



Working Paper Series

Number 7

*Gender, Climate Change
and
Disaster Risk Management*

– Edited by –

Leith Dunn

Working Paper Series

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Gender, Climate Change and Disaster Risk Management

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Contents

Preface / v

Judith Wedderburn

Introduction / vii

Leith Dunn

GENDER IMPACT OF HURRICANES

- 1** Disaster Risk Management and Hurricanes in the Caribbean:
A Gender Analysis / 1

Coreen Stephens

- 2** Adopting Gender-Sensitive Approaches to Hurricane
Preparedness, Relief, and Recovery Planning in the
Caribbean / 8

Tsahai Thomas

- 3** Perceptions of Risks of Hurricanes among Jamaican Males
and Females? / 15

Shaniquea Ormsby

GENDER IMPACT OF CLIMATE CHANGE ON HEALTH

- 4** Gender Socialization and Malaria Risks in Portmore,
St. Catherine / 22

Sheldon Gray

GENDER IMPACT ON LIVELIHOODS

- 5** The Gendered Effects of Climate Change on Livestock
Farmers in the Caribbean / 30

Joshauna Small

- 6** Rural women and their Vulnerabilities to Climate
Change in Agriculture / 35

Kimberly L. Carr

**GENDER IMPACT OF DISASTERS ON COASTAL
COMMUNITIES**

- 7** Climate Change and Natural Disaster Risk Management
in Coastal Areas: A Gender Perspective / 44

Kevon Kerr

- 8** The Effects of Natural Hazards in the Coastal
Area of Negril / 52

Lisa Jarrett

GENDER IMPACT OF DROUGHTS

- 9** Gender, Water Shortages and Droughts / 60

Tesi Scott

- 10** Gender Impacts of Droughts / 68

Ann-Marie Virgo

Conclusion / 76

Leith Dunn

Preface

This publication is produced jointly by the Friedrich Ebert Stiftung (Jamaica and the Eastern Caribbean) and the Mona Unit of the Institute for Gender and Development Studies (IGDS) at the University of the West Indies (UWI). It represents an important component of the partnership between FES, as an international development partner and the IGDS/UWI, a regional tertiary institution which serves primarily the English-speaking Caribbean.

Partnering with the IGDS to produce this edited collection of student papers is guided by the view that encouraging students to do additional research and write papers early in their student life contributes to the sustainable development of the intellectual tradition of the Caribbean region, in respect of the impact of climate change on people, their livelihoods and survival. It is an edited collection of papers written by students in the course GEND3032: Gender, Climate Change and Disaster Risk Management offered by the Mona Unit of the Institute for Gender and Development Studies Mona in Kingston, and it is hoped that its publication will encourage others to carry out more detailed research and analysis of the issues discussed. As a Small Island Developing State (SIDS), that Jamaica faces an imminent threat from Climate Change is no longer debatable. Increasingly, research confirms this reality. At the global level, this was re-affirmed at the

Conference of Parties (CoP 19) which was held in Poland in November 2013 at which the Assessment Report AR5 of the Intergovernmental Panel on Climate Change (IPCC) restated the findings of its 2012 AR4 Report. This AR4 Report warned that it was very likely that temperature rise will be in excess of two degrees Celsius, possibly reaching three degrees Celsius. Like the Alliance of Small Island States (AOSIS), in 2009, the Caribbean Community had registered its concern that a global temperature rise above 1.5 degrees Celsius would seriously threaten the survival of many of the communities and key economic sectors in these small island states.

What this edited publication of student papers seeks to do, is fill the gaps in understanding which exist, not only among the general student population, but also within the wider civil society and community groups of the seriousness and urgency of this particular development challenge that Jamaica faces. Importantly, the papers use a gender analysis to demonstrate how women, men and their families in both coastal and mountainous areas are likely to be affected by the impacts of climate change on the gendered reality of their lives and livelihoods. This is a small but important step in building capacity and awareness in the academic community and the public at large, about the critical need to mainstream gender in climate change and disaster risk management policies and programmes. It is anticipated that these papers will help to demonstrate some of the direct and practical connections between climate change, the likely threats to human survival, and the many adaptation, mitigation and survival options which can be identified within the framework of established international conventions and agreements.

Judith Wedderburn

Director

Friedrich Ebert Stiftung (Jamaica and the Eastern Caribbean)

December 2013

Introduction

LEITH DUNN

Working Paper 7 is an edited collection of student papers from the course GEND3032: Gender, Climate Change and Disaster Risk Management offered by the UWI's Institute for Gender and Development Studies Mona Unit. This joint publication with the Friedrich Ebert Stiftung Office for Jamaica and the Eastern Caribbean represents another important milestone in our partnership for development.

Caribbean countries as Small Island Developing States (SIDS) are very vulnerable to the effects of climate change. Working Paper 7 therefore seeks to build awareness and coping capacity of young people especially. In so doing, it supports several strategic global, regional, national and institutional commitments to build management capacity and knowledge. It also promotes awareness and action to mainstream gender in climate change and disaster risk management policies and programmes. Justification for mainstreaming gender in disaster risk management is guided by the United Nations Framework Convention on Climate Change; the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) (2007) which noted the gender dimensions and differential impact of climate change. The Caribbean Disaster Emergency Response

Agency's (CDERA), and the Enhanced Caribbean Disaster Management (CDM) Framework encourage implementation of national and regional programmes and the integration of gender in various aspects of disaster management: Vulnerability Assessments, Flood Management, Early Warning Systems, Climate Change Adaptation, Community Disaster Planning, as well as Knowledge Enhancement, and Governance. The Enhanced Framework towards Comprehensive Disaster Management (CDM) states that 'Gender issues have been clearly highlighted in response to and recovery from recent events and should therefore be integrated into each of the four outcomes', which include:

- Outcome 1: Enhanced institutional support for CDM program implementation at national and regional levels;
- Outcome 2: An effective mechanism and programme for management of comprehensive disaster management knowledge has been established;
- Outcome 3: Disaster Risk Management has been mainstreamed at national levels and incorporated into key sectors of national economies (including tourism, health, agriculture and nutrition);
- Outcome 4: Enhanced community resilience in CDERA states and territories to mitigate and respond to the adverse effects of climate change and disasters.

(see Comprehensive Disaster Management Strategy and Programme Framework 2007–2012).

Working Paper 7 also supports the principles of the Memorandum of Understanding (MOU) between the Caribbean Disaster Emergency Response Agency (CDERA) and the UWI signed by Vice Chancellor Nigel Harris in April 2009.

Working Paper 7 is the second publication which shares perspectives and views of young male and female students whose early undergraduate papers are rarely published. Its publication during the

20th anniversary of the IGDS in 2013/2014, reflects a commitment to encouraging graduates to write their stories, and become leaders and change agents. These papers from GEND3032, reflect the knowledge gained which will enable them to assess their own vulnerability to natural hazards. They are hopefully better equipped to take responsibility to mitigate their own risks, and build their coping capacity to manage the challenges of climate change more effectively. As Caribbean youth read these papers, they will hopefully reflect on issues of climate change and disasters and commit to implementation of the Post 2015 Development Agenda which includes adaptation to climate change.

Working Paper 7 identifies new career opportunities for young people with the requisite skills of mainstreaming gender in climate change and disaster risk management. The papers expose the needs and gaps between policy commitments and practices. In response to the current high levels of unemployment among youth, graduates can use their critical analytical skills, identify gaps and explore job opportunities in relevant agencies or as consultants to develop and submit funding proposals, and implement projects to manage climate change and disaster risks, wherever they see a need and as part of a national response.

Themes and Issues

Gender Impact of Hurricanes

The first three papers focus on the gender impact of hurricanes. Coreen Stephens first introduces key concepts and issues of gender and gender mainstreaming in disaster risk management, highlights the relationship between gender roles and natural hazards, and focuses on the gender implications of hurricanes. Tsahai Thomas then examines the need for a gender-sensitive approach in hurricane

preparedness, relief, and recovery planning in the Caribbean Region with reference to the work of several national disaster response organizations. Shaniquea Ormsby, also examines the differential impact of hurricanes on males and females because of their prescribed gender roles.

Gender Impact on Health

In the fourth paper, Sheldon Gray, focuses on gender and health. He provides personal insight of how cultural norms and gender roles affect the different vulnerabilities of men and women in Portmore St Catherine, to malaria from mosquitoes in this suburban community. He recommends gender-sensitive measures to reduce the risk of infections and enhance health.

Gender Impact on Livelihoods

In the fifth paper Joshua Small from her personal experience of living in rural Jamaica, examines the differential risks that male and female livestock farmers face from climate change and disasters which threaten their livelihoods. In the sixth paper Kimberly Carr explains the concept and features of climate change, then analyses how climate change increases the vulnerability of women and the poor to disasters.

Gender Impact on Coastal Communities

In the seventh paper, Kevon Kerr highlights the vulnerability of men, women and children living in coastal areas. He notes the importance of integrating gender in disaster risk management, to address the gender differential needs of each sex group before, during and after a disaster. Lisa Jarrett in the eighth paper then provides personal insights into the vulnerabilities of women and men to natural hazards in the coastal tourist community of Negril.

Gender Impact of Droughts

The last two papers focus on droughts. Tesi Scott in the ninth paper examines the differential impact of water shortages caused by climate change on males and females. She advocates gender mainstreaming in drought-management policies because of gender differences in people's needs and capacity to cope. In paper 10, Ann-Marie Virgo explores the gendered effects of droughts on men and women, and the need to mainstream gender in climate change and disaster risk management policies and programs.

Leith Dunn, PhD
Senior Lecturer/Head, IGDS Mona Unit
Editor
December 2013

GENDER IMPACT OF HURRICANES

1.

Disaster Risk Management and Hurricanes in the Caribbean: A Gender Analysis

COREEN STEPHENS

The Caribbean region is known for its vulnerability to many natural hazards especially hurricanes. It is therefore important that policies and other measures are implemented to reduce the effects of disasters on the lives of individuals. Policies and measures should address the specific needs and vulnerabilities of males and females as natural disasters affect them differently.

This paper explores the importance of a gender-sensitive approach to disaster risk management for hurricanes because of the relationship between gender roles and natural disasters. Disaster risk management refers to 'The systematic management of administrative decisions, organization, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters' (UN-ISDR, 2003). Hurricanes affect all groups in society directly or indirectly, with differential effects on males and females to varying degrees, based on their socio-economic backgrounds. Poor single parent families are

likely to face greater challenges during the hurricane period than wealthy two-parent families, because of the family structure and resources available to the respective households. Many Caribbean countries have a large number of single female headed households. These households are more vulnerable than male headed households because women are expected to carry out traditional prescribed gender roles of caring and providing for the family but have less income. These gender roles continue while they are carrying out tasks at home and in the community when there is a hurricane. Vassell (2009) notes that research conducted in Somerset, Jamaica highlighted the reality that women who had no male partner found it difficult to provide for their children and had to rely on men in the community for help, during periods of natural emergencies. She further states that when there is a hurricane, women have the burden of preparing for and cleaning up after the event, in addition to fulfilling regular prescribed gender roles.

