4	0.6	7.0	0.0
Sell assets	82.8	0.2	2.2	14.8	92.6	0.2	3.8	3.4
Sell Livestock	76.6	0.4	3.8	19.2	92.6	0.2	3.4	3.8
Sell food	67.6	0.0	1.6	30.8	92.8	0.0	2.4	4.8
Sell seeds	67.6	0.0	1.2	31.2	92.8	0.0	1.8	5.4
Sell ornament	62.0	0.0	0.8	37.2	91.0	0.0	3.2	5.8
Sell Trees	70.6	0.0	0.8	28.6	92.6	0.0	1.0	6.4
Sell Houses	73.4	0.0	0.8	25.8	92.8	0.0	0.4	6.8
Sell land	69.6	0.0	0.8	29.6	92.8	0.0	0.4	6.8
Receive credit from relatives	79.0	0.6	3.8	16.6	92.6	0.2	2.2	5.0
Receive credit from Bank	68.4	0.0	0.2	31.4	92.8	0.0	0.4	6.8
Alternate livelihood activities	78.8	0.0	0.8	20.4	94.2	0.0	0.4	5.4
Mortgage out land	67.2	0.6	1.6	30.6	92.2	0.0	0.4	7.4
Use saving	70.0	0.4	6.8	22.8	83.2	0.2	10.8	5.8
Migration (Permanent)	78.6	0.2	0.8	20.4	92.2	0.0	0.6	7.2
Migration (Temporary)	75.8	0.4	1.2	22.6	92.2	0.2	0.0	7.6
Disaster-tolerant alternate crop cultivation	63.8	1.4	0.6	34.2	92.4	0.0	0.4	7.2
Poultry rearing	57.0	11.8	0.6	30.6	78.2	14.8	2.0	5.0
Homestead vegetable gardening	57.8	3.6	0.2	38.4	76.8	15.2	0.4	7.6
Shrimp cultivation	57.7	0.2	0.0	42.1	87.4	3.2	0.2	9.2

Source: SPDC Survey 2012

valuables. These activities were either carried out by men or not adopted as a coping strategy. They also mentioned that matters related to receiving of credit, finding an alternative livelihood and decision of migration were the domain of men. Only 15 percent of female respondents said that the activities like poultry rearing and homestead vegetable gardening were performed by women, while three percent of female respondents stated that they also cultivated shrimp. Not surprisingly, 83 percent of the women said that men used the savings, while only 11 percent said that the savings was used by both women and men.

The table also brings forward the responses given by the male respondents for similar activities. It shows that over 97 percent of male respondents mentioned that they arranged food during the period of floods while over two percent said that both men and women arranged the food. More than 57 percent of the men said that activities like selling food, seeds, ornament, receiving credit from bank, mortgaging land, disaster-tolerant alternate crop cultivation, poultry rearing, homestead vegetable gardening and shrimp cultivation were performed by men while over 30 percent said that those were not carried out by anybody. Only 12 percent of men said that poultry rearing was performed by women also.

The differences in responses on women and men about the same activities in some cases also illustrate that women are unaware of the activities performed by men. Consequently, they

perceived that men are engaged in performing all the activities. Further, it also indicates that decision making and ownership of resources largely lie with the male respondents, atleast among the communities covered in the sample.

The gender-sensitive analysis of the impact of floods on employment and well-being indicates that unequal and inequitable division of labour persists in flood affected areas – which further worsened after the floods of 2010. The women's disproportionate engagement in the household domestic work, unpaid work, and underpaid and non-formal sectors of economy increased since then. Their involvement in paid activities decreased as a result of an increase in domestic work and a decline in employment opportunities after the floods. In addition to this, the lack of access and control over material and non-material resources was another factor responsible for the disadvantageous position of women in flood affected areas. Consequently, the role of women in coping activities was rather limited. Men do all the work related to coping with the disaster. These gender roles in disasters are also a reflection of the subordinate position of women in society and the economy of the flood affected areas of district Thatta.

NOTES:

1. For a detailed discussion, see Social development in Pakistan, annual review 2007-08: Women at work, Social Policy and Development Centre (SPDC).
2. Employment to population ratio is the ratio of number of employed divided by working age population, which is 15 years and above for this study.
3. The word 'peculiar' refers to those household responsibilities that arose due to the floods.
4. Unpaid care work includes looking after children, washing clothes, collecting wood for fire and the like.
5. The United Nations System of National Accounts (SNA) is an international standard system of national accounts. It provides an integrated, complete system of constructing national accounts enabling international comparisons of all significant economic activities. Pakistan also follows this system to construct its National Accounts. SNA divides work-related activities into two broad categories: (1) paid activities that fall within the 'production boundary' of the SNA and (2) unpaid care work, which is also referred to as 'extended' SNA work.
6. For discussion on SNA refer, extended SNA and unpaid care work. Valuation of unpaid care work in Pakistan, Ministry of Finance, Government of Pakistan 2009.
7. Non-agriculture sector includes economic activities other than those in the agriculture sector like business or retail trade, factory workers, services sector workers, etc.
8. Agriculture unpaid labour refers to those workers who despite providing labour services in the agriculture sector, remain unremunerated for them.
9. The home and adjoining land occupied by a family (Source: www.merriam-webster.com/dictionary/homestead).
10. Severely affected implies that the activities changed more than 60 percent after the floods.
11. Rickshaw, chinchi, taxi, bus and van drivers.

CHAPTER 6

THE IMPACT OF THE FLOODS ON PHYSICAL AND ECONOMIC INFRASTRUCTURE

CHAPTER 6 THE IMPACT OF THE FLOODS ON PHYSICAL AND ECONOMIC INFRASTRUCTURE

Effects of natural calamities are never gender neutral. The 2010 floods in Thatta had detrimental effects on the livelihoods of the women and men damaging the physical and economic infrastructure including agriculture, food security, human settlements, migration and employment patterns. Given that the flood response programmes have focused too heavily on rebuilding infrastructure[1] and looking at the nature of sufferings, it is hoped that in the case of future disasters the government, civil society and the donor community will respond in a coordinated and concerted manner addressing all the challenges including the reconstruction of the affected areas and reintegration of the distressed communities.

The chapter broadly undertakes a gendered analysis of the impact of the floods on the physical and economic infrastructure and other damages. It also helps in understanding the coping strategies adopted by the affected communities and the precautionary measures taken in case of future flooding.

The survey raised questions about physical and economic degradation and vulnerability of men and women – who have been forced to live in deprivation and isolation due to the floods. Loss of property, possessions, businesses, employment and relocation (disaster-induced migration or resettlement) of the communities are some of the issues reported from the disaster areas. A gender analysis of the data collected suggests that flooding resulted in the isolation of women due to relocation of the affected families. Studies indicate[2] that due to flood-induced relocation of the affected population, women in particular face issues of mobility, food insecurity and the challenge of adjusting to the conditions prevalent in new areas. The issues of displacement in the case of the affected female population are further compounded by the traditional concept of 'chaddar and char diwari'[3]. Whereby, the socialisation of the females, including girls, is restricted to the immediate family/ community members.

Nevertheless, the negative impact is also faced by the male. The gender analysis of the floods on the physical and economic infrastructure highlighted the impact on men as well. According to the survey, isolation of agricultural land, loss to businesses and the workplace, and its direct consequences on the men can be traced to the loss of infrastructure caused by the floods.

ISOLATION OF COMMUNITIES AND BUSINESSES DUE TO THE FLOODS

Community isolation[4] is one of the foremost consequences of severe floods. The word community[5] here refers to the population belonging to a similar workforce. According to the survey, affected communities are faced with damages to property and personal possessions as well as loss of agricultural lands, the workplace and businesses.

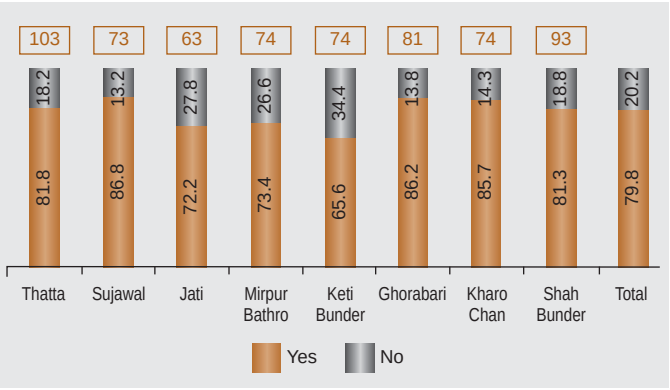
Isolation of Communities

In response to whether the flood water resulted in community isolation, a majority of the female respondents (almost 80 percent) in all the affected areas (talukas) responded in the affirmative. The highest proportion who responded in the affirmative was in taluka Sujawal (86.8 percent)

followed by taluka Ghorabari (86.2 percent) and Thatta (81.8 percent).

Almost all the affected talukas, which were inhabited by communities prior to the floods, remained isolated for more than 60 days (two months). However, the isolation period was the longest for taluka Thatta, where the community remained isolated and was forced to reside in the areas divided by the flood water for more than three months. The population living in talukas Shah Bunder and Ghorabari were isolated for 93 and 81 days respectively.