A review of the literature however shows that disasters can change or reinforce gender roles. For example Bradshaw (2004) observes that after hurricane Mitch in Nicaragua, female heads of households were more likely to engage in productive activities in addition to assisting with reconstruction. Women engaging in non-traditional tasks following Hurricane Mitch in Nicaragua were viewed as simply providing assistance to men rather than contributing significantly to rehabilitation (Bradshaw, 2004). Findings reported by Vassell (2009) from the Somerset community in Jamaica, indicate that male and female roles remained traditional during the hurricane preparation process. Women and older children were responsible for collecting water, identifying containers for catching rain water and securing clothes and valuables for relocation, if necessary. Men occupied themselves by securing roofs and animals, cutting branches from trees and gathering available food from fields. Vassell (2009) however noted that men assisted with cooking, caring for children and some aspects of cleaning during the disaster period and assisted with initial

cleanups, although it was ultimately the woman's role to ensure household rehabilitation after the disaster. The same study also reported that some gender roles in this and other emergency situations changed. The disaster, Vassell argues, created a "space for conversation and measures to make changes that result in gender equity in the management of natural hazards" (Vassell, 2009, p.23). This information is important for the creation of gender-sensitive policies and programmes which can change gender role stereotypes in disaster risk management.

The literature shows that disasters have a differential impact on males and females. While women are particularly vulnerable to the effects of natural disasters, there are many ways in which the lives of men are also adversely affected. Vassell (2009), in her assessment of rural Jamaican communities, revealed the effects of the hurricane damage to infrastructure on the lives of rural residents. Male and female farmers and traders, she reported, were both affected as they were forced to pay higher prices to transport their produce from farm to market as roads and bridges were damaged. Although residents had to walk longer distances to secure transportation, the situation Vassell argued was even more risky for women travelling at nights. This limited the activities the women could undertake outside their communities.

Citing the risks for men, Vassell (2009) stated that in areas where farm roads were destroyed, men were exposed to the risks associated with crossing flooded rivers or coping with landslides while attending to their animals (Vassell, 2009). This situation was also detrimental to women, and children travelling to and from school. In cases where farm roads were extremely narrow, men had to transport loads usually carried by donkeys, which posed a threat. The crisis also provided different opportunities. Men earned income from jobs they got to rebuild roads and this is a job mainly done by males. These examples show the vital importance of adopting a gender-sensitive approach to disaster risk management because it enables individuals to look at the

issues affecting men and women and address them separately. They also show the advantages of implementing measures to address the specific needs of males and females and to promote gender equity. Delaney and Shrader (2000) highlight four benefits of adopting a gender sensitive approach: the use of better targeting strategies to ensure persons in need are provided with necessary resources; the provision of accurate services which address the needs of persons directly; the reduction of vulnerability in the event of future disasters and the mitigation of subsequent disasters such as rape and physical violence (Delaney& Shrader, 2000).

The underlying reasons why it is important to adopt gender-sensitive approaches is because gender roles ascribed to men and women affect the way in which they relate to one another and their vulnerability to natural hazards. As discussed before, traditional gender roles state that the responsibility of caring for children is the role of the female. This makes female-headed households particularly vulnerable to natural hazards as it reduces the involvement of women in the formal labour force. Dunn (2009) notes that women experience higher unemployment rates, “lower participation in the paid labour force, higher participation in the informal sector, lower incomes, and gender based violence” and women “are more vulnerable to disaster-related risks” (Dunn, 2009, p. 21). Among the challenges women face during the hurricane season is deciding whether or not to relocate from their home to a shelter, and whether they have available resources to prepare for the disaster. Dunn (2009) also notes the need in these shelters to cater for the needs of pregnant and lactating women, the elderly, persons with disabilities and children; ensuring the safety of family members and reducing the risk of gender-based violence as women and children (girls especially) are particularly vulnerable to sexual exploitation and violence in shelters. The psychological trauma associated with damage caused to one’s property, residing in a shelter for an extended period and losing family members must also be considered (Bradshaw, 2004).

Prescribed gender roles tend to confine women to the domestic sphere limiting their access to productive work outside the home especially in rural areas. There is a need to implement laws to challenge existing gender stereotypes and promote gender equality in farming (Kleysen, 1996). Gender roles also contribute to women's unequal status which makes it more difficult for them to access loans and limits their accessibility to land for farming. Gender roles are however changing. Cultural norms dictate that the male's main role is productive while the female's main role is reproductive. Women's engagement in productive work is often viewed as inferior to that of men, and "ultimately, is neither remunerated, recorded in statistics nor valued by society" (Kleysen, 1996, p.41). Many women also experience difficulties in securing credit for agricultural purposes on the basis that they were unable to provide guarantors and because they need permission from spouses (Kleysen, 1996). These gender-related problems are further compounded after a hurricane as women may find it difficult to access credit for rehabilitation.

Migration is a common consequence of natural disasters including hurricanes and there are gender differences in patterns of migration. More women are migrating which poses a threat to the family structure and also challenges some gender roles. Bradshaw (2004) notes that male breadwinners generally leave their homes and migrate for two main reasons: frustration resulting from the inability to provide for their family as well as finding work to send money home to support their family. Male migration has led to an increase in the number of female headed households exposing some families to further vulnerability. Female migration also makes young children vulnerable as they are usually left with relatives.

Townsend (2004) explores the need for policies and programmes to address the differences between males and females especially as it regards accessing and controlling resources as well as adaptation and mitigation strategies which include gender mainstreaming. Sex-disaggregated data will prove useful in making the process of gender main-

streaming and policy development more effective. Gender analysis of this data supports Jamaica's Gender Sector Plan in Vision 2030 Jamaica. The Plan aims to create an atmosphere which promotes gender equity, and addresses the needs of men and women which can help to reduce poverty. Another relevant policy framework is the Millennium Development Goals (MDGs) which seek to provide better opportunities for men and women (Mazziotti, 2011). MDG #3 promotes gender equality which encourages the incorporation of women's views in the decision making process.

Other frameworks that support the principle of mainstreaming gender in disaster risk management policies and strategies include the UN Convention on the Elimination of all forms of Discrimination against Women (CEDAW) which encourages more women to participate in the decision-making process; the Convention on the Rights of the Child (CRC); the 1994 Programme of Action of the International Conference on Population Development (ICPD); the Kyoto Agreement which focuses on climate change and the Hyogo Agreement which specifically addresses disaster risk management.

Conclusions and Recommendations

Many conventions support gender-sensitive responses to disasters. The effects of hurricanes and other natural disasters may differ based on how gender roles are constructed in a society. As gender roles affect the ways in which men and women cope with and recover from natural hazards, there is a great need for countries to mainstream gender in relevant policies and programmes. This will help to ensure that the specific needs of men and women are addressed. Countries will therefore need to collect and analyse sex disaggregated data to identify gaps. Much more more work is needed to fulfill international commitments, which ensure that the specific needs of men and women related to natural disasters including hurricanes are met.

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2.

Adopting Gender-Sensitive Approaches to Hurricane Preparedness, Relief, and Recovery Planning in the Caribbean

TSAHAI THOMAS

In 2007, Hurricane Dean raged across the Caribbean Sea causing damage to everything in its path. The major effects of its rage were felt in St. Lucia, Guadeloupe, Martinique, Hispaniola, Jamaica and Belize resulting in over 45 people losing their lives, and millions in damage and loss of property (USAID, 2008). For the Caribbean region, hurricanes are an annual threat. In June, Caribbean meteorologists turn their attention to the Atlantic, to see what new terror awaits us. Having recognized this threat, Caribbean governments have realized the need to prepare their countries for the onslaught of these natural enemies. There are several national organizations in the Caribbean that coordinate disaster risk management. Among these is the National Emergency Management Organization (NEMO) in Belize, the Office of Disaster Preparedness and Emergency Management (ODPEM) in Jamaica, and the Department of Emergency Management (DEM) in Barbados. They are part of national networks that coordinate disaster mitigation and risk reduction efforts. While the work of these organizations has been appreciated, they usually do not adopt a gender-sensitive approach to their hurricane preparedness, relief and recovery planning. As a result, important areas of need may be overlooked.

Before we can justify the need for a gender-sensitive approach to hurricane preparedness, relief and recovery planning, there is need to have a working definition of what we mean by 'gender'. Gender is a social construct that not only takes into consideration the sex of a person, (male or female) but also much more. The World Bank (2002) definition refers to gender as the culturally based expectations of the roles and behaviours of males and females which are socially constructed. This is different from the biologically determined aspects of being male and female, the World Bank notes.

What some people fail to accept is that our culturally defined expectations of males and females have a great impact on every aspect of our human experience. This includes how we respond to and are affected by natural hazards which sometimes become disasters. A gender-sensitive approach takes into account the needs, concerns and capacities of women, men and other gender groups in all areas, and at all levels (United Nations Economic and Security Council, 1997 cited in World Bank, 2002).

Another important concept is gender analysis. This is a strategy that makes the concerns and experiences of women as well as men, an integral dimension of the planning, monitoring and evaluation of policies and programmes. This applies to all political, economic and social spheres [including disasters]. Both women and men would benefit equally from policies guided by gender analysis and inequality would not be perpetuated (UNESCO, 1997 cited in Murthy, 2007). In planning their disaster preparedness, relief, recovery and reconstruction programmes, Caribbean governments and policy makers should try to avoid gender discrimination against males and females.

Article 1 of the Convention on the Elimination of All forms of Discrimination against Women (CEDAW) defines discrimination against women as, *any distinction, exclusion or restriction made on the basis of sex which has the effect or purpose of impairing or nullifying the recognition, enjoyment or exercise by women, irrespective of their marital status, on a basis of equality of men and women, of human rights and fun-*

damental freedoms in the political, economic, social, cultural, civil or any other field (CEDAW, 1981). For the purpose of this paper, this definition will also apply to discrimination against men.

The World Health Organization (WHO) (2005) lists several key questions to consider in their article entitled *Gender Considerations in Disaster Assessment*. How can a gender-sensitive approach be applied to hurricane preparedness, relief and recovery planning in the Caribbean region? Are there particular vulnerabilities/difficulties that result from the disaster for women, for children, and for men? One example of a particular vulnerability for young girls (and also more recently for young boys) is the risk of molestation and other forms of sexual violence after a hurricane. Another WHO (2005) publication entitled *Violence and Disasters* explains that there are several concerns immediately after a disaster such as infectious diseases and injuries as well as providing basic needs. They argue that these should however take precedence over monitoring cases of violence. The same WHO (2005) article further states that:

Displaced women and children are often at risk of sexual violence as they try to meet their basic needs. Rape of women and children collecting water and firewood has been reported in refugee camps in Guinea and the United Republic of Tanzania. In areas where human trafficking is widely prevalent, disasters may result in conditions that provide opportunities for traffickers (e.g. large numbers of unaccompanied children) (WHO, 2005, *Violence and Disaster Fact Sheet*).¹

Enarson (2009) show a different side to the story of vulnerabilities in *Women, Gender and Disaster: Men and Masculinity*. They highlight different disaster-related risks for males and females in most parts of the world. 'Front line' or 'first responder' roles she notes tend to be occupied more by men, exposing them to work-related injuries such as

1. See http://www.who.int/violence_injury_prevention/publications/violence/violence_disasters.pdf

hazardous materials' spills and there are firefighter deaths. This is no different in the Caribbean. When a tropical storm watch is issued, cultural norms dictate that Caribbean men should ensure that roofs and windows are battened down, trees are cut and tanks are filled with water. Women would do the emergency shopping and other domestic tasks. All these tasks can be risky, causing injuries even before a storm.

There are many other cases reported which show the vulnerabilities related to gender. In these scenarios with hurricanes, elderly men are more likely than elderly women to become homeless during a storm. Pregnant and nursing mothers and women who are single parents will face different challenges and may have to take on extra roles. Enarson (2009) also notes that a careful, gender-sensitive approach to planning for a hurricane, will help to identify these vulnerabilities and in response, policies and measures can then be put in place to address them more specifically. This approach means that children will not be afraid of going to a shelter or fear being displaced or molested, as extra security measures would have been put in place in temporary shelters. Where possible, shelters will also be organized to ensure that families can stay together.

In addition to questions about gender-related vulnerabilities, the World Health Organization (2005) also asks: What are the implications for relief, rehabilitation and reconstruction efforts (in terms of needs, access to assistance and contribution to community efforts)? The response is that it is important to note that during hazards such as hurricanes, the needs of men and women vary. A simple gender-based need they state, such as a disposal area for sanitary napkins in a shelter can be easily overlooked, but can become a major health problem if ignored. A Pan American Health Organization (PAHO) Fact Sheet on its website entitled *Gender and Natural Disasters*, highlights some of these basic needs which include shelter. Housing, PAHO notes in this undated document, is often destroyed in a disaster. Families are then forced to relocate to shelters which may not have

adequate facilities for simple daily tasks such as cooking. In these situations, there is an increase in women's domestic and economic burdens. These could leave her less free and mobile to look for alternative sources of income. While the Caribbean, in times of natural disasters, usually receives much international aid, there is need to ensure that the components and distribution of aid are planned in ways that are gender-sensitive and that respond to those who are most vulnerable and most at-risk.

Another question asked by the World Health Organization (2005) was: Are women predisposed to have less access to aid/information due to cultural norms affecting mobility in the public, and to illiteracy? The PAHO Fact Sheet mentioned earlier, points out that women have less access to resources such as social networks and influence, transportation, information, skills and literacy in some countries and regions which could increase their vulnerability.

Women in Jamaica are more likely than men to take charge in responding to disaster preparedness messages and to early warnings about a hurricane or flood warning. They are better able to mobilize their households (including men and children) into action. Jamaican men's responses on the other hand, are more likely to reflect cultural norms of ideal (hegemonic) masculinity, and as a result are more likely to wait until the situation gets bad before moving, thinking they can brave the storm. Enarson (2009) explains that gender norms related to men's reduced risk perception and increased tolerance of risk can endanger men and their families. She also notes that when preparedness and evacuation are choices, men may delay and under-prepare or be injured in the clean-up period by overly casual use of power equipment. They may feel invulnerable and may be reluctant to acknowledge that they are dependent and because of this men may be reluctant to ask for assistance. (Enarson, 2009).

Conclusions and Recommendations

These examples highlight the great need for a more gender-sensitive approach in hurricane preparedness, relief and recovery planning. Because of gender roles, our government should design more gender-sensitive advertisements aimed at men as well as at women and take account of these cultural gender differences. With this approach, there is a greater likelihood that each sex will have a better early response to hurricanes and as a result there may be fewer deaths, and casualties, and less destruction. There is also need for more funding because it has been stated that for every US\$1 spent on disaster risk reduction, US\$6 is saved in response and recovery. Disaster planners still have a lot of work to do to improve awareness of gender and hurricane preparedness, relief and recovery planning. Against this background, there is need for careful assessment of all facets to ensure that policies and programmes are done in a gender-sensitive manner. Enarson (2009) sums it up best when she stated that, “. . . gender shapes the social worlds within which natural events occur.” These realities support the view of PAHO (2005), that gender concerns are marginalized if there is only a narrow view of the consequences of disaster which may focus purely on the physical and social realities. Gender should never be ignored.

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3.

Perceptions of Hurricane Risks Among Jamaican Males and Females

SHANIQUEA ORMSBY

Introduction

Jamaica is the largest English-speaking island in the Caribbean. It is located 90 miles south of Cuba and is surrounded by the Caribbean Sea. Jamaica is occasionally affected by hurricanes both directly and indirectly due to its geographical location. It has a history of hurricane-related devastation especially from hurricanes such as Gilbert, Ivan, and Gustav. Hurricanes are not unusual to Jamaicans. Meteorologists and environmental specialists in organizations such as the Office of Disaster Preparedness and Emergency Management (ODPEM) are always alerting and sensitizing citizens about hurricane preparation methods. However, males and females do not always heed and respond to these alerts. Responses vary between the sexes. This paper explores differences in the responses of males and females to hurricanes and the impacts a hurricane has on groups of males and females.

Jamaica and Hurricanes

According to Landsberg (1960) hurricanes are generated at latitudes of 8 to 15 degrees north and south of the Equator. They develop as a

result of the normal release of heat and moisture on the surface of tropical oceans. Hurricanes require a sea surface temperature of at least 27 degrees Celsius to be formed. Although their effects are often devastating to humans, hurricanes help to maintain the atmospheric heat and moisture balance between tropical and non-tropical areas. Landsberg (1960) also notes that without hurricanes, the equatorial oceans would accumulate heat continuously.

The Caribbean and Atlantic are prime locations for hurricanes. This is due to the sea temperature of 29 degrees Celsius that persists during the summer season (Landsberg, 1960). Landsberg also noted that during a hurricane “the surface water warms the air, which rises and then it is blocked by warmer air coming from the easterly winds. The meeting of these two air masses creates an atmospheric inversion, where thunderstorms develop and the inversion may be broken, effectively lowering the atmospheric pressure”.

In recent decades, Jamaica has experienced two major hurricanes. On September 12, 1988 Hurricane Gilbert struck Jamaica as an intense category 3 hurricane and journeyed westward throughout the entire length of the island with heavy rains and boisterous winds, causing floods and destroying lives and possessions. On September 10, 2004 Ivan a category 4 hurricane, lashed Jamaica with less intense destruction yet similar negative effects on the country.

Gender and Hurricanes

Although both men and women are negatively affected by hurricanes due to economic, social and environmental factors, the effects are dependent on an individual’s class, status, gender, physical ability and age. Hurricanes often cause floods, landslides, deaths, damage to properties and loss of possessions such as crops and animals. According to the University of the West Indies Centre for Environment and Development (UWICED) (2002), vulnerability

refers to proneness to damage from external forces. They define economic vulnerability as the risks faced by economies from exogenous shocks to the systems of production, distribution and consumption. On the other hand, they note that environmental vulnerability is concerned with the risks of damage to the country's natural ecosystems, whereas social vulnerability reflects the degree to which societies or socio-economic groups of people are affected by stresses and hazards that negatively impact the social cohesion of a country.

Hurricanes cause most Jamaicans to be socially, environmentally and economically vulnerable. Lindsey, (1994) states that vulnerabilities for males and females vary based on societal norms. Men are viewed as tough and brave protectors of their families and community. During hurricanes, men sometimes play these roles without taking proper precautions. They may move around trying to save lives, crops and other possessions and put their lives at risk. Some men may ignore professional hurricane warnings and updates as the nation is regularly alerted about hurricane threats. During the hurricane season between June 1 and November 30, 84 per cent of all hurricanes occur during August and September (Frank, 1984). Some men often view hurricane alerts as false alarms and fail to prepare for a hurricane.

These actions undoubtedly lead to procrastination and risky behaviours, as preparation often begins when signs of the hurricane intensify, not before. These actions include strapping down roofs and windows in the midst of the hurricane, going to the farm to prepare proper shelter for animals and visiting the field to ensure free flow of water during and after heavy rains (Enarson and Meyreles, 2004). As men are also the ones who ensure that persons are removed from flood prone areas and are taken to designated shelter facilities, they are at risk when persons delay their evacuation. They endanger themselves and those who have to rescue them and take them to shelters in the midst of a hurricane. Delayed actions often cause persons to lose their lives. They endanger the lives of men who have to attempt

to cross blocked roadways and help them swim through rising waters. These actions expose more men to water-borne diseases and infections. The social construction of masculinity also means that after a hurricane, some men may become abusive to their partners due to lack of financial resources or stress, and they may endanger the lives of those persons with whom they live.

However, hurricanes also create job opportunities for males. They are more likely to be construction workers and as a result they are mainly responsible for ensuring that houses within the communities are repaired. Women's main task is ensuring that the houses are cleaned up and the wellbeing of their family and community members are met. Societal norms often view females as soft and somewhat helpless or subservient compared to men (Lindsey, 1994). During and after a hurricane, some single women and children who stay in shelters are sometimes molested and raped. These abuses affect their health as they can become infected and develop diseases. As women have the main responsibility to feed and supply their children's needs, some of them may engage in transactional sex work because they are economically vulnerable due to loss or damage to property in a hurricane or other disaster.

Moser (1993) notes that females' primary roles are productive, reproductive and communal. Women are most effective at mobilizing the community to respond to disasters. However, they are continuously and disproportionately affected by natural disasters unless disaster workers and officials acknowledge their vulnerable status and tailor relief efforts to respond to their needs. (Enarson and Meyreles, 2004). These writers also state that disasters impact on maternal and reproductive health and on women's socio-emotional status, but reproductive health issues are rarely investigated in any region and even more rarely addressed through emergency planning. These writers therefore recommend that emergency planners should develop policies that are gender-sensitive.

Frameworks and Conventions for Gender and Disaster Risk Management

There are international frameworks to promote gender in disaster risk management as well as national programmes. These include the Hyogo Framework for Action, which is part of the United Nations International Strategy for Disaster Risk Reduction (UNISDR). The Hyogo Framework describes and details the work that is required from all different sectors and actors to reduce loss of lives and social, economic and environmental assets when there are natural hazards like hurricanes. Other conventions include the UN Convention on the Elimination of all forms of Discrimination against Women (CEDAW), the Millennium Development Goals and the Belem do Para Convention. The latter focuses on violence against women which includes rape, physical and psychological abuses. These Conventions have been ratified by Jamaica and many other Caribbean countries. If implemented nationally, there is less likelihood of women and children being at risk from disasters.