Chart 6.1
Isolation of Communities Caused by the Floods
(Female Respondents)
(Percent)

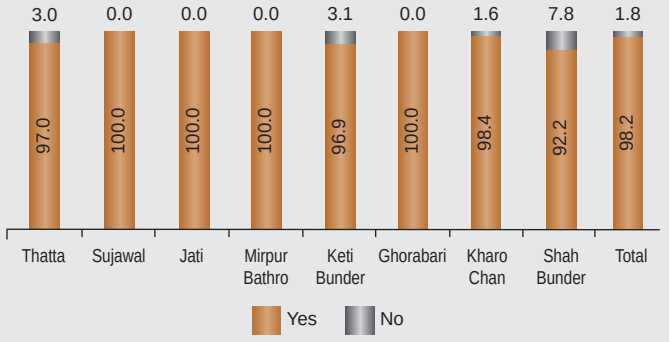


Note: Boxes indicates number of days.
Source: SPDC Survey 2012

Isolation of Houses[6]

Almost all the female respondents of the surveyed talukas reported that their houses remained isolated and were separated from other houses due to the devastation caused by the floods in 2010. The respondents residing in talukas Mirpur Bathoro, Ghorabari, Kharo Chan and Shah Bunder mentioned that their houses remained cut off from the other neighbouring houses for more than 120 days while the female respondents in the remaining talukas mentioned a period of 90 days. As can be seen in the chart, all the respondents belonging to the talukas of Sujawal, Jati, Mirpur Bathoro and Ghorabari responded in the affirmative. Whereas, collectively, some 98.2 percent of the respondents confirmed it.

Chart 6.2
Isolation of Houses Caused by the Floods
(Female Respondents)
(Percent)



Source: SPDC Survey 2012

As can be seen in the two charts above, the female responses indicate more severity in regards to the difficulties faced after the floods. It is important to remember that the culture promoting interdependency is more prevalent among the population living in underdeveloped rural areas – they share their problems and even basic necessities such as food. For children also, it resulted in loneliness, particularly, since they were unable to play together. Altogether, the two types of isolation caused fear and loneliness among the affected communities.

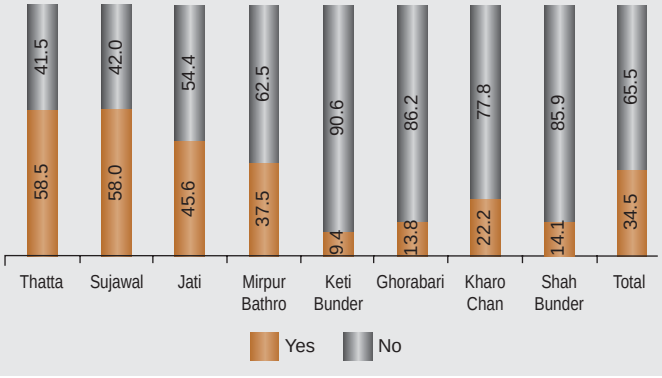
Isolation of Agriculture/Grazing Land

Chart 6.3 represents the male perspective on the isolation of agriculture/grazing land caused by the floods. According to the survey findings, 65.5 percent of the respondents in district Thatta revealed their agriculture/grazing land was not isolated as a result of flooding. Interestingly, about 91 percent of the respondents in taluka Keti Bundar (90.6 percent) said that either they do not

have agricultural land or their agricultural lands were not isolated by the flood water. This was followed by respondents of Ghorabari and Shah Bunder (86 percent). On the other hand, about 58 percent of the respondents in the two talukas Thatta and Sujawal said that their agriculture land was flooded. Further, they reported that the lands were isolated for two months or more. The people living in the affected areas, unfortunately, were unable to cultivate and lost their major source of earning. This negatively affected their well-being and further pushed them below the poverty line.

Chart 6.3
Isolation of Agriculture/Grazing Land Caused by the Floods
(Male Respondents)

(Percent)



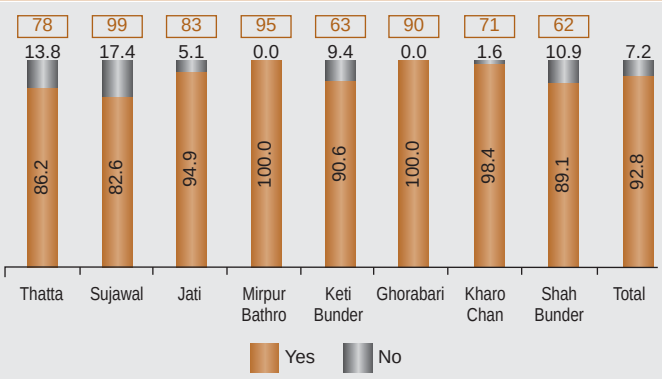
Source: SPDC Survey 2012

Isolation of Businesses/Place of Work

Regarding the isolation of business or workplace caused by the floods, the majority of the respondents in all the talukas responded in the affirmative (93 percent). All of the respondents belonging to taluka Mirpur Bathoro and Ghorabari responded in the affirmative and in neither of the talukas less than three months were mentioned. Similar to isolation of agricultural and grazing land, isolation of the workplace, shops, restaurants and the like also affected the major source of earning in these areas and further deprived the residents. The affectees were not able to continue their businesses and work.

Chart 6.4
Isolation of Businesses or Work Place due to the Floods
(Male Respondent)

(Percent)



Note: Boxes indicates number of days.
Source: SPDC Survey 2012

As women living in these geographical areas usually do not work outside of their homes, the question was not posed to them.

DAMAGES CAUSED BY THE FLOODS

For this section, impressions were taken from both male and female respondents. The females were asked about the type of damages caused to their houses, grazing or agriculture land and boats, whereas male respondents were asked about the financial implications of damages caused to their houses, workplaces and other assets.

Damage Caused to the House and Household Assets

Female respondents were asked about the type of the damage(s) caused to their houses and household possessions. Table 6.1 shows the response of female respondents. Among the female respondents of all the affected talukas, some 82 percent said that the exterior of their house was damaged by the floods, while eight percent complained about the damage caused to the interior of their houses and boats. Respondents living in taluka Keti Bunder (96.9 percent), Ghorabari (96.9 percent) and Kharo Chan (95.2 percent) (located close to the sea) reported that more than 90 percent of the area outside their house was damaged and remained flooded. Whereas, only two percent of the respondents each belonging to taluka Kharo Chan and Shah Bunder said that no damage was caused.

Table 6.1
Property Affected by Flood Water (Female Respondents)
(Percent)

Taluka	Area inside house	Area outside house	Grazing or Agricultural land	Boat	No Damage	Total
Thatta	12.1	75.8	0.0	12.1	0.0	100
Sujawal	10.3	58.8	4.4	26.5	0.0	100
Jati	7.6	72.2	3.8	16.5	0.0	100
Mirpur Bathoro	7.8	87.5	3.1	1.6	0.0	100
Keti Bunder	3.1	96.9	0.0	0.0	0.0	100
Ghorabari	3.1	96.9	0.0	0.0	0.0	100
Kharo Chan	3.2	95.2	0.0	0.0	1.6	100
Shah Bunder	14.1	84.4	0.0	0.0	1.6	100
Total	8.0	82.0	1.6	8.0	0.4	100

Source: SPDC Survey 2012

Table 6.2 helps in bringing forward the average cost of damage caused, based on the responses of the male population affected in all the talukas of the district. Almost all the males covered in the sample from each taluka asserted that the building of their house, shop and/or office workplace was damaged. However, the average cost of the damage caused by the floods varies among talukas. The highest cost on average, amounting to over Rs169 thousand, was in taluka Thatta, while in the other talukas the average cost turned out to be less than Rs100 thousand. The lowest average cost of nearly Rs69 thousand was reported in Jati.

On the question of damages caused to the household/ workplace assets, more than 50 percent of the male respondents in each of the taluka stated that those were in fact damaged. The highest proportion stating that 'damage was caused' was reported in taluka Thatta (89 percent) where the average cost stood at Rs64 thousand. The average cost of the damage caused reported in Kharo Chan was Rs77 thousand plus – where 60 percent of the respondents

Table 6.2
Average Cost of Financial Damage Caused by the Floods (Rupees) (Male Respondents)

	Damage to Building		Damage to Contents		Other Damages		Total	
	HH (%)	Av. Cost (Rs.)	HH (%)	Av. Cost (Rs.)	HH (%)	Av. Cost (Rs.)	HH (%)	Av. Cost (Rs.)
Thatta	98.5	169,400	89.2	64,100	86.2	33,000	100.0	252,400
Sujawal	100.0	92,500	65.2	61,000	44.9	38,400	100.0	149,500
Jati	100.0	68,900	67.1	70,300	51.9	25,800	100.0	129,500
Mirpur Bathoro	100.0	92,500	60.9	52,300	50.0	22,000	100.0	135,400
Keti Bunder	100.0	94,100	56.3	33,900	56.3	68,900	100.0	151,900
Ghorabari	100.0	99,400	69.2	31,000	47.7	17,700	100.0	129,300
Kharo Chan	96.8	82,700	60.3	77,400	42.9	22,100	96.8	140,700
Shah Bunder	93.8	75,000	53.1	39,300	35.9	11,700	100.0	95,400
Total	98.6	96,400	65.9	56,100	51.7	28,800	99.6	147,400

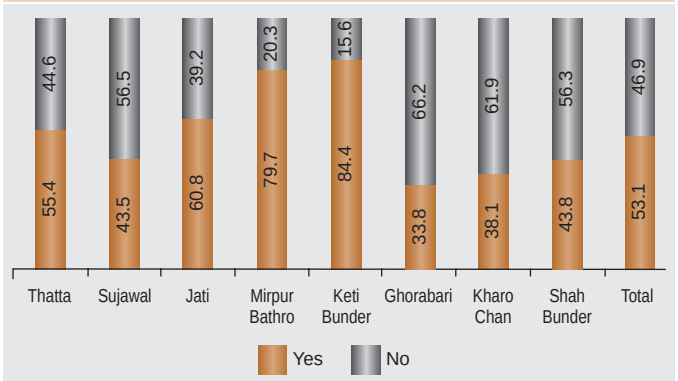
Source: SPDC Survey 2012

mentioned the damages. Whereas, the lowest was reported in Shah Bunder – 53 percent of the respondents expressed their concerns about the damages caused.