Conclusions and Recommendations

The issues in this paper support the view of Enarson and Meyreles (2004) that there is need for curriculum transformation projects which unite disaster scholars across disciplines and regions. This would increase gender awareness in adult education and post-secondary programs. Also needed, they argue, is more recruitment and appointment of gender and disaster scholars to national institutions, roundtables and governmental advisory groups and non-governmental agencies, to ensure that policies are more gender sensitive.

Special efforts are more likely to be made to protect males during hurricanes, because the sexual division of labour makes them more at-risk as they are expected to save lives and possessions during a disaster. Special efforts are also more likely to be made for females as

the sexual division of labour and gender norms make women in shelters and even at home more at-risk from sexual and physical abuse during and after disasters.

The course which the Institute for Gender and Development Studies at the University of the West has developed can help to develop skills which graduates can use, when employed, to promote gender-sensitive policies, gender mainstreaming and gender sensitization in disaster and emergency planning organisations. This will help to ensure that the varying needs of both males and females are met more effectively.

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GENDER IMPACT OF CLIMATE CHANGE ON HEALTH

4.

Gender Socialisation and Malaria Risks in Portmore, St. Catherine

SHELDON GRAY

“Disasters do not discriminate, but people do. Existing socio-economic conditions mean that disasters can lead to different outcomes even for demographically similar communities – but inevitably the most vulnerable groups suffer more than others.”

– (United Nations, UNISDR, UNDP and IUCN, 2009)¹

This excerpt taken from the Preface of the United Nations publication entitled ‘Making Disaster Risk Reduction Gender-Sensitive’, explains that in wide scale disastrous events, some groups suffer more than others as a result of their vulnerability to the dangers of the catastrophic event. This essay examines the general and gender-related risks faced by men and women in the Portmore area, to the hazard of mosquitoes and risk of contracting malaria. The paper shows how gender differences in risks are linked to cultural norms and gender

1. See http://www.preventionweb.net/files/9922_MakingDisasterRiskReductionGenderSe.pdf

stereotypes. The paper also recommends gender-sensitive strategies needed to alleviate the risk of malaria infection.

Mosquitoes and Malaria Risks

The Global Health Council, (GHC) Annual Report (2012) notes that malaria is an illness caused by blood-borne protozoan parasites, and is transmitted by several species of mosquitoes in tropical regions around the world. The GHC Report (2012) highlights various ways in which persons can get malaria. Persons, who are bitten by an infected female mosquito (*Anopheles*), may contract the disease and spread it to others. There is also a risk of infection if blood is transferred from one infected person to another. This can occur through blood transfusions or by sharing needles or syringes contaminated with the blood of an infected person. Risks of infection are higher at dusk, the article notes, as the *Anopheles* mosquitoes bite at dusk. They are also attracted to dark colours, exhaled carbon dioxide and human sweat.

Risks of infection vary across demographic groups. The GHC Report (2012) states that the majority of malaria deaths occur among young children. Pregnant women are particularly vulnerable to malaria and infection can result in both maternal and fetal deaths. This is because pregnancy decreases immunity to malaria and increases susceptibility to severe anemia and death (Global Health Council, 2012). They note that early diagnoses and giving prompt treatment to infected persons can reduce the risk of malaria transmission.

Prevention strategies recommended include spraying with insecticides to reduce the breeding of mosquitoes. Adopting other environmental management measures, such as covering wells, filling in ditches, and keeping irrigation channels fast flowing. These strategies all help in the reduction of mosquito breeding sites. GHC also recommends use of mosquito nets and insect repellants to prevent infection.

Malaria Risks in Portmore

The municipality of Portmore has a large growing population, hosts several popular beaches and has the largest mall in Jamaica, the Portmore Mall. Before the major housing developments in Portmore, much of the land in the area was used for cane-fields and the rest was swamp land, which is conducive for the breeding of mosquitoes. It therefore came as no surprise when a report in the Jamaica Gleaner of December 6, 2006, noted that the health authorities had confirmed the first case of malaria in the municipality. This was reportedly detected in the Four West area of Greater Portmore.

The risk of malaria infection in Portmore is also linked to poor sanitation and other problems. Although the Vector Control Unit of the Ministry of Health regularly sprays and fogs communities to kill mosquito larvae, the parasites breed as the large numbers of drains in the community are not regularly cleaned. The risk of infection is also great as some residents leave water containers uncovered and mosquitoes breed in these containers.

Cultural and gender factors also contribute to risks of malaria outbreaks. The causes of the malaria outbreak may explain different forms of vulnerability to the risk of malaria infection. Reports show that pregnant women and children are more susceptible than men to the malaria disease as a result of their weakened immune system.

Jamaica's population is 2.7 million has a male/female ratio that is almost equal. There are 99.8 males per 100 females. Portmore's population is an estimated 184,548 persons with the same ratio of males and females. There are 84 different communities in Portmore and one of these is the "*Port Henderson's Backroad*" which is one of Jamaica's most popular areas for sex work. Unprotected sex exposes males and females to HIV infection. Females are biologically and socially more vulnerable to HIV infection because of gender inequality and gender-based violence. HIV infected persons have a higher risk of contracting malaria as their immune system is weaker.

Access to health facilities is also a factor. There are only two clinics for all eighty-four communities. This means that health facilities would be overburdened if there is an outbreak of malaria. Many Portmore residents would have to seek medical attention from private health institutions which are relatively expensive.

The economic situation is also a factor in managing risks and health status. In Jamaica, fewer women than men are in the labour force (70.2 per cent males and 55.5 per cent females). Females as a group also tend to earn less than males. Unemployment is still higher among women *The Economic and Social Survey of Jamaica* (2011) reported that the total unemployment rate was 12.6 per cent.² The male unemployment rate was 9.3 per cent and female unemployment was 16.7 per cent. The total number of unemployed persons was 158,400 persons: 63,700 males and 94,700 females. (ESSJ 2011 p.21.7). As a result, fewer employed women are likely to have health insurance to cover health costs.

Risks related to Gender roles and Behaviour

While males as a group may earn more than females and would be better able to afford the cost of medical attention, males are often culturally reluctant to seek early medical examination and treatment. This stems from their own understanding of their masculinity, which would be a challenge to reducing the risk of malaria infection. Moynihan, (1998) states that men who view themselves as “highly masculine” tend to underreport their symptoms of illness. Chevannes, (2001) also notes that males do more domestic chores outdoors while females do chores inside. As a result, males may therefore be at greater risk of infection from mosquitoes than females. In addition to household chores, men and boys in Portmore are usually

2. In 2013, the unemployment rates were 17.8% females and 10.3% males.

observed outside their houses, on the street corners, or more popularly on the mini-bridges in many areas of the community. Most of these bridges run across mini-gullies and trenches in which mosquitoes breed, thereby increasing men's vulnerability to infection.

Recreational choices

Football is a major sport played mainly by males (Bailey et al 1997). The Municipality of Portmore is the home of one of the most popular national Premier League Football teams, the Portmore United Football Club. The Portmore community is extremely hot, and most games are played near dusk, when mosquitoes begin to "feed". Males playing football are also at risk of mosquito bites because of the active nature of the sport, which makes the players perspire heavily and breathe out carbon dioxide, which attract mosquitoes.

Occupational choices

In addition to the risks to males from recreational activities such as football played at dusk, some occupations also pose a risk for contracting malaria. For example, fishing is an important livelihood activity for some citizens in Portmore and most of the fishing villages in the area are also the homes of many fishermen and women. This increases the vulnerability of these families. Males do most of the fishing in boats and women are responsible for cleaning and marketing daily fish catches. Their specific work activities may result in more risks for males although both sexes will be at-risk as mosquitoes live in the natural habitats of these aquatic environments where fishing families live.

Conclusions and Recommendations

Rationale for Mainstreaming Gender

The Hyogo Framework for Action 2005–2012 states that gender considerations must be included in disaster risk management policies, programmes plans and decision-making processes which would include risk management, early assessment, early warning, information management, education and training. This shows that gender should be mainstreamed in malaria prevention programmes in Portmore communities.

Gender-sensitive Prevention Strategies

The prevention programmes would take into account gender differences resulting from gender socialization processes which create a gender division of labour in leisure and occupations, for example. Gender-sensitive education and prevention programmes could be targeted at specific groups to highlight their risks. For example, household mosquito repellants and nets could be marketed to women as they play a greater role in purchasing domestic items, because of their role as caretakers in the household. Spray bottles of mosquito repellants could also be made easily available to males playing football in the recreational areas of the Portmore community or women and men in living in fishing communities.

Gender-sensitive public service messages could be developed to educate specific demographic groups. These messages would be guided by research to determine the most effective content and communication medium to reduce specific vulnerability of individuals to the disease. Targets for these messages could include community meetings; notices in the weekly *Portmore Star* newspaper; and radio broadcasts on *Sun City-radio* 104.9 FM, which is Portmore's premier radio channel. The gender sensitive malaria prevention campaign

could target young men and encourage them to start their daily football games at times when there is less risk of mosquito bites. The campaign could also target pregnant women as well as HIV positive persons. The latter have lower immunity and would face very serious health risks if they are infected. They could be encouraged to take extra precautions to help prevent mosquito bites at certain hours of the day or evening. Mainstreaming gender can address gender-related risks and the result is likely to result in more effective malaria prevention strategies and fewer infections.

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5.

The Gendered Effects of Climate Change on Livestock Farmers in the Caribbean

J O S H A U N A S M A L L

This paper examines gender differences in agriculture, and the different effects of natural disasters on livestock owners. It identifies the relevant conventions and policies that support the mainstreaming of gender in disaster planning in agriculture. It explains why it is important to include gender analysis in agricultural planning and preparations for natural disasters because gender roles of male and female farmers are different. The paper concludes by showing the advantages to livestock farming by adopting a gender sensitive perspective on disasters.

Gender refers to the differences in socially constructed roles and opportunities associated with being male or female, and the interactions and social relations between the sexes. Gender determines what is expected, permitted and valued in a woman or a man in a determined context (United Nations Development Programme, 2009).

Gender also affects climate change. The Caribbean region is very vulnerable to hurricanes, volcanic eruptions and earthquakes which generally have disastrous effects on people in rural areas, but also

have differential effects on males and females. Climate change describes a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere. This is in addition to natural climate variability observed over comparable time periods (Albertin & Brathwaite, 2002).

In the Caribbean, natural disasters, poor governance and the lack of gender mainstreaming are among the major challenges to the achievement of development goals and gender equality. As the Caribbean is prone to natural disasters, it is important for governments to introduce policies to support the specific needs of farmers of both sexes.

Gender and Agriculture

Many males and females are employed in agriculture in the Caribbean. Analysis of agricultural data shows that both sexes have traditional roles in planting and producing crops and in rearing livestock. Males dominate in livestock rearing while females dominate in areas such as growing vegetable crops or raising chickens. In many rural areas of the Caribbean, taking care of livestock is an important source of income. Livestock farming provides an alternative source of job creation which is important as unemployment is high. In addition to jobs, rearing livestock also provides food for the country. While some farms are located on the land where the owners live, others are on other properties. Both males and females take care of livestock, but through socialization and gender ideologies which are dominant in society, the gender role for males is to be the protector and the role for females is to be the caregiver. (Moser, 1993). When there is a disaster, the expectation is that if a male is present on the farm, he is responsible to care for and protect the livestock. Some males will stay behind to protect the animals instead of moving to a secure shelter with other family members. The man is expected to be the brave one, and 'man up' to any responsibility.

Post disaster

After a disaster such as a hurricane, there are increased possibilities for flooding, and a pile-up of debris in the household as well as on the farm. Farmers face the possibility of losing livestock and disposing of their remains. After a disaster, both sexes are likely to have worked in recovery efforts which are likely to reflect a gender division of labour. Males would therefore be doing hard manual work outside such as repairing buildings and fences, and taking care of the farm and livestock. Women would be doing work cleaning up in and around the yard, ensuring food is available and caring for family members.

Droughts are another form of disaster that affects farmers, but is a disaster that persons tend to ignore. In this post-disaster situation women and men will both be affected differently. Again, socialization and gender ideologies influence the different gender roles in society, and each gender is expected to act differently. Farmers rearing livestock will need to find feed not only for their family but also for their surviving animals. In a drought, more time and energy would be needed, to meet these responsibilities. This often puts a strain on the male, who is trying to live up to the notions and ideologies of masculinity, associated with being the family provider. Single mothers will also be under more pressure and strain to fulfill their gender roles (Davis, 2008).

As social roles for males and females are different, each sex is likely to use products and services in different ways. It is therefore very important to include gender in any development plan for a country. Both genders need to be respected and included in disaster risk management, as disasters affect them differently.

Importance of Gender analysis in Disaster Planning

Gender analysis is a strategy which recognizes that men and women, because of their gender roles, have different needs and interests and acquire different capacities and knowledge. Recognizing the different

types of needs will help planners to organize programmes that can meet the specific needs of both sexes.

Gender analysis is based on the principle that men and women have equal rights not only in theory, but also in practice. Specific measures will therefore be needed to take account of their respective gender-differentiated conditions, to guide programmes. Actions to establish equitable relations between men and women will also need strategies to transform gender identities and change power inequalities and the unjust relations that result from gender roles and identities. An approach that considers only the situation of women will not bring about this transformation. Gender inequality can be corrected if the rights, responsibilities, and opportunities of women and men are recognized and their interests, needs and priorities are taken into consideration. It is therefore important to recognize the diversity of different groups of women and men (United Nations Development Programme, 2009).

When a gendered approach is incorporated into the analysis of the impacts of climate change, there is more understanding of how the roles and identities of women and men influence different vulnerabilities and capacities to deal with climate change. Gender analysis can help to reduce the vulnerabilities and risks associated with climate change. Integrating a gender approach in the design and implementation of policies, programmes and projects can lead to greater equity (fairness) and equality. Mainstreaming gender can also help to build more capacity to adapt to and mitigate the effects of climate change, while gender analysis can provide a clearer picture of how males and females relate to ecosystems.

Human Rights Principles for Mainstreaming Gender

The principles for mainstreaming gender are based on human rights conventions to promote gender equality. The main one is the CEDAW (Women's Rights) Convention. These principles should guide policies related to climate change and disaster management

developed by agencies such as ODPEM and NEPA in Jamaica, others such as CDERA, UNEP, the IDB, and programmes such as the UNDP's Caribbean Risk Management Initiative (CRMI). Implementing these policies, conventions and programmes would help to improve the situation of livestock owners and farmers in the Caribbean in coping with climate change and natural disasters.

Conclusions and Recommendations

Gender, Climate Change and Livestock Farmers

While all people in the Caribbean are affected by natural disasters, male and female farmers are affected differently because they have different roles and responsibilities as well as differential access to power and resources. Caribbean countries should therefore mainstream gender in climate change and disaster risk management to help livestock farmers and owners, the majority of whom are males. This will help farmers to cope better with the increased threats from droughts, floods caused by heavy rains and hurricanes, earthquakes and other severe climatic problems. Education and training programmes in agriculture therefore need to include a gender focus to ensure more benefits to livestock farmers.

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6.

Rural Women and their Vulnerabilities to Climate Change in Agriculture

KIMBERLY L. CARR

Introduction

Climate change is a scientifically proven phenomenon. It is a change in climate that may be due to its natural variability or may be the result of human activity (UNDP, 2008). It is also a reminder of a sometimes forgotten fact that we are ecologically interdependent. Human activity takes place within ecological systems not bound by political frontiers. This activity will have generally negative impacts on the environment and on people's well-being, if not managed in a sustainable manner. Characteristics and implications of climate change show that it is a multi-dimensional problem whose causes and consequences are clearly related to the present model of development which has led to more inequality and poverty. While the impact of climate change affects people in general ways, these conditions render women and the poor, in particular, more vulnerable to disasters.

According to UNDP, (2008), Climate Change is the defining human development issue of our generation. The 2007 Human Development Report acknowledges that climate change threatens to erode human freedoms and limit choices. The Report further notes that gender inequality intersects with climate risks and vulnerabilities. Poor women have limited access to resources, have restricted

rights, limited mobility and muted voices in shaping decisions. These and other factors make them highly vulnerable to climate change (UNDP, 2008, p. iii). The nature of that vulnerability varies widely. While being cautious against making generalizations, it is important to note that climate change will magnify existing patterns of inequality, including gender inequality.

For example, in the agricultural sector, rural women in developing countries are the primary producers of staple food. This is a sector that is highly exposed to the risks that come with drought and uncertain rainfall. In many countries, climate change means that women and young girls have to walk further to collect water, especially in the dry season. UNDP (2008) reports that women in Sub-Saharan Africa, for example, spend 40 billion hours per year collecting water – equivalent to a year’s worth of labour by the entire workforce in France. UNDP (2008) also notes that women can be expected to contribute much of the unpaid labour that will go into coping with climate risks through soil and water conservation, the building of anti-flood embankments, and increased off-farm employment.

While the UNDP (2008) highlights the vulnerability of poor women to climate change, it also acknowledges that women play an important role in supporting households and communities to mitigate and adapt to climate change. The UNDP publication on Gender and Climate Change (2008) notes that across the developing world, women’s leadership in natural resource management is well recognized. For centuries, women have passed on their skills in water management, forest management and the management of biodiversity, among others. Through these experiences, women have acquired valuable knowledge that will allow them to contribute positively to the identification of appropriate adaptation and mitigation techniques, if only they are given the opportunity.¹

1. See http://www.undp.org/content/undp/en/home/ourwork/environmentandenergy/strategic_themes/climate_change/focus_areas/gender_and_climatechange/

Women and Agriculture

Although rural women and men play complementary roles in guaranteeing food security, women tend to play a greater role in natural resource management and ensuring nutrition (FAO 2003). Women, FAO notes, often grow, process, manage and market food and other natural resources, and are responsible for raising small livestock, managing vegetable gardens and collecting fuel and water (FAO 2003). The report also notes that in Southeast Asia, women provide up to 90 percent of labour for rice cultivation and in Sub-Saharan Africa, they are responsible for 80 percent of food production.

Men, by contrast, are generally responsible for cash cropping and larger livestock. Women's involvement in an agricultural capacity is most common in regions likely to be most adversely affected by the impacts of climate change, particularly in Sub-Saharan Africa and Asia. In these contexts, responsibility for adaptation is likely to fall on their shoulders – including finding alternative ways to feed their family (CIDA, 2002). However, statutory and/or customary laws as noted by FAO (2007) often restrict women's property and land rights and make it difficult for them to access credit and agricultural extension services. These restrictions also reduce their incentives to engage in environmentally sustainable farming practices and make long-term investments in land rehabilitation and soil quality. Despite these obstacles, recent evidence the writers note, demonstrates that women who are already experiencing the effects of weather-related hazards, such as erratic monsoon patterns, flooding and extended periods of drought, are developing effective coping strategies, which include adapting their farming practices (FAO 2007).

Food, Farming and Livelihoods

Poverty, population pressures on a limited land resource base, low economic productivity of the land, labour and capital, extreme

weather events due to climate variability, and low capacity to adapt to the adverse impacts of climate change, make female and children-headed households, the elderly and women the most vulnerable to climate change. In Malawi, it was found that vulnerability is compounded by several factors such as rapid environmental degradation as a result of agricultural expansion to marginal lands and deforestation; inadequate knowledge and skills in the productive use and management of land and natural resources; inadequate access to land and credit; poor health services; and gender inequalities (Environmental Affairs Department (EAD), 2006). Fogelberg (2010) adds that women who have to find or plant food for their families will find these tasks more difficult to perform if climate change decreases rainfall and increases drought in their home area. Changing weather patterns could affect farming activities such as paddy cultivation in Asia, and cash crops such as cotton and tea, the cultivation of which employs many women.

Climate change induced changes to biodiversity and natural systems will also affect women. The loss of pollinators, such as butterflies and bees, could seriously affect the agricultural production of fruit, honey, nuts and flowers, important resources for women in their role as providers of food for the family. The Intergovernmental Panel on Climate Change (IPCC) has taken note of the gender dimensions of climate change. Its Fourth Assessment Report published in 2007, notes that the climate change impacts will differ according to gender. It also notes that most studies of climate change impacts tend to group countries or populations together and ignore differences within groups such as gender. The report further points out that as a group, women have insufficient capacity to adapt to climate change (IPCC, 2007).

Gender Approach

Gender determines what is expected, allowed and valued in a woman or a man in a given context. It determines opportunities, responsibilities and resources, as well as access to power associated with masculinity and femininity. Gender also defines the relationships between and within groups of women and men and girls and boys. These attributes, opportunities and relationships are socially constructed, are learned through socialization processes and are context, time specific, and changeable. Gender does not mean “women.” However, given that women are often in a disadvantaged position in many developing, as well as developed countries, the promotion of gender equality implies an explicit attention to women’s empowerment. This approach tackles two key issues:

- First, it recognizes that men and women, because of their gender, face different situations that oblige them to acquire different capacities and knowledge while also recognizing that they have different needs and interests. If men and women are not only to have equal rights in theory, but also to exercise them in practice, they will need specific measures that take their respective gender-differentiated conditions into account.
- Second, it seeks to establish equitable relations between men and women by transforming unjust relations that result from those identities. An approach that considers only the situation of women will not bring about this transformation. Gender inequality can be corrected if the rights, responsibilities, and opportunities of women and men are recognized and their interests, needs and priorities are taken into consideration – recognizing the diversity of different groups of women and men.