The male respondents were asked about the financial implications of the damages related to house and/or workplace and/or other assets such as, boats and livestock. The responses indicate that the average cost of the damages reported differs among talukas. It ranges from over Rs11 thousand in Shah Bunder to nearly Rs69 thousand in Keti Bunder. The total average cost incurred as reported by the male respondents was highest in taluka Thatta (Rs252 thousand) and lowest in taluka Shah Bunder (Rs95 thousand).

Keeping in view the literature produced[7] which has indicated that disasters like floods, at times, bring gains to individuals and societies in the form of increased productivity of agricultural land, higher fish catch after the floods , an additional question on the gains made as a direct consequence of the floods was posed to the male respondents. The response did not indicate any gain in productivity of agricultural land, higher fish catch and the like except the financial gains made from social safety nets. Whereas, over 50 percent of the respondents living in the affected talukas accepted the financial gains made as a direct consequence of the floods. The population living in taluka Keti Bunder (84 percent) and Jati (60 percent) reported the maximum gains. When asked what kind of gain they attained, all of the male respondents from the entire district of Thatta mentioned that they were given the 'Watan Card[8]' and 'Benazir Income Support Card[9]' by the government in order to reconstruct their houses and support their livelihoods after the floods.

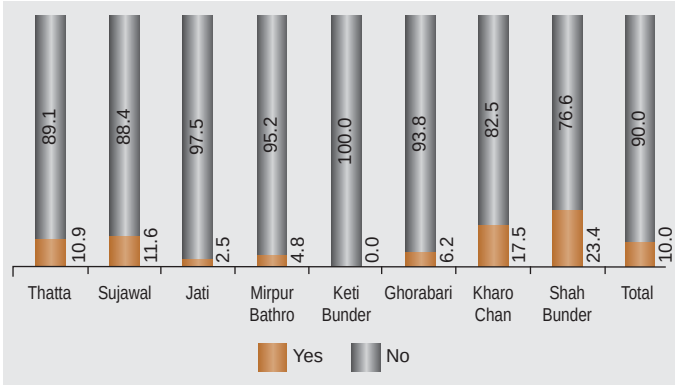
Chart 6.5
Financial Gains Made from the Floods
(Male Respondents)
(Percent)



Source: SPDC Survey 2012

Male respondents were then inquired about whether damages to their homes and household possessions were measured by an official assessor after the floods. More than 75 percent of the male respondents in each of the taluka replied in the negative. This proportion was over 90 percent in talukas Jati, Mirpur Bathoro and Ghorabari. Whereas, 100 percent of those belonging to Keti Bunder responded in the negative.

Chart 6.6
Post-Floods Measurement of the Loss by an Official Assessor
(Male Respondents)
(Percent)



Source: SPDC Survey 2012

Surprisingly, this is inspite of the 50 percent acknowledging that they received the 'Watan Card' and 'Benazir Income Support Card'. A mere 10 percent of the total respondents said that the damage was measured by an official assessor. This indicates that no proper assessment has been undertaken by the government. Such an assessment would have facilitated the proper identification of the affectees. In the absence of it, there is a chance that a person or household with less damages got comparatively higher government support, while a person or household with higher damages got less support.

PROVISION OF FACILITIES AND PROBLEMS FACED AT RELOCATION SITES

Almost all the female respondents in each of the taluka, except Shah Bunder, indicated that their family was compelled to leave their houses, in 2010, due to flood water. In Shah Bunder, according to some of the respondents (37.5 percent) even though their houses were surrounded by water, their families did not relocate. Those households and families who did relocate during the floods returned after almost three months.

Table 6.3 presents the responses given by females covered in the sample regarding the places where households were relocated to due to the destruction caused by the floods. More than 55 percent of the female respondents in each taluka, except Jati and Kharo Chan, said that they were relocated to camps. The other places mentioned were relatives' houses, open areas or along roadsides, self-made huts, schools (private/public), rented places, deserts, friends or neighbours and government buildings. Each of the options availed caused discomfort and the privacy of the households was violated. Those living in makeshift arrangements had no toilets and a lack of hygiene. Even though both sexes faced these challenges, they were particularly daunting for women and children.

The last column of Table 6.3 is indicative of the taluka-wise response of the female population on the number of hours spent in reaching the relocation sites. The longest hours were cited by the respondents living in taluka Jati (nine hours) while the respondents belonging to taluka Thatta said that they reached the relocation sites within three hours. The time variation was mainly due to the geographical location of the taluka, quality of road networks and connectivity of the taluka to major highways.

Table 6.3
Sites the Households were Relocated to due to the Floods
(Female Respondents)

(Percent)

Taluka	Relatives	Relocation Camp	Open Area/ Road Side	Others*	Total	Hours to reach place
Thatta	9.1	56.1	12.1	22.7	100	3
Sujawal	17.6	70.6	1.5	10.3	100	4
Jati	23.1	41.0	10.3	25.6	100	9
Mirpur Bathoro	35.9	59.4	0.0	4.7	100	7
Keti Bunder	9.7	90.3	0.0	0.0	100	5
Ghorabari	15.4	63.1	1.5	20.0	100	5
Kharo Chan	39.7	46.0	3.2	11.1	100	5
Shah Bunder	10.0	75.0	0.0	15.0	100	4
Total District	21.3	59.6	4.2	14.9	100	5

Source: SPDC Survey 2012

Table 6.4
Source of Transportation to Reach Relocation Site
(Female Respondents)

(Percent)

Taluka	Self	Government	NGOs/CBOs	Relatives	Others	Total
Thatta	57.4	5.6	11.1	24.1	1.9	100
Sujawal	68.9	14.8	1.6	13.1	1.6	100
Jati	66.2	13.2	1.5	10.3	8.8	100
Mirpur Bathoro	92.6	3.7	0.0	3.7	0.0	100
Keti Bunder	50.0	33.3	6.7	10.0	0.0	100
Ghorabari	77.8	3.7	0.0	18.5	0.0	100
Kharo Chan	92.5	3.8	0.0	3.8	0.0	100
Shah Bunder	94.3	0.0	2.9	2.9	0.0	100
Total District	75.1	9.0	2.7	11.2	2.0	100

Source: SPDC Survey 2012

75 percent of the families living in the affected areas arranged transportation to relocation sites themselves. In all talukas, except Keti Bunder and Thatta, more than 65 percent of the female respondents stated that they themselves arranged the transportation. In Keti Bunder, 33 percent said that it was provided by the government. Whereas, some 24 percent of the population living in Thatta said that the transport was provided by their relatives. The survey findings further point out that in talukas where people were unable to make arrangements, their relatives helped them instead of the government. The role of non-governmental organisations (NGOs) remained limited to some five talukas where they provided transportation services. Among these five talukas, the highest share of 11.1 percent appeared in Thatta, followed by Keti Bunder (6.7 percent), Shah Bunder (2.9 percent) and less than two percent in Sajawal and Jati.

Table 6.5 lists the type of food and other assistance received by the households at the relocation sites. The survey findings indicate that 29 percent of the female respondents living in all the talukas of district Thatta said that they received non-cooked food, 28 percent received cooked food and 8.4 percent of the affectees received only mineral water, while the remaining (34.3 percent) complained about not receiving any food assistance. Independently, in the case of each taluka the proportions differ. For example, in Keti Bunder 97 percent of the respondents received food assistance, of which 50 percent reported receiving non-cooked food and 24 percent each received cooked food and mineral water. The proportion of respondents who did not receive any food assistance was found highest in Ghorabari (over 49 percent).

Table 6.5
Type of Food Assistance Household Received at Relocation Sites
(Female Respondents)

(Percent)

Taluka	Cooked Food	Non-Cooked Food	Mineral Water	Did Not Receive	Total
Thatta	25.8	31.8	9.1	33.3	100
Sujawal	34.8	29.9	16.2	19.1	100
Jati	29.6	29.6	2.4	38.5	100
Mirpur Bathoro	36.5	19.4	9.7	34.4	100
Keti Bunder	23.7	49.5	23.7	3.2	100
Ghorabari	17.3	28.5	5.0	49.2	100
Kharo Chan	22.4	26.9	3.0	47.6	100
Shah Bunder	31.6	29.5	6.3	32.5	100
Total District	27.9	29.4	8.4	34.3	100

Source: SPDC Survey 2012

The response generated from the sample, perhaps, indicates the non-systematic and haphazard response of the government, civil society and the donor community. The response initiated by the three sectors, seemingly, lacked proper planning and gender-specific needs were not kept under consideration.

Table 6.6 presents the sources that provided the food assistance. Overall in district Thatta, 33 percent of the food was provided by the government, 53 percent by NGOs and community-based organisations (CBOs), 7.5 percent by the relatives of respondents and 6.5 percent by other sources (army, police and political parties). It emerges from the survey findings that relative to other sources, the NGOs and CBOs were the major source of food providers followed by the government in all the talukas, except Keti Bunder where the major food provider was the government.

Table 6.6
Source of Food Provision
(Female Respondents)

(Percent)

Taluka	Government	NGO/CBOs	Relatives	Others	Total
Thatta	31.0	64.3	0.0	4.8	100
Sujawal	27.3	61.8	5.5	5.5	100
Jati	31.3	47.9	12.5	8.3	100
Mirpur Bathoro	27.5	57.5	10.0	5.0	100
Keti Bunder	66.7	23.3	3.3	6.7	100
Ghorabari	42.4	48.5	3.0	6.1	100
Kharo Chan	30.3	39.4	24.2	6.1	100
Shah Bunder	11.5	76.9	0.0	11.5	100
Total	32.9	53.1	7.5	6.5	100

Source: SPDC Survey 2012

Table 6.7
Problems Encountered in Travelling to and Finding a Relocation Site
(Female Respondents)

(Percent)

	Travelling to relocation place				Finding a relocation place				
Taluka	None	Traffic congestion	Injury/health problems	Total	None	Insufficient information	No space at camp site	Other	Total
Thatta	28.8	68.2	3.0	100	48.5	13.6	31.8	6.1	100
Sujawal	36.8	61.8	1.5	100	44.1	8.8	42.6	4.4	100
Jati	37.2	60.3	2.6	100	56.4	17.9	24.4	1.3	100
Mirpur Bathoro	35.9	62.5	1.6	100	67.2	12.5	17.2	3.1	100
Keti Bunder	41.9	58.1	0.0	100	77.4	3.2	19.4	0.0	100
Ghorabari	38.5	53.8	7.7	100	55.4	13.8	27.7	3.1	100
Kharo Chan	33.3	57.1	9.5	100	68.3	14.3	17.5	0.0	100
Shah Bunder	34.2	44.7	21.1	100	52.6	36.8	10.5	0.0	100
Total District	35.5	59.2	5.3	100	57.5	14.8	25.2	2.5	100

Source: SPDC Survey 2012

The questionnaire also contained questions about the type of the problems encountered while travelling to the relocation sites and the difficulties encountered during their stay there. Table 6.7 and Table 6.8 indicate that out of the total females approached, the majority (59 percent) complained about severe traffic congestion (prolonging their travel hours), while over 35.5 percent did not face any problems. Injuries or other health-related problems were reported by only five percent of the respondents.

Table 6.8
Problems Encountered by the Affectees During their Stay at the Relocation Sites
(Female Respondents)

(Percent)

Taluka	None	Unfriendly attitude	Insufficient space	Insufficient food	No separate facilities for women	Total
Thatta	27.3	0.0	1.5	63.6	7.6	100
Sujawal	41.2	4.4	2.9	27.9	23.5	100
Jati	42.3	2.6	0.0	29.5	25.6	100
Mirpur Bathoro	42.9	4.8	4.8	39.7	7.9	100
Keti Bunder	41.9	0.0	0.0	22.6	35.5	100
Ghorabari	42.2	1.6	1.6	34.4	20.3	100
Kharo Chan	46.8	0.0	4.8	37.1	11.3	100
Shah Bunder	52.6	0.0	0.0	39.5	7.9	100
Total District	41.5	1.9	2.1	37.4	17.0	100

Source: SPDC Survey 2012

Taluka-wise, more than 55 percent of the respondents in each taluka reported facing traffic congestion except Ghorabari and Shah Bunder. Whereas, three percent or less of the respondents, in each of the talukas, suffered either injuries or other health-related problems except Shah Bunder, Kharo Chan and Ghorabari where 21 percent, 10 percent and eight percent of the respondents respectively faced health-related problems.

In regards to the issue of finding relocation sites, 58 percent of the respondents residing in the district stated that they did not encounter any problem, 15 percent said that they suffered due to lack of information, while 25 percent said that there was no space available at the camp site. The responses, however, varied for each of the taluka. For example, in Sujawal over 42 percent complained of not having adequate space at the relocation sites. In Shah Bunder, around 11 percent of the respondents had similar complaints. Further, in Shah Bunder 37 percent Mirpur Bathoro (12.5 percent) of the respondents complained about the lack of information.

Table 6.8 presents the findings related to problems encountered by the affectees during their stay at the relocation sites. Surprisingly, around 42 percent of the female respondents living across the district said that they did not encounter any problem. Among those who did face problems, the majority (37.4 percent) complained about insufficient food supplies. The largest proportion citing this complaint belonged to taluka Thatta (nearly 64 percent) and lowest were from taluka Sujawal (28 percent). Similarly, some 17 percent of the female population affected by the floods across the district complained about the non-availability of separate facilities for the female affectees. Among these, the majority belonged to Keti Bunder (35.5 percent) and Jati (25.6 percent), Sujawal (23.5 percent) and Ghorabari (20.3). Several studies[10] indicate the importance of taking into consideration the gender differentials of the human sufferings – caused by natural disasters or conflicts.

Female respondents were also asked about the transportation costs incurred by them or their households while moving to and from relocation sites. It was found that the cost of transportation incurred was higher when going to a relocation site than the cost of returning home (Table 6.9).

On an average, the transportation cost ranged from Rs2,300 to Rs5,100 while going to relocation place, whereas it ranged from Rs1,800 to Rs4,200 while coming back home. The highest transportation cost was reported by respondents living in taluka Kharo Chan followed by those living in talukas Mirpur Bathoro and Ghorabari.

Table 6.9
Transportation Cost Incurred by the Respondents
(Female Respondents)

(Rupees)

Taluka	Going to relocated place	Coming back to home
Thatta	4,300	3,500
Sujawal	4,000	3,700
Jati	4,500	4,200
Mirpur Bathoro	4,900	4,200
Keti Bunder	2,300	1,800
Ghorabari	4,700	3,200
Kharo Chan	5,100	3,600
Shah Bunder	3,400	2,400
Total	4,300	3,500

Source: SPDC Survey 2012

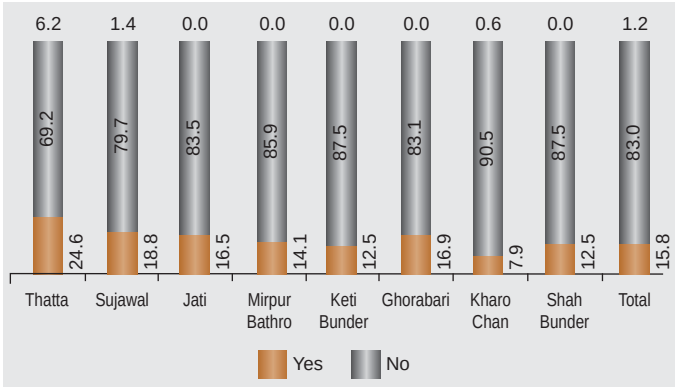
THE MALE VIEWPOINT ABOUT THE IMPACT OF FLOODS ON WOMEN

It is argued that floods may change gender roles either by pushing more women from paid labour to unpaid care work or vice versa[11]. The earlier chapter on employment confirmed that employment opportunities for women in flood affected areas were reduced due to floods. As reflected in Chart 5.1 in Chapter five, the overall female employment rate declined from 37.9 percent to 26.4 percent – a decline of an alarming 11.5 percentage points. Moreover, Table 5.3 in the same section indicated that 80 percent of female respondents mentioned an increase in their household responsibilities after floods, which was one of the reasons cited for not working for paid or remunerated work. This section aims to analyse whether their male counterparts were aware of the change in the role and responsibilities of women after the floods.

Chart 6.7 presents the perceptions of the male respondents on the change(s) (if any) brought by the floods in the role and responsibilities of females. While, predominantly the males said that the roles of female members have not changed, 16 percent male confessed that the role and responsibilities of women did change after the floods. Given that change of role did not incorporate addition and reduction in the pre-flood work responsibilities, a sizeable number women experienced changes in their role. This perception also coincides with the decline in employment opportunities for women.

Chart 6.7
Role and Responsibilities of Females After the Floods
(Male Respondents)

(Percent)



Source: SPDC Survey 2012

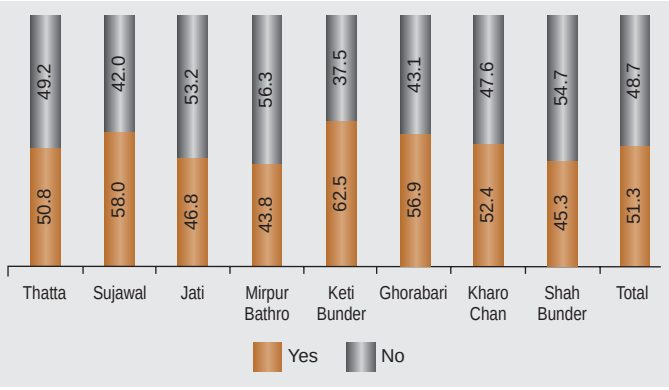
Taluka-wise male responses indicating a change in female role and responsibilities were highest in Thatta (25 percent) and lowest in Kharo Chan (eight percent). Males were further asked whether the female members of the household participated in the reconstruction activities. As shown in Chart 6.8, more than half of the male respondents across the district replied in the

affirmative. As can be seen, the highest being in taluka Keti Bunder where 63 percent of the male respondents said that the female family members participated in the reconstruction activities of the house damaged by the floods.

While there is ample literature available about how floods disproportionately affect sexes, and women are affected more than men[12], Chart 6.9 shows that more than 60 percent of the males, in each taluka, except Kharo Chan, stated that males faced greater problems compared to females.

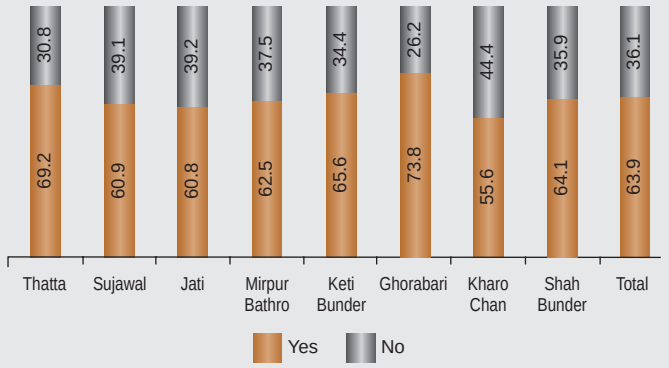
The chart clearly demonstrates that despite challenges and hardship faced by women in flood affected areas of Thatta, at the time of floods and in their aftermath, their male counterparts were less aware about them. For instance, at relocation sites, women complained about the lack of separate toilets; challenges due to pregnancy; little food; sleeping in congested spaces, sometimes even at the roadside; and fewer employment opportunities available for them during the post-flood period.