When incorporated in the analysis of climate change, a gendered approach promotes understanding of how the identities of women and men determine different vulnerabilities and capacities to deal

with climate change. Such an approach can also help to attenuate the causes of climate change. Integrating a gendered approach to climate change is also helpful in designing and implementing policies, programmes and projects that lead to greater equity and equality. In particular, integrating gender, can contribute to building more capacity to adapt to and mitigate climate change, as the tools of gender analysis afford a clearer and more complete view of the relations people have built with ecosystems. When incorporated in discussions about development, the gendered approach strives to analyse and understand the different roles and responsibilities of men and women, the extent and quality of their participation in decision-making, and their needs and views.

Conclusions

Based on an analysis of the literature reviewed, the paper demonstrates that climate change does not affect everyone in the same way. Men and women as social groups are affected differently and their responses to the impacts of climate change also differ. This is especially the case when it comes to safeguarding their food security and livelihoods. The literature shows that although women are important food producers and providers, they have limited access to and control of resources. On the other hand, women have a central role in agriculture, and are important agents of social change. In fact, the Report of the FAO on the State of Food and Agriculture 2010–2011 estimates that more than 100 million people could be lifted out of poverty if women had the same access to and control of resources as men. Responses to climate change in agriculture must therefore be gender specific. Initiatives need to ensure that women are consistently included in climate change mitigation and adaptation activities and strategies designed to enhance food security and livelihoods.

Recommendations

These conclusions show that there is need to consistently use gender analysis to understand the different roles and responsibilities of women and men in natural resource use and management, and use this knowledge to guide the types of interventions made to ensure that they are equally relevant to meet the needs of women and men:

- expand programmes to empower women to enable them to acquire, invest in and deploy technologies that contribute to mitigation and adaptation to climate change, as well as to enable them to mobilize resources to become more effective in actions to create change.

Policies

National governments should consistently use the international framework to craft their own climate change policies. Gender should be integrated into existing development strategies, and provide financial resources to ensure the success of programmes. Policies for adaptation, mitigation and disaster risk management with a gender perspective will help to combat poverty and injustice as they will address inequities, build resilience and lower long-term development costs. National Adaptation Programmes of Action (NAPAs), and National Mitigation Plans should be guided by international conventions and agreements such as UN Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) (1979), the programme of action of the Millennium Development Goals (MDGs) (2000), and the International Conference on Population and Development (ICPD), Cairo (1994) among others. Countries that ratify CEDAW, also known as the first international bill of rights for women agree to take action to promote and protect the rights of women, to include the principle of equality in legislation and ensure

that it is operationalized. CEDAW has direct implications for climate change, obliging parties to take all appropriate measures to eliminate discrimination against women in rural areas in order to ensure that they participate in and benefit from rural development and are involved in all levels of development planning. The text of the Convention also provides links to population issues, affirms women's maternal and reproductive rights, and women's rights to equality in power and decision-making; as well as women's rights to equal health care and to participate fully in family, work and public life.

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GENDER IMPACT OF DIASTERS ON COASTAL COMMUNITIES

7.

Climate Change and Natural Disaster Risk Management in Coastal Areas

A Gender Perspective

KEVON KERR

Coastal areas or zones are the boundaries between land and sea, delineated as part of the land affected by its proximity to the sea, and the part of the sea affected by its proximity to land (Marine Biodiversity and Ecosystem Functioning, 2008). In other words, they are areas where the land borders and interacts with the sea. The majority of the world lives in or interacts with coastal zones as they act as transit areas. This is especially true for Caribbean countries, which are mostly islands (bodies of land surrounded by water) surrounded by the Caribbean Sea. Coastal areas are vulnerable to several natural disasters, which include hurricanes, earthquakes, tsunamis and floods. Climate change may be defined as any change in the climate, whether due to its natural variability or as a result of human activity. Human activities such as burning fossil fuels and cutting down forests have resulted in the accumulation of greenhouse gases in the atmosphere and caused global warming. Global warming and

climate change have caused a rise in sea levels because of a melting of the ice caps. This is predicted to cause an increase in the frequency and power of storms and storm surges (U.S. Indian Ocean Tsunami Warning System Program, 2007). This has especially impacted coastal areas and their inhabitants due to their close proximity to the sea. In fact, approximately 300,000 climate change related deaths occurred globally in 2005 and this was projected to increase to 500,000 by the year 2020 (Simpson & Gössling, 2009, p. 2). These deaths were linked to impacts on food production, health, poverty, water availability, human displacement, and security.

Gender refers to the “socially constructed roles and opportunities associated with being a man or a woman and the interactions and social relations between men and women” (United Nations Development Programme, 2009, p. 24). Gender roles are learnt, not biologically determined, and vary widely among different cultures. Generally, gender norms ascribe more access to resources and decision-making authority to men in comparison to women and do not take into consideration the differential needs of males and females. This lack of consideration for the variance in gender needs can have significant negative impacts, especially on the planning before and recovery after a natural disaster. The idea of taking a gendered approach to disaster risk management is particularly important in coastal areas due to their high vulnerability to disasters from rising sea levels. Gender needs to be integrated into disaster risk management, especially for coastal areas, as men, women and children have differential needs before and after disasters.

Coasts offer residency to the highest concentration of people and provide the natural resource base on which a broad range of human activity is dependent. Coastal communities are increasingly at risk from natural coastal hazards such as tsunamis, storms and storm surges, hurricanes, coastal erosion and floods. While tsunamis are typically infrequent, flooding and storms occur more frequently. In fact, floods are the most common environmental hazard, due to the

widespread geographical distribution of river valleys and coastal areas and the attraction of human settlements to these areas (U.S. Indian Ocean Tsunami Warning System Program, 2007). The impact that these disasters have on an area is dependent on their severity and frequency. These impacts can lead to coastal vegetation such as mangrove forests and sea grass beds being destroyed and seawater flowing into freshwater reservoirs. Additionally, these disasters may threaten the lives of persons inhabiting these areas and destroy the means to provide their livelihoods.

Men access and use the coast in different ways from women. Men who live in coastal areas are usually involved in fishing and/or work in the tourism sector as coasts are the usual sites of hotels and shipping ports. The fishing sector is still largely considered a male sector with women playing a role in post-harvest activities such as marketing and processing fish and in productive tasks like maintaining nets (GenderCC – Women for Climate Justice, 2010). Tourism, agriculture and forestry are considered to be some of the most vulnerable economic sectors, as they can be severely affected by extreme events, changing environmental conditions, changes in the world economic situation, or climate policy (Simpson & Gössling, 2009). When natural disasters occur in coastal areas, they can rob men of their livelihoods. For example, if a storm were to occur, fishermen are unable to fish and thus provide food and income for themselves and their families

Men are usually the main “bread-winners” in households where they are present, and as such assume the role of protector and provider. They usually are not involved in disaster preparations and are less cautious than women to venture out after a disaster has occurred. Men’s roles as protectors may place a greater responsibility on them for risk-taking during and after a disaster, both within their households and as volunteers and rescue workers (World Health Organization, 2002).

Due to the differences in access to resources and biological needs,

women may be at more risk in disaster situations than males. For example when there is a disaster such as a flood, it may be women who are the least mobile as they may have children to take care of. If they are pregnant, this further hampers their mobility as they have to think about the safety of both themselves and their unborn child. In fact, overall, women are disproportionately affected by increases in natural disasters and changing climate because of gaps in income, the burden of care, limited political and economic roles, a higher incidence of poverty, unequal access to resources, and the lack of land ownership (Fairholm, 2010). Women also have other specific needs such as sanitary supplies (tampons/sanitary napkins) and the privacy to ensure that they are properly used. (World Health Organization/Gender, Women and Health, 2005)

In Caribbean countries such as Jamaica and Dominica, there are numerous female-headed households and multi-generational families. Female-headed households are poorer, and larger in size than male-headed households. Similarly, female-dominated occupations attract less pay, are less protected by unions and often have worse working conditions than male-dominated ones. (Dunn, 2008). Several women have low incomes and are employed in the informal sector, which does not provide stable earnings and job security. Others are unemployed and completely dependent on the state or their partner for support. Natural disasters affect women in their roles as providers, household managers and care givers by dividing the family and destroying their source of income. For example, the 2010 earthquake in Haiti resulted in the loss of several lives, damage in infrastructure and the separation and destruction of several families. Persons had to be living in informal tent settlements and barely survived on the basic necessities. Flooding, as a result of this earthquake, also caused the spreading of water-borne diseases such as cholera and malaria. Because of the role of women as caregivers, disasters such as this might double or even triple their workload. Women are customarily instrumental in making preparations for a natural disaster and

usually exercise more caution after one has occurred. Because of preparation and caution, women tend to have lower risks of morbidity and mortality after a disaster has occurred (GenderCC – Women for Climate Justice, 2010). Additionally, women tend to perceive disaster threats as more serious and risky than men do and are usually more prepared in the event that one does occur (World Health Organization, 2002).

Children, and to a lesser extent the elderly, have the least access to resources and decision-making authority. This puts them at the highest risk of being affected by disasters. Usually, children are dependent on adults, whether male, female or both, for economic support. During and after a natural disaster, children may get separated from their parents, leaving them with no means of providing for themselves. For example, during a hurricane, flood waters may wash away children from their parents or guardians, leaving them alone to fend for themselves. Some children become orphans as their parents may lose their lives during or after the disaster. This puts the child at risk, if he/she is unable to find himself or herself in the company of a responsible adult. Elderly and disabled persons also have challenges during a disaster as they usually are less mobile and find it more difficult to protect themselves in the event that a disaster occurs.

Because it is evident that gender needs to be integrated into climate change and disaster risk management in the Caribbean, numerous policies and frameworks have been put in place. These include, but are not limited to, the Hyogo Framework for Action and the Caribbean Disaster Emergency Management Agency (CDEMA) – Comprehensive Disaster Management Strategy and Program. The Hyogo Framework was put into place in 2005 and has committed to include “measures for integration of gender perspectives in all disaster risk management policies, plans and decision-making processes, including those related to risk assessment, early warning, information management, education and training” (Fairholm, 2010). The Comprehensive Disaster Management Strategy and Program was

implemented from 2007–2012 with 16 participating Caribbean countries, promoting gender-sensitive approaches to disaster planning. This includes community methodologies for natural and anthropogenic hazard identification and mapping, vulnerability and risk assessments, and recovery and rehabilitation. (Comprehensive Disaster Management Strategy and Program 2007).

The Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) is another governance framework that has been adopted by several countries, including those in the Caribbean, to integrate and mainstream gender in all aspects of life. The convention was adopted by the United Nations General Assembly in 1979 and was the first international treaty that specifically recognized women's human rights. CEDAW establishes that discrimination against women violates the principles of equal rights and respect for human dignity and obstructs them from participating in political, social, economic and cultural life on the same level as men (United Nations Development Programme, 2009). CEDAW can be used as a tool or guide on how to integrate gender into policies, including those on climate change and disaster risk management. Countries that have signed on to CEDAW are committed to promoting and ensuring women's participation in all levels of planning and decision-making.

The Kyoto Protocol is an addition to the United Nations Framework Convention on Climate Change (UNFCCC) in 1997. The main objective of this protocol was to reduce the emission of Greenhouse Gases (GHGs) by 5 per cent between 2008 and 2012 by taking more energetic (and legally binding) measures (United Nations Development Programme, 2009). The Kyoto Protocol is a very important instrument which can be used as a guide as how to mitigate climate change. However, the Kyoto Protocol is not gender-sensitive.

Conclusions and Recommendations

As coastal areas are the most populous areas on the planet and are more vulnerable to certain disasters such as tsunamis and floods due to their close proximity to the sea, there is need for the people in Small Island Developing States (SIDS) in the Caribbean to be more knowledgeable about the impact of climate change and participate in national planning. Countries need to adopt gender sensitive policies and implement programmes to deal with risks faced by both women and men, Women have less access to resources, perform different tasks and have less control over decision-making authority than men do. Because of the socially ascribed differences in gender roles, men are more at risk of death during a natural disaster while women are usually faced with additional burdens such as taking care of the elderly and protecting their children, who are the most vulnerable. Several policies have been put in place because of the demonstrable reality that gender needs to be integrated into climate change and disaster risk management. These policies need to be adhered to, not only to reduce human casualties, but also for the conservation and sustainability of the environment.

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8.

The Effects of Natural Hazards in the Coastal Area of Negril

LISA JARRETT

Disaster risk management and climate change are two pervasive issues that have a major impact on health, livelihood, the environment and human development. Since the UN Conference on the Environment held in Rio de Janeiro, Brazil (1992) environmental issues have become more important globally. Though many people are vulnerable to natural hazards and climate change, the most vulnerable are the poor. Those who live in coastal areas are also more at risk. Climate change and natural disasters have affected individuals both globally and nationally and from these hazardous effects, coastal areas are especially affected. In Jamaica, these include the areas of Negril, Montego Bay and St. Ann where tourism is the main source of economic livelihood for residents. In these situations, gender mainstreaming is significant. In every event that affects the livelihood of individuals, the issue of gender is important.

A coastal area is a portion of the land near to or bordering the coastline. The website of the National Oceanic and Atmospheric Association (NOAA) in (*Spatial Trends in Coastal Socioeconomics*)¹ states that coastal areas are diverse in function and form, are dynamic, and do not lend themselves well to definition by strict spatial boundaries. It also notes that there are no consistent natural

1. See <http://coastalsocioeconomics.noaa.gov/>

boundaries that unambiguously delineate a coastal area. UN/ISDR (2004) states that natural disasters can be defined as the realization of a natural hazard which is a sudden, calamitous event that causes serious disruption of the functioning of a community or society. Further, disasters cause widespread human, material, economic and/or environmental losses which exceed the ability of the affected community or society to cope using its own level of resources.

Negril is a coastal area located on the western end of the island of Jamaica in the parish of Westmoreland. Negril is the “party capital” of the island, a beautiful town with hospitable people who live on seven miles of exquisite white sand beaches. Negril is also well known for its magnificent sunset, lush green environment, superb hotels and a breathtaking coral reef. It was once a little fishing village but is now home to many, provides a livelihood to some, and a paradise to local and international visitors. This tourist destination is slowly facing extinction as the effects of climate change and natural disasters have taken a toll on its natural beauty and threaten the livelihoods of many people.

To address the problem of climate change, it is important to use a gender lens to examine the lives of male and female residents as well as visitors in the Negril area. Gender is a concept that explains the different roles and expectations associated with masculinity and femininity. These gender roles affect the everyday life and livelihood of males and females living in or visiting Negril. Gender mainstreaming is a strategy that allows planners to assess how a policy or programme would impact males and females because of their gender roles. If policy makers and planners in Negril mainstream gender in disaster risk management initiatives, this would help to combat the effects of natural disasters on coastal areas more effectively, and meet the specific needs of both sexes. Internationally and regionally, it is widely recognized that several groups of countries require significant and urgent assistance to adapt to climate change, especially small island states, countries with low-lying coastal areas, and those with areas prone to

natural disasters. The Inter-American Development Bank (IDB) notes that Caribbean coastal nations are particularly vulnerable to the effects of climate change, sea level rise (SLR), and extreme events. This, the IDB notes, was because of many factors – their relative isolation; small land masses; the concentration of their population and infrastructure in coastal areas; their limited economic bases; their high dependency on international tourism and climate-sensitive ecosystems (reefs, beaches, and mangroves), and limited financial, technical, and institutional capacity for adaptation (IDB 2011).

In the Caribbean region tourism accounts for 14.8 per cent of the Gross Domestic Product and 15.5 per cent of employment (IDB 2011). Tourism is the main source of employment in Negril and its beaches are rated among the top ten in the world, but the area is very vulnerable to climate change. UNEP (2010) however warns that Negril's beaches are being reduced because of natural disasters over the years. Hurricanes have affected the livelihoods of Negril's population and the environment, and disasters have damaged sea grasses which are a major source of beach sand in Negril. UNEP reported that the observed rate of maximum beach erosion from 1968–2008, was negatively correlated with the width of coral reef and dense sea grass meadows (UNEP (2010).

In addition to official reports, I can give personal testimony as a resident of Negril about the impact of climate change on the community. Negril as a tourist hub has experienced tremendous devastation from natural hazards: Hurricane Gilbert in 1988, Hurricane Ivan in 2004 and Hurricane Dean in 2007. During these hurricanes, Negril has suffered the wrath of their winds and destructive rainfall, the destruction of property, livelihoods and damage to the area's delicate coral reefs. Although no lives were lost, the loss of livelihoods has been severe. In the aftermath of several hurricanes, Negril has seen a disruption in livelihoods, as its hotels, villas and resorts have been badly affected and the size of the beaches and shoreline have been greatly reduced. Areas which were once wide enough for games and

walkways have been steadily eroded as the water level rises, and the waves move further inland. Erosion is also evident on the cliffs of Negril's West End, where the rising sea level and continuous wave action are eroding the sides of the cliffs, and demolishing buildings, which people depend on for a daily living. The hurricanes have been destroying coral reefs which not only serve as tourist attractions, but are also breeding grounds for fishes and other sea animals. Destruction of the coral reefs also contributes to destruction of land and property as the anchor of the sea bed is also eroded. Hurricanes result in increased wave action, which extends inland and damages small craft shops, hotels and other properties located close to the seashore. This is evident whenever there is a hurricane or heavy rough seas and turbulence. As a resident of Negril, I can confirm that water sometimes comes to my doorstep and building blocks are used to make walkways to avoid falling into the sea.

Gender Impact of Hurricanes in Negril

Using a gender lens to assess the impact of climate change and hurricanes on the coastal community of Negril shows how it affects males and females of different ages, occupations and social and economic groups. There is a major economic impact as coastal erosion from climate change affects the livelihoods of vendors who sell craft and other items on the beach or designated tourist vending areas (craft markets), as well as the livelihoods of fishermen and fisherwomen. As a result of the hurricanes, craft vendors and fishermen and their families are faced with the cost and burden of rebuilding their houses and livelihoods. Fishermen's pots have been destroyed by the hurricanes and this has adversely affected and ruined the main economic livelihood of their families. Fish pots take much time and effort to build and are very expensive as materials increase in line with the rising cost of living. Whenever fishermen do get fish, there is an increased

risk of catching fish that are not fit for eating, as sometimes there is an influx of poisonous fish which invade our waters such as lion fish and barracuda. Fisherwomen who sell the fish have less income.

Children are also deeply affected as families have less income which has a negative impact on children's education. As a result, children are often absent from schools for days and sometimes weeks. This is hard for them as a day without learning is a long time and can be detrimental to their long term development. Climate change therefore affects the rights of children in Negril as outlined in the Convention on the Rights of the Child (CRC). The CRC states that children should not be denied a right to their education.

Climate change also affects persons with disabilities. We also look to the Kingston Declaration on the Rights of Persons with Disabilities (KDRPD) to assess the situation of these persons who are often left alone to battle hazardous conditions, especially those who live in hard to reach communities. Older women and older men with disabilities would face some common as well as different challenges including economic problems.

Women in Negril are also vulnerable to climate change. Many of the women who lose their livelihoods are single mothers who depend on the tourism and other industries for survival. Many women scale the fish which the fishermen catch, and operate small shops, where they not only sell fresh fish, but they prepare the fish with bread and festival for visitors and locals who come to purchase fish. These are small means of making a living and while the income is low, these are honest and creative ways of surviving.

Women also operate most of the craft market shops to provide for their families, and men who produce the craft that the women sell are also affected. For some residents, this is a family business where the women and children operate the stores and the men do the craft work. Climate change deeply affects the survival of many children in Negril, as their parents often give them craft items to walk with on the beach to try and sell, while they the parents operate the shops.

This allows the family to get extra revenue from the process of buying and selling. For many Negril residents, this can only be remembered as a previous activity. The beaches have been so eroded by hurricanes that their livelihoods have been affected. The experiences of Negril residents show that it is important to mainstream gender in efforts to combat natural disasters and manage risks more effectively.

Gender Impact of Floods in Negril

Negril is also vulnerable to floods. The situation is worse when there is a hurricane as it causes increased flooding and as a result more water flows into the rivers and into the sea. Rivers are the breeding ground and nursery for fish and are the habitat for various species of animals. Flooding demolishes the homes of the fish and further affects users of the river, the great morass and the sea. Water becomes contaminated and fish become unhealthy to consume. Germs also spread within the water from users of unsanitary bathrooms (pit toilets) and those who use the river for bathing. These conditions affect many men, women and children. Diseases and viruses which spread from these conditions move into schools, churches, playgrounds, market places and other social areas which then leads to contamination and infections among children and the population at large. Poor health and sanitation then places a burden on health clinics and other private medical facilities which have to treat the affected persons. Women and men are also affected differently by these unhealthy conditions as women are the main caregivers for their families and are responsible for the health of their families.

Analysis of these problems from a gender perspective highlight the need for regional and national organizations like the Office of Disaster Preparedness and Emergency Management (ODPEM), and the Caribbean Disaster Emergency Risk Agency (CDERA) to mainstream gender in their responses to better address emergencies and

further eliminate specific health risks that male and female residents of various ages face.