Chart 6.8
Responses Showing Participation of Female of the House in Reconstruction Activities
(Percent)



Source: SPDC Survey 2012

Chart 6.9
Responses Showing Who Faced Greater Problems at the Time of the Foods
(Percent)



Source: SPDC Survey 2012

THE MALE VIEWPOINT ABOUT THE MEASURES ADOPTED FOR VIGILANCE

The gendered impacts of floods can be minimised by providing timely warnings about the intensity of floods and suggesting appropriate coping mechanisms. In this regard, the survey also tried to explore the measures undertaken by the authorities to alert households prior to or at the time of floods. The male respondents were asked whether they received any call to leave their homes before the floods.

Table 6.10 indicates that more than half of the male respondents in each taluka mentioned that they were not intimated, informed or cautioned by any government or non-government department/office. Only in Keti Bunder over 66 percent respondents said that they received an alert call asking them to vacate their homes. Out of 39.3 percent of those who received the call, the majority (22.6 percent) said that they believed it immediately, followed by those who contacted their friends or family to consult. Some also said that they did not pay heed to the call. Among those who received the alert calls the response(s) varied across the affected talukas as

Table 6.10
Receiving an Alert Call for the Floods
(Male Respondents)

(Percent)

Taluka	No Alert call Received	Received Alert Call				Total
		Believed it immediately	Contacted friends/family	Did not pay attention	Sub Total	
Thatta	60.0	18.5	15.4	6.2	40.0	100
Sujawal	75.4	2.9	13.0	8.7	24.6	100
Jati	60.8	31.6	7.6	0.0	39.2	100
Mirpur Bathoro	73.4	23.4	3.1	0.0	26.6	100
Keti Bunder	34.4	40.6	25.0	0.0	65.6	100
Ghorabari	66.2	18.5	12.3	3.1	33.8	100
Kharo Chan	50.8	25.4	23.8	0.0	49.2	100
Shah Bunder	50.0	28.1	15.6	6.3	50.0	100
Total	60.7	22.6	13.6	3.2	39.3	100

Source: SPDC Survey 2012

can be seen in Table 6.11. Looking at the overall percentages, the majority (43 percent) were informed by the local government offices, family/ friends cited were cited as the source by 29.7 percent followed by political parties (8.7) and electronic media (6.2 percent). It is important to note that despite the growth of NGOs/CBOs during the last couple of decades, merely one percent of the affectees received the warning from them.

In Kharo Chan, 77 percent of the respondents said that they did receive an alert call from the representatives of local government, 13 percent were cautioned by family and friends, while 9.7 percent were intimated by the police or army. Among those belonging to Mirpur Bathoro, 17.6 percent acknowledged receiving an alert call from the representatives of local government, 65 percent mentioned family and friends, 12 percent electronic media, while six percent got the information via the announcements made by the mosques of their areas.

Table 6.11
Source of Alert Call Received
(Female Respondents)

(Percent)

Taluka	Local Government	Police/ Army	NGO/ CBO	Family/ Friends	Electronic Media	Political Party	Mosque	Total
Thatta	24.0	16.0	8.0	32.0	4.0	16.0	0.0	100
Sujawal	29.4	0.0	0.0	52.9	17.6	0.0	0.0	100
Jati	35.5	0.0	0.0	48.4	6.5	9.7	0.0	100
Mirpur Bathoro	17.6	0.0	0.0	64.7	11.8	0.0	5.9	100
Keti Bunder	52.4	33.3	0.0	0.0	0.0	14.3	0.0	100
Ghorabari	28.6	19.0	0.0	28.6	4.8	4.8	14.3	100
Kharo Chan	77.4	9.7	0.0	12.9	0.0	0.0	0.0	100
Shah Bunder	56.3	0.0	0.0	15.6	9.4	18.8	0.0	100
Total	43.1	9.2	1.0	29.7	6.2	8.7	2.1	100

Source: SPDC Survey 2012

Table 6.12
Source of Suggestions Received to Cope with the Floods
(Male Respondents)

(Percent)

Taluka	Relatives	Friends/Neighbors/ Co-workers	Local Authorities	Police/ Army	CBOs	Self	Party	None	Total
Thatta	30.8	40.0	1.5	6.2	6.2	12.3	0.0	3.1	100
Sujawal	24.6	44.9	5.8	5.8	5.8	1.4	1.4	10.1	100
Jati	34.2	53.2	5.1	1.3	1.3	2.5	0.0	2.5	100
Mirpur Bathoro	46.9	28.1	0.0	4.7	4.7	3.1	1.6	10.9	100
Keti Bunder	28.1	12.5	3.1	28.1	6.3	9.4	0.0	12.5	100
Ghorabari	16.9	21.5	0.0	6.2	4.6	38.5	1.5	10.8	100
Kharo Chan	30.2	23.8	1.6	6.3	0.0	28.6	0.0	9.5	100
Shah Bunder	29.7	29.7	0.0	0.0	0.0	25.0	1.6	14.1	100
Total	30.3	33.7	2.2	5.8	3.4	15.0	0.8	8.8	100

Source: SPDC Survey 2012

The findings presented in Table 6.12 indicate that the majority of the population of the affected talukas were advised by their relatives, friends or co-workers on how to cope with the devastation/ disaster caused by the floods. While, some 15 percent said that they themselves thought about the measures to be taken at the time of floods. Apparently, the local government faltered in this area. This is in spite of the fact that they were ahead in providing the alert (Table 6.11). Whereas, contrary to the general perception, the police/ army in both the cases were cited by 5.8 percent and 9.2 percent of the affectees (tables 6.12 and 6.11).

Finally, the male respondents were asked about the level of preparedness in case of floods in the future. Unfortunately, in spite of the recent experience, 71.5 percent of the male respondents confessed to not being prepared. In talukas like Mirpur Bathoro and Keti Bunder, over 80 percent of the respondents said that they were not prepared. Overall, as against the 71.5 percent, only 23.6 percent said that they were prepared to cope in case of future floods.

Table 6.13
Preparedness to Tackle Similar Situation
(Male Respondents)

(Percent)

Taluka	Not Prepared	Prepared to some extent	Well prepared	Total
Thatta	67.7	12.3	20.0	100
Sujawal	75.4	21.7	2.9	100
Jati	64.6	34.2	1.3	100
Mirpur Bathoro	81.3	18.8	0.0	100
Keti Bunder	81.3	18.8	0.0	100
Ghorabari	75.4	24.6	0.0	100
Kharo Chan	68.3	23.8	7.9	100
Shah Bunder	64.1	29.7	6.3	100
Total	71.5	23.6	5.0	100

Source: SPDC Survey 2012

The analysis presented in the chapter, clearly brings forward the miseries of both women and men affected by the floods separately. It shows that damages of physical and economic infrastructure affected both the male and female population. However, women faced greater challenges due to floods; their houses largely damaged, they moved to relocation sites with inappropriate facilities and food. Also rehabilitation and reconstruction work

and their household work responsibilities further increased due to an increase in the time and effort required in the collection of safe water and their share in paid employment declined. Despite all these challenges, their male counterparts are less aware about their sufferings.

NOTES:

1. Response to Pakistan's floods: Evaluative lessons and opportunity, The World Bank 2010.
2. For instance IDMC, (2011), OCHA Pakistan, Care International in Pakistan (2011), UNIFEM (2010).
3. The concept of chaddar (veil) and char diwari (the home) is a patriarchal maxim that refers to the socio-cultural norms restricting the mobility of women thereby confining her to the home in Pakistan.
4. The word isolation in this study is used as a synonym for 'surrounded by flood water'. For instance, an isolated house is one that is surrounded by flood water and does not have land linkages with other houses and places. Similarly, an isolated community and workplace implies that an entire community or a workplace is surrounded by flood water and does not have land linkages with other communities and workplaces. However, the isolation of agricultural/grazing land implies that either land was flooded or surrounded by flood water, and was not available for cultivation.
5. The word community in this study is used as a synonym for 'rural communities' which implies a particular rural area considered together with its inhabitants.
6. For instance, an isolated house is one that is surrounded by flood water and does not have land linkages with other houses and places.
7. For details: Bartosova, A., Novotny, V., Hajda, P. and Levinson, B.M. (2000). Evaluation of water quality and ecological risks. Technical Report No. 7, WI 53201-1881. Institute for Urban Environmental Risk Management, Marquette University, Milwaukee.

   Nielsen, D.L. (1998). Bugs, fish, weeds and billabongs: Does flooding affect communities? Water May/June.

   Smith, K. and Ward, R. (1998). Floods: physical processes and human impacts. John Wiley and

   Sons, Chichester, England.
8. Government of Pakistan in collaboration with the provincial governments set up the Citizens Damage Compensation Programme to support affected households with cash in an effort to help restore normalcy. The Watan Card is the instrument through which the government made an immediate one-off payment of Rs20,000 to the affected families in order to ease the misery of the families who lost most of their possessions in the floods. (Source: http://cdcp.nadra.gov.pk/introduction.jsp)

9. "In the year 2007-08, the sharp rise in oil prices and primary products in the international as well as domestic market resulted in double digit inflation, which almost halved the purchasing power of the people. Hence, there was an urgent need for direct and speedy relief to the underprivileged sections of the society. Benazir Income Support Programme (BISP) is the Government of Pakistan's response to the said compulsions.

   The enrolled families are paid cash assistance, Rs.1000 per month, on a quarterly basis; apart from benefits provided under graduation strategy like: long-term, interest-free returnable financial assistance, vocational and technical training, health & life insurance coverage." (Source: http://www.bisp.gov.pk/)

10. WEDO (2007); Commission on the Status of Women (2008); Carvajal et al (2008); Bridge (2008).

11. Elaine Enarson. Gender and natural disasters, infocus programme on crisis response and reconstruction, Working Paper 1, Recovery and Reconstruction Department, ILO Geneva September 2000.

    Briefing paper on flood-displaced women in Sindh Province, Pakistan International Displacement Monitoring Cell, June, 2011, Oslo, Norway.

12. Elaine Enarson. Gender and natural disasters, infocus programme on crisis response and reconstruction, Working Paper 1, Recovery and Reconstruction Department, ILO Geneva September 2000.

CHAPTER 7

KEY FINDINGS AND POLICY IMPLICATIONS

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The 2010 floods in Thatta had a devastating impact on both its people and infrastructure. This study is an attempt to build a proper and fuller understanding of the socio-economic implications of the floods on the lives and livelihood of people residing in the flood affected areas of district Thatta. The gendered interpretation has helped bring forward the peculiar characteristics of the overall impact of the floods, including the sufferings.

The survey helped in tapping some 501 households, consisting of 3000 plus family members, of the affected talukas of district Thatta. Ensuring that both the male and female members of the household were approached, the study has helped in developing a comparative analysis. Two separate structured questionnaires were designed and used to collect gender-specific information related to various socio-economic indicators as well as individual and household information on the impact of floods, household welfare and collective social behaviour of the affectees. The two questionnaires focusing on the various aspects of household well-being included questions on education, health, fertility, psychological stress, employment, sources of income, infrastructure damages, capital losses and challenges faced at the relocation sites.

This chapter presents the summary of findings and offers a set of policy options to help reduce the socio-economic vulnerabilities of women and girls in the flood affected areas of Thatta and also in case of future natural disasters.

SUMMARY OF FINDINGS

The findings of the survey provide specific evidence on women's role and responsibilities in all the three important phases i.e. before the floods, during the floods and after the floods. Broadly, the survey indicates that the responsibility of household work was imposed disproportionately on women even before the floods, which further increased in the post-flood period. Chapter 5 of this report documented the responses of both the female and male respondents on the impact of floods on unpaid work and other activities. Table 5.4 and 5.5 clearly indicate that not only did the role and responsibilities of women increase in the household unpaid care work, their socialising i.e visiting relatives also significantly decreased during the post-flood period.

In contrast to their household responsibilities, the floods caused an increase in economic and social vulnerabilities of women by reducing employment opportunities and negatively affecting their health. For instance, Chart 5.1 of Chapter 5 indicates that women employment to population ratio decreased from 38 percent (prior to the floods) to 26 percent of the working age population at the time of the survey in 2012.

The available district level evidence[1] indicates the deterioration of education indicators after the floods. For instance, the illiteracy rate of males and females (10 years and above) increased in the period immediately after the floods along with the proportion of out-of-school children, both female and male (Chapter 3, Table 3.3). The indicators, however, had started improving at the time of the survey. A comparison of education indicators covering the time period prior to the floods and almost two years after the floods indicates a definite improvement in the primary enrolment rates both for boys and girls. For instance, gross primary enrolment ratio increased from 35 percent before the floods to 48 percent at the time of survey (see Chapter 4, Table 4.5).

Another positive development after the floods is relatively higher growth in the enrolment of girls at the primary level compared to that of boys. For instance, girls' gross primary enrollment ratio increased from 30 percent prior to the floods to 46 percent at the time of the survey – indicating an increase of more than 53 percent in just two years. In contrast, boys' gross enrollment ratio increased from 40 percent before the floods to 49 percent at the time of floods. The trend has helped in marginally narrowing the gender gap in the gross primary enrolment ratio in the flood affected areas of district Thatta.

The increase can be attributed to the increased presence of and motivation provided by the government and non-governmental organisations after the floods. Despite this improvement in gross enrolment rates, almost two-thirds of primary school children are still out of school – majority of whom are girls. This persistent gender disparity in education and literacy indicators in the flood affected households can be attributed to the mindset – where preference is given to the male child's education since it is viewed as an investment for the family's future earnings. Consequently gross enrolment rates for boys are still higher than that of girls for both primary and secondary education (Chapter 4, Table 4.5 and 4.7).

In addition to this mindset, the supply side bottlenecks and demand side factors are also responsible for keeping school-going age children out of school. A closer look into the causes indicates that location/distance and poor infrastructure of schools were the major supply side factors. Moreover, the increased economic burden on the households also forced parents to take their children out of schools. The majority of out-of-school children, in the age group 10-14 years, were either helping the earners in the family (15.4 percent male and 7.8 percent females) to contribute to family income or supporting female household members (21.6 percent male and 11.9 percent females) in unpaid care work (Chapter 4, Table 4.8).

During the post-floods period, homelessness; chronic and epidemic diseases caused by stagnant water; unhygienic conditions; and a reduction in the number of trained health personnel all led to health-related challenges. The data shows that 74 percent of the female population and 56 percent of the male population required medical attention soon after the floods (Chart 4.4). The main medical conditions reported at the relocation sites were gastrological diseases, fever, injuries

caused mainly due to unhygienic conditions, unsafe drinking water, poor quality of food, post-traumatic stress and accidents caused during the floods and at the time of transportation. Compared to the volume of challenge(s), the number of trained medical personnel at relief camps/relocation sites was insufficient . The flood affectees complained of non-availability of doctors, unhelpful staff, long waiting hours and health care expenses as some of the main challenges confronted by them (Table 4.12).

Health facilities available for pregnant women were poor and only 58 percent of pregnancies resulted in live births at the relocation sites (Table 4.16). Stress and unhygienic conditions that led to infections were cited as main reasons for high risk pregnancies. None of the pregnant women reported seeking prenatal consultation at relief camps – a fact that indicates that either the visiting doctors were insensitive to the specific needs of pregnant women or else the ratio of female doctors was too low.

The data collected also show that some 99 percent of the female respondents and 60 percent of the male respondents continue to live with psychological distress at the time of the survey (Table 4.20). The three common reasons cited by the female respondents were undernourishment (insufficient food), absence of proper shelter and economic deprivation along with overall uncertainty. Moreover, 50 percent of the total female population and 30 percent of the total male population had fallen sick two weeks prior to the survey (Chart 4.5). The findings call for immediate measures that need to be taken for the improvement of health and nutrition levels with specific interventions for the female population.

The survey result also shows that isolation[2] of houses and villages created difficulties and caused distress (Chapter 6). Moreover, affected households had to deal with damages caused to their property, personal possessions (assets), loss of agricultural land, destruction caused to the workplace and businesses. Information related to damages indicates that on an average each of the household affected by the floods had to bear more than Rs147,400 of additional financial cost (Chapter 6, Table 6.2).

At relocation sites, women faced more problems than men. In many cases there were no separate toilet facilities available for them (Chapter 6, Table 6.8). Moreover, the female affectees at the relocation sites complained about insufficient food -- a discriminatory practice inbuilt in the subordinate position of women in the existing social structures of Pakistan. The findings clearly indicate the ignorance and intentional unwillingness of the male respondents in acknowledging the hardships faced by female members of the family at the time of the floods and in their aftermath. In response to a question on the issue, the majority of male respondents said that they faced greater problems at the time of floods (Chapter 6, Chart 6.9).

The floods also caused a decline in employment opportunities disproportionately for women in the flood affected areas of Thatta. Prior to the floods in 2010, women in Thatta were

disproportionately engaged in household domestic work, unpaid work, underpaid and non-formal sectors of the economy. After the floods, the women's share in employment further declined, which further increasing the gender disparity in the population to employment ratio. A look at male and female employment ratio indicates that while male employment to population ratio is more or less the same, women's employment ratio declined from 38 percent (prior to the floods) to 26 percent at the time of the survey (Table 5.1, charts 5.1 and 5.2) as mentioned earlier. The main reason for the disparity, seemingly, is the increase in household responsibilities and decline in employment opportunities for women after the floods (Chapter 5). The paid employment for women is largely concentrated in home-based work which includes sewing and embroidery. Moreover, survey results also show an increase in women's role and responsibilities in unpaid care work. Floods also affected some of the social, cultural and economic activities of women more than that of men outside the homestead (Chapter 5).

The impact of floods was not only limited to the social, cultural and economic activities of women and men but also severely affected the various indicators of their well-being. The respondents pointed towards the high level of food insecurity affecting the children. Table 5.6 summarises the views of female respondents on the various aspects of well-being. It indicates that food insecurity increased and so did health-related issues. Some 98 percent of women and 91 percent of children faced such issues after the floods. One possible explanation of these worsening health statistics is the lack of safe drinking water and food soon after the floods.

During the disaster, affected households did not have enough food to fulfill the nutritional needs of their family. Female respondents were asked about the coping strategies adopted by them immediately after the floods. According to the responses received, 86 percent of the affected families did not eat food for one full day and 85 percent reduced their food consumption either by reducing their intake or by reducing the number of meals. A significant percentage (82.6) of households ensured availability of food for children by reducing adult food consumption. Borrowing from friends and family, relying on casual labour, eating outside of the home, food snatching and begging for food were also mentioned as coping strategies (Chapter 5, Table 5.7).

POLICY RECOMMENDATIONS

The gender sensitive analysis of the flood affected areas of district Thatta exposes socio-economic challenges and vulnerabilities faced by women and men living in these areas not only after the floods but even before. For instance, district Thatta (Table 3.3) had low socio-economic indicators indicating gender disparities even prior to the floods.

The research has helped in bringing forward a number of socio-economic challenges faced by the affected population, which can only be addressed by ensuring consistent and coherent policies and programmes. Following are some of the policy recommendations.

A well-thought-out holistic approach is needed to minimise the cruciating effects of floods on women's employment. It is important for the provincial government to ensure the pre-flood job opportunities for women besides creating new employment opportunities for both male and female affectees. Public investment can help create women friendly employment opportunities in the flood affected areas. One plausible intervention, perhaps, is to restore the cultivable land affected by the floods. The significance of the agriculture sector for women can be illustrated by the 11.5 percent decline in women's employment after the floods. It should be noted that most women in the area were employed in the former and agricultural activities were disrupted by the floods.