Gender Impact of Fire on Negril

Fire is another natural disaster that affects the community of Negril. There is often fire burning in the morass. Natural flintstones (igneous rocks) cause the morass to burn for long periods, even for days. This area located on the other side of the coast is not a major tourist attraction, except for those touring the Great Morass or cruising on the Negril South River. This area is the home of most Negril residents and hotel staff as the coast and beach side are both used for tourist attractions and large businesses. Whenever these fires start, they spread for miles on the Great Morass as the dry bushes and other greenery adds fuel to the flames. This causes disruptions in daily operations of people living in the area. If fires spread uncontrollably which occurs where water trucks are inaccessible, both tourists and residents have to stay indoors. Other activities also have to come to an abrupt end because of the smoke. These hazardous fires emit gases which are not healthy for human consumption and people often become ill, especially those who suffer from sinusitis. Morass fires also leave persons who are squatters on the banks of the great morass homeless. Their housing structures are made mainly from board, ply and thatch and are easily destroyed. Information is not readily available on the number of men and women who live on the morass, but the impact of these fires will also affect them differently because of their gender roles and economic status.

Conclusions and Recommendations

This paper shows the common and different ways in which males and females of different ages and backgrounds in the coastal commu-

nity of Negril are affected by coastal erosion and other effects of climate change. Though Negril is not affected by large climatic changes, the destruction it faces from regular natural and manmade disasters are just as shattering to the livelihoods of residents and visitors. Finding solutions to these problems must include greater consideration of gender in building awareness of the existing problems, in developing more effective education strategies to address the vulnerabilities of residents to these natural disasters, and to reduce their risks in the aftermath of hurricanes and floods, for example.

Negril's experiences also show a greater need for partnership with global and national organizations as well as the private sector to increase funding to help Negril residents prepare for and support recovery from these natural disasters. To minimize and alleviate these problems, gender mainstreaming has to be included in every organization's priorities. This will help to fight against gender inequality that is experienced before, during, and after these disasters and throughout one's lifetime. Because women, men, children, the poor and the elderly are affected differently by these disasters because of their gender, there is need for gender to be mainstreamed in disaster management programmes. This would help residents of Negril and other coastal areas who are increasingly impacted by climate change and natural disasters to cope more effectively.

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9.

Gender, Water Shortages and Droughts

TESI SCOTT

“Climate change” refers to more than just a change in the weather. It refers to seasonal changes over a long period of time. Climate change affects everyone, consequently disaster risk management is extremely important to all countries of the world. As climate change affects many people worldwide, the worst hit would be hundreds of millions of small-scale farmers, fisher folk and forest-dependent people who are already likely to be poor and vulnerable. The vulnerable are also impacted because of the effect of climate change on land, water, biodiversity and the price of food and supplies. Addressing the threat of climate change is a current global priority. According to Davis, Oswald, and Mitchell (2009) there is growing evidence that climate change is increasing the frequency and intensity of climate-related hazards.

Levels and patterns of inter-related risks are exacerbating levels of vulnerability for poor and excluded people (Davis et al., 2009). Mr. Ronald Jackson, (former) Director General of the Office of Disaster Preparedness and Emergency Management (ODPEM) asserts that

“Jamaica, because of its location, geology and geography is prone to several natural hazards. The major threats include landslides, hurricanes, floods, droughts and earthquakes. These hazards when combined with situations of high vulnerability, usually result in disasters of varying severity” (Senior and Dunn, 2009). A large number of poor rural people rely on subsistence agriculture which means that the impact of climate shocks is likely to have negative implications for their livelihood.

Climate change also has implications for the urban poor. Many informal settlements (squatting) are built illegally and without formal planning. Davis et al. (2009) also state that limited availability of water, high child and infant mortality rates and a very high disease burden (malaria, tuberculosis and diarrhea for example) are common characteristics for such informal settlements.

Jamaica, in this period of climate change, faces the potential crisis of water shortages and drought in coming years. These crises are said to affect every aspect of people’s life – domestic life, the educational system, business enterprises, the environment, and of course, the farming sector. In Jamaica, disasters have been occurring more frequently in recent years. Disaster risk management can help reduce the impact, through risk assessment and reduction measures, early warning systems and improved preparedness. In looking at climate change and disaster risk management, it is important to know that there are gender perspectives that must be considered.

A report by the Commission on the Status of Women (2008) entitled, ‘Gender Perspectives on Climate Change’, stated that adaptation efforts should systematically and effectively address gender-specific impacts of climate change in the areas of energy, water, food security, agriculture and fisheries, biodiversity and ecosystem services, health, industry, human settlements, disaster management, and conflict and security (CSW, 2008). Women in general make up a large number of the vulnerable in communities that are highly dependent on local natural resources to survive. UN reports state that globally, women

are just over half of the population, however, they represent seventy percent of persons living below the poverty line. This therefore makes women as a group, more vulnerable to the impacts of climate change.

Gender is therefore an important issue to consider when dealing with climate change and considering how people are affected. Gender must also be considered with other factors such as age, disability, ethnicity, geographical location and livelihood, when assessing vulnerability.

Water shortages are increasingly important as water is a basic commodity for any human being's survival. However, many poor people do not have access to water. Lack of adequate water supplies to grow food also results in many countries having to import more than half the food to meet their needs. The lack of water in many communities all over the world contributes to large scale problems of hunger, disease and increased poverty.

A review of literature shows the importance of gender analysis of water. Males and females of different ages have distinct roles in water use and management, because of their different needs and priorities. In many communities women and children are responsible for collecting water for the household. Increased drought resulting from climate change, means that women (and girls especially) in rural communities, will have to spend more time collecting water. In urban communities, women and girls may also spend hours queuing for water. Children are also affected by water shortages and droughts as they are at the highest health risk from inadequate water supplies during drought, and also from predicted changes in vector-borne diseases. They are also at the highest risk of malnutrition, with long term implications for overall development. (Davis et al., 2009)

Hartl and Wahaj (2007) examine how gender affects women's and men's access to water in rural areas. They note that inequality between the roles of males and females results in unequal access to resources and in many contexts women are disproportionately affected. They also assert that women manage water resources not

only for productive uses (agriculture for example), but also for domestic purposes. In addition, these writers note that although women are mainly responsible for sanitation and hygiene to promote good health, they often play an active role in the construction, preventive maintenance and repair of sanitation facilities. These roles in relation to water foster cohesion, and collecting water provide women with the opportunity to communicate and bond with each other outside the house. However, it also exposes them to threats of violence and to health hazards. Hartl and Wahaj (2007) also noted that women's limited access to water may also be linked to their limited access to land as the two are often connected.

In Jamaica, there were several media reports in 2010, that agriculture had been particularly badly affected by water shortages and drought. For example, Jessop, (2010) in an article in the *Jamaica Gleaner* entitled 'Water Shortage at Unprecedented levels 2010' stated that both male and female farmers reported that their crops were wilting. He also reported the President of the Jamaica Agricultural Society, Glendon Harris saying that farmers who want to plant vegetables could not do so unless their farm was located near to swampy areas. Jessop linked these problems to climate change, noting that because of the change in climate, the Caribbean is experiencing prolonged drought. Caribbean officials he noted, had linked droughts to the weather phenomenon, El Niño caused by climate change as well as to a poorly maintained and funded water distribution networks. Jessop (2010) further stated that water would be limited to a few hours each day for those receiving it on a regular basis.

The shortage of water increases pressure on women and girls because they are mainly responsible for water collection for some agricultural production and domestic purposes. If water supplies become scarce or contaminated, women and girls are the ones who are expected to look for alternative sources, while providing care for family members if they become ill from water borne and other infectious diseases.

The water shortage and drought crisis requires all individuals to work creatively to help solve the problem. However, as the roles of males and females are different, it is important to incorporate a gender perspective in all climate change and water policies and initiatives to overcome the various challenges. Davis et al (2007) suggest three (3) adaptation strategies that would make individuals, communities and societies more resilient and less vulnerable to shocks and stresses of climate change. These are social protection initiatives which protect the vulnerable against livelihood risks, and enhance the social status and rights of the marginalized. The adaptation strategies are 1) basing recovery programs and allocation of resources on the assessment of women's and men's roles, responsibilities and access to resources, in order to understand the extent of losses and costs to both women and men and their potential for recovery; 2) giving adequate focus and resources to the needs and priorities of each sex for shelter, water, energy, food supply, with particular attention to those tasks which are the responsibility of women and girls; and 3) finding ways and means to ensure the full involvement of women as well as men in the process. (cited in Senior and Dunn, 2009).

In response to the differential impact of water shortages and drought on males and females, government agencies such as the National Water Commission (NWC) and the National Housing Trust (NHT), need to plan and manage resources from a gender perspective. This implies aggressive gender sensitive public education campaigns targeting both males and females, but specifically women who are the most vulnerable and burdened during water shortages and drought because of their gender roles. Education programmes for women would let them know the dangers and provide them with guidance on how they should prepare their families to combat typical vector-borne diseases, and adopt good practices that will eliminate risks.

Although some women experience gender inequalities, women are also agents of change. The United Nations Population Fund (UNFPA) and Women's Environment and Development Organization (WEDO)

(2009) both state that women's leadership is important to address climate change and inform policy. This is one way to ensure that a gender perspective is included because without this, climate policies could fail to be effective (UNFPA and WEDO, 2009).

Several international human rights commitments support a gender perspective in national climate change and disaster risk management policies. Women's rights are included or implied in the United Nations Charter of Human Rights (1945), the UN Convention on the Elimination of all forms of Discrimination against Women (CEDAW 1979), the Convention on the Rights of the Child (CRC, 1989), the Convention of Belem do Para on the Prevention, Punishment and Eradication of Violence Against Women (1994), and the Programme of Action of the International Conference on Population Development (ICPD) (1994).

Other commitments to include gender perspectives in climate change and disaster risk management were made at the Rio Earth Summit in 1992; at the Millennium Summit in 2000 and in the eight Millennium Development Goals (MDGs) which include Poverty Reduction, Education, Gender Equality and Empowerment of Women, Reducing Child Mortality, Reducing Maternal Mortality, Reducing HIV and other Diseases, Sustainable Development and Partnerships for Development. Other similar global commitments include the World Summit on Sustainable Development (WSSD), Johannesburg 2002; the Hyogo Framework for Action (HFA) on Disaster Risk Management in 2005 (a ten-year plan to make the world safer from natural hazards), the United Nations Framework on Climate Change and the follow-up Kyoto Agreement on Climate Change.

The 2005 Action Plan of the Caribbean Disaster Emergency Response Agency (CDERA) includes a commitment to mainstream gender in disaster risk reduction. Jamaica also has legislation and policies to promote equal opportunities for men and women and international policy statements on gender and disasters in relation to

the International Strategy for Disaster Reduction (ISDR), (see Senior and Dunn, 2009). The National Policy on Gender Equality (NPGE) and