The loss caused to the livestock by the floods also placed women at a disadvantageous position. Though the government provided cash transfers to the affected households, it is important to revive their earning potential by giving them cattle. Moreover, construction of road networks is also important to connect these areas with markets of dairy and meat products. According to women have been traditionally involved in the management of livestock.

Even though women are also engaged in handicrafts, embroidery and stitching, they are not part of the market based mechanism. The provision of microfinance to enhance the scope of their work and establishing their link with skill, the support and supply chains can help broaden the employment opportunities for the affected female population of the area.

While there is evidence that some flood response programmes have focused on rebuilding infrastructure, there has been little involvement of communities and women in these development initiatives. The involvement of women in the consultative process would have helped incorporate their needs in regards to infrastructure in rebuilding plans.

Appropriate support to livelihood activities in flood affected areas and strengthening of access to technical and financial services for both women and men is vital for expanding rural employment opportunities. For instance, provision of electricity through renewable sources of energy, including solar, will help improve the livelihood opportunities of the population living in these rural areas. Equally important is to provide technical support in developing the capacity of both women and men in managing alternate sources of energy. Moreover, the provision of credit facilities will enable asset ownership and vice versa. This can help in income/employment generation for women as they can purchase sewing machines, for instance, on credit for work.

Further, Thatta is one of the disaster prone districts[3] of Sindh and it cannot be said that future disasters will not threaten the district. The findings of the survey highlight the fact that the majority of the population living in this disaster prone region is not prepared to tackle with such disasters.

Vigilance measures and early warning systems needs to be strengthened to avoid future losses in order to minimise the adverse effects, there should be a better adaptation and preparedness strategy -- consisting of comprehensive guidelines, in general, and for women, in particular. In addition, public investment in water and flood management is also important to prevent and minimise the impact in case of floods in the future. The present cropping pattern needs to be revisited due to the changing climatic conditions and also because of the fact that the economic dividends for the female population are largely based on their presence in the agriculture fields.

In regards to education, an alarming finding is that 69 percent of girls and 62 percent of boys of primary school age are out of school. This is despite the increase seen in enrolment after the floods. The factors contributing to the grave situation are: distance to/location of school, poor quality of education, teacher absenteeism and unavailability of teachers and female teachers, in the case of girls, as major barriers to girls/boys education. The public-private partnership (PPP) and involvement of local communities in the education process can help improve the situation.

The experience of PPP in some areas of Sindh has helped improve the enrolment and completion rates particularly at the primary level. The private sector has been successful in ensuring the attendance of female teachers by providing them transportation facilities and by involving local residents. They also provided regular annual training to female teachers to ensure the quality of education. Such successful initiatives can be replicated in the flood affected areas of Thatta to help improve both the enrolment and completion rates, particularly of girls.

Among the other factors attributed are: poverty and educational costs, parents' perception about education, child's attitude towards education and their presence required for domestic work. Benazir Income Support Programme (BISP) Waseela-e-Taleem -- a co-responsibility cash transfer (CCT) programme for the primary education of the children aged five-12 years -- can play an instrumental role in addressing the issues surrounding the education sector, if properly implemented. So far, BISP Waseela-e-Taleem is not operational in the flood affected areas of district Thatta. An early initiation of these programmes will help improve both the enrolment and completion rate. Meanwhile, based on the analysis of the data it can be inferred that despite Pakistan being a signatory to the Millennium Declaration, the country will falter in achieving the goal of universal primary education in 2015 and achieving gender equality at all other educational levels.

Furthermore, immediate steps are also needed to minimise the effects of floods on health including reproductive and mental health. On curative side, availability of doctors at public health facilities, availability of medicine and friendly attitude of paramedics will help ensure the improvement. Whereas, the provision of food, good nutritional levels and safe drinking water will help prevent poor health and also in the reduction of illnesses. Equally important is to improve the psychological health of the affectees primarily by extending counselling to manage and

minimise post-disaster stress (seen more in the case of female affectees) and also by providing recreational facilities.

The Provincial Disaster Management Agency (PDMA) needs to strengthen its network with the local administration for early drainage of stagnant water of floods that will surely help improve the sanitation and hygiene conditions. In this connection, the PDMA has already prepared the "Sindh Provincial Monsoon/Floods Contingency Plan 2012[4]" which provides information about the losses caused by floods/rains both in 2010/11 and outlined strategy for future disaster management. There is greater focus on advance logistic arrangements, transportation of food to the flood displaced persons (FDP), and hiring of local NGOs for the distribution of food. However, inadequate attention has been given to counter health challenges during the disasters. The authorities need to ensure availability of doctors and paramedical staff at the relocation sites through coordinated efforts from government agencies/departments and/or by promoting public-private partnership and/or by supporting volunteer services to cater the mounting demand for health services. Specific needs of pregnant women also need to be addressed by trained staff and technical facilities with counseling sessions to mitigate stress-related complications. In this regard services of philanthropic organisations be included with early relief measures by the administration.

In order to create awareness among communities about the mitigation strategy, the National Disaster Management Authority (NDMA[5]) has already made plans to make disaster management a part of curricula of the schools from level I-XII. However, given the low literacy level along with lower enrolment rates, particularly in primary and secondary levels, the desired results cannot be achieved. Hence, development of material in the local language primarily focusing on mitigation measures be explored.

NOTES:

1. Pakistan Social and Living Standard Measurement (PSLM) Survey 2008-09 and 2010-11.
2. See endnote 3 of Chapter six for the definition of isolation.
3. http://tribune.com.pk/story/24664/four-sindh-districts-declared-to-be-disaster-prone/
4. http://www.ndma.gov.pk/Documents/Contingency_Plan/2012/CP_Sindh.pdf
5. See Future Outlook at http://www.ndma.gov.pk/PlanAhead.php

References and Bibliography

REFERENCES AND BIBLIOGRAPHY

REFERENCES

Chapter 1

i. Bangladesh Centre for Advanced Studies (2010). Gender and Climate Change Issues in the South Central and South West Coastal Regions of Bangladesh, Bangladesh March 2010.

Del Ninno, Carlo, Paul Dorosh, Lisa Smith, Dilip Roy (2001). The 1998 floods in Bangladesh: Disaster impacts, households coping strategies, and response. International Food Policy Research Institute, Research Report 122, Washington, D.C. 2001.

National Committee for Disaster Management (2012). Cambodia Post-Flood Relief and Recovery Survey 2012, National Committee for Disaster Management, Cambodia May 2012.

ADPC (2008). Impact of Disasters on the Education Sector in Cambodia, Asian Disaster Preparedness Center (ADPC), Bangkok March 2008.

Agnes Babugura, Nompumelelo C Mtshali and Mthokozisi Mtshali (2010). Gender and Climate Change: South Africa Case Study, Heinrich-Böll-Stiftung 2010.

Dwyer, A., Zoppou, C., Nielsen, O., Day, S., and Roberts, S. (2004). Quantifying Social Vulnerability: A methodology for identifying those at risk to natural hazards, Commonwealth of Australia 2004.

ii. Deare, F. (2004). A methodological approach to gender analysis in natural disaster assessment: A guide for the Caribbean, Santiago, Chile: United Nations 2004.

Bradshaw, S. (2004). Socio-economic impacts of natural disasters: A gender analysis, Sustainable Development and Human Settlements Division, Women and Development Unit, Cooperacion Italiana Santiago, Chile, May 2004.

Bangladesh Centre for Advanced Studies (2010). Gender and Climate Change Issues in the South Central and South West Coastal Regions of Bangladesh, Bangladesh Centre for Advanced Studies March 2010.

Del Ninno, Carlo, Paul Dorosh, Lisa Smith, Dilip Roy (2001). The 1998 floods in Bangladesh: Disaster impacts, households coping strategies, and response, International Food Policy Research Institute, Research Report 122, Washington, D.C. 2001.

National Committee for Disaster Management (2012). Cambodia Post-Flood Relief and Recovery Survey 2012, National Committee for Disaster Management Cambodia May 2012.

ADPC (2008). Impact of Disasters on the Education Sector in Cambodia, Asian Disaster Preparedness Center (ADPC), Bangkok March 2008.

Agnes Babugura, Nompumelelo C Mtshali and Mthokozisi Mtshali (2010). Gender and Climate Change: South Africa Case Study, Heinrich-Böll-Stiftung, 2010.

Dwyer, A., Zoppou, C., Nielsen, O., Day, S., and Roberts, S. (2004). Quantifying Social Vulnerability: A methodology for identifying those at risk to natural hazards, Commonwealth of Australia 2004.

Chapter 2

i. Retrieved from the official website of the The United Nations Office for Disaster Risk Reduction (UNISDR). (http://www.unisdr.org/files/25831_20120830disaster20002011copy.pdf)

ii. Retrieved from the official website of the South Asian Association for Regional Cooperation (SAARC). (http://www.saarc-sec.org/areaofcooperation/cat-detail.php?cat_id=54)

iii. Fraser, E. D. G., A. J. Dougill, K. Hubacek, C. H. Quinn, J. Sendzimir, and M. Termansen. 2011. Assessing vulnerability to climate change in dryland livelihood systems: conceptual challenges and interdisciplinary solutions. Ecology and Society 16(3): 3.http://dx.doi.org/10.5751/ES-03402-160303 Green, R. (1993). The political economy of drought in Southern Africa 1991-1993. Health Policy and Planning 8:256-266.

iv. Tapsell SM, Tunstall SM. (2008). I wish I'd never heard of Banbury: The relationship between 'place' and the health impacts from flooding. Health Place; 14 (2):133-154.

v. Du W, FitzGerald GJ, Clark M, Hou XY. (2010). Health impacts of floods, Journal of Prehospital and Disaster Medicine; 25(3) pp, 265-272.

vi. Economic Survey of Pakistan 2011.

vii. ADB-WB Assess Pakistan Flood Damage at $9.7 Billion. (2010, October 14). Press release, The World Bank. Retrieved from http://www.worldbank.org/en/news/2010/10/14/adb-wb-assess-pakistan-flood-damage-at-97-billion (accessed 2012, October 15)

viii. Emergency market mapping & analysis Pakistan flood response. (2010, September 7-28). European Commission.

ix. Disaster assessment in the sub-region: Eclac's methodology. (1996, September 2).

x. Steinführer, A., Kuhlicke, C. (2002). Social vulnerability and the 2002 flood. Country Report (Mulde River), FLOODsite consortium, HR Wallingford, UK.

xi. Bradshaw, S. (2004). Socio-economic impacts of natural disasters: A gender analysis, Sustainable Development and Human Settlements División Women and Development Unit COOPERACION ITALIANA Santiago, Chile.

xii. Du W, FitzGerald GJ, Clark M, Hou XY. (2010). Health impacts of floods, Journal of Prehospital and Disaster Medicine; 25(3) pp, 265-272; Enarson, E. & Hearn-Morrow, E. (1998) "The Gendered Terrain of Disaster: Through Women's Eyes", Praeger, London; Fordham, M. H. (1998). Making women visible in disasters: problematising the private domain, Disasters 22(2), 126-143; Morrow, B. H. (1999). Identifying and mapping community vulnerability, Disasters 23(1), 1-18.

xiii. Haigh, C. & Vallely,B. (2010). Gender and the climate change agenda: The impacts of climate change on women and public policy, Women's Environmental Network; Also discussed by Gardiner (2002) in Gender and Sustainable Development, Heinrich Böll Foundation.

xiv. Agnes Babugura, Nompumelelo C Mtshali and Mthokozisi Mtshali. (2010). Gender and Climate Change: South Africa Case Study, Heinrich-Böll-Stiftung.

xv. Haigh, C. & Vallely,B. (2010). Gender and the Climate Change Agenda, The impacts of climate change on women and public policy, Women's Environmental Network.

xvi. Haigh, C. & Vallely,B. (2010). Gender and the climate change agenda, The impacts of climate change on women and public policy, Women's Environmental Network; Also see United Nations Development Programme. (2008). Human Development Report 2007/08. Fighting climate change: Human solidarity in a divided world, UNDP.

xvii. Fewtrell and Kay. (2006). Flooding and health - a review of the literature, Urban Flood Management project report for the Flood Risk Management Research Consortium, University of Wales, Aberystwyth Flynn BW, Nelson ME .(1998). Understanding the needs of children following large scale disasters and the role of government. Child and Adolescent Psychiatric Clinics of North America 7(1): 211-230; White SR, Henretig FM, Dukes RG. (2002). Medical management of vulnerable populations and co-morbid conditions of victims of bioterrorism. Emergency Medicine Clinics of North America 20(2): 365-392; WHO. (2004). Guidelines for Drinking-water Quality. Third edition Volume 1 Recommendations World Health Organization, Geneva.

xviii. Morrow, B. H. (1999). Identifying and mapping community vulnerability, Disasters 23(1), 1-18.

xix. Key gender messages multi sector needs assessment of floods 2011. Office for the Coordination of Humanitarian Affairs (OCHA)", UN Women, Sindh.

xx. Rapid gender needs assessment of flood affected communities - Pakistan floods, 2010. UN WOMEN (UNIFEM).

xxi. Preliminary rapid gender assessment of Pakistan's flood crisis, 2010. UN WOMEN (UNIFEM).

xxii. Briefing paper on flood-displaced women in Sindh Province, Pakistan, Presented at the Nansen Conference on Climate Change and Displacement in the 21st Century; 5-7 June, 2011, Oslo, Norway. Internal Displacement Monitoring Cell (IDMC).

xxiii. Humanitarian and Early Recovery Overview (HERO). (17 March 2011) . Office for the Coordination of Humanitarian Affairs, PAKISTAN, 2011. Office for the Coordination of Humanitarian Affairs (OCHA).

xxiv. Preliminary rapid gender assessment of Pakistan's flood crisis. (2010). UN WOMEN (UNIFEM).

xxv. Women in emergencies: Unveiling the perceptions. (2011). Care International in Pakistan.

xxvi. Analysis of school damage in flood emergency-gender disparities Sindh a case study, flood emergency response, 2010. UNICEF.

xxvii. Bradshaw, S. (2004). Socio-economic impacts of natural disasters: A gender analysis, Sustainable Development and Human Settlements División Women and Development Unit COOPERACION ITALIANA Santiago, Chile.

xxviii. Gurung, J. D., Mwanundu, S. et. al. (2006). Gender and desertification: Expanding roles for women to restore drylands, International Fund for Agricultural Development (IFAD) http://www.ifad.org/pub/gender/desert/gender_desert.pdf; WEDO. (2003). Common Ground, Women's Access to Natural Resources and the United Nations Millennium Development Goals, New York: WEDO, http://www.wedo.; Mitchell, R. J., et al. 2007. England biodiversity strategy: Towards adaptation to climate change. Department of Environment Food and World Affairs, London. Available from http://www.defra.gov.uk/wildlifecountryside/resprog/findings/ebs-climate-change.pdf

xxix. Ariyanbandu, M.M. and Wackramasinghe, W.M. (2005). Gender dimension in disaster management: A guide for South Asia: Sri Lanka;

BIBLIOGRAPHY

Blogs

Berehoudougou , R. (2012, September 27). Flood victims offering young daughters in early marriage for their 'protection', Thomson Reuters Foundation, London: online blog.

http://www.trust.org/alertnet/blogs/aid-worker-diaries/flood-victims-offering-young-daughters-in-early-marriage-for-their-protection/

Shaikh, A. (2012, August 5). Pakistan's flooding - what does it mean for health? End the Neglect - A blog of the Global Network for Neglected Tropical Diseases, Washington DC: online blog.

http://endtheneglect.org/2010/08/pakistan%E2%80%99s-flooding-%E2%80%93-what-does-it-mean-for-health/

Reports

Haigh, C., Vallely, B. (2010). Gender and the climate change agenda: The impacts of climate change on women and public policy, Women's Environmental Network, London.

Flood Report on Educational Sector of Sindh Province Year 2010- 2011, EMIS Reform Support Unit, Government of Sindh. Department of Education & Literacy, Pakistan.

Flood-Affected Nutrition Survey Sindh, Government of Sindh. Department of Health (2010), Pakistan.

Demographic and Health Survey (DHS) 2006-07, Islamabad. National Institute of Population Studies (NIPS).

Children out of school: Measuring exclusion from primary education, Montreal. (2005). UNESCO Institute for Statistics

Multifaceted challenges a study on the barriers to girls´ education Zambezia province, Mozambique. (2005). UNICEF.

Pakistan Floods 2010, Rapid gender needs assessment of flood affected communities, Islamabad. (2010). UNIFEM - Pakistan.

Guidelines for Reducing Flood Losses. (2002). United Nations Office for Disaster Risk Reduction (UNISDR).

World Fact Book. (2012). Life Expectancy at Birth, Central Intelligence Agency (CIA), United States of America.

World Development Indicators (2011), The World Bank, Washington, United States of America.

World Health Organization (1994), A user's guide to the self-reporting Questionnaire, Division of Mental Health.

Journal Articles

Carlough M, McCall M. (May 2005). Skilled birth attendance: What does it mean and how can it be measured? A clinical skills assessment of maternal and child health workers in Nepal, International Journal of Gynecology and obstetrics, 89(2): 200-8, London.

Stanke, C., Murray, V., Amlôt, R., Dr. Nurse, J., and Professor Williams, R. (May 2012). The effects of flooding on mental health: Outcomes and recommendations from a review of the literature, PLOS Currents Disasters, London.

Lasi, S., Rafique, G., and Peermohamed, H. (August 2010). Childhood injuries in Pakistan: Results from two communities, Journal of Health, Population and Nutrition, International Centre for Diarrhoeal Disease Research, 28(4): 392-398, Bangladesh.

Ismail, Z. H. (1999). Impediments to social development in Pakistan, The Pakistan Development Review, Vol. 38, No. 4, Papers and Proceedings PART II Fifteenth Annual General Meeting and Conference of the Pakistan Society of Development Economists Islamabad, November 5-8, 1999 (Winter 1999), pp. 717-738.

Websites

Asian Development Bank (ADB) (2010), Projects: Pakistan floods (2010) damage and needs assessment, http://www.adb.org/projects/44356-012/main

World Health Organization (WHO), Gender and women's mental health, http://www.who.int/mental_health/prevention/genderwomen/en/

World Health Organization (WHO), Flooding and communicable diseases fact sheet, Humanitarian Health Action, http://www.who.int/hac/techguidance/ems/flood_cds/en/

British Broadcasting Corporation (24th August 2010), BBC News, http://www.bbc.co.uk/news/world-south-asia-11068259

The Express Tribune Daily (20th September 2010). Federal health minister brags of zero infant, maternal mortality, http://tribune.com.pk/story/52191/federal-health-minister-brags-of-zero-infant-maternal-mortality/

The World Bank, Age Dependency Ratio, http://data.worldbank.org/indicator/SP.POP.DPND

Queensland Government, Office of the Queensland Chief Scientist, What are the consequences of flood, http://www.chiefscientist.qld.gov.au/publications/understanding-floods/consequences.aspx

Mary Fran Myers, Trends in Floods, University of Colorado, http://sciencepolicy.colorado.edu/socasp/weather1/myers.html

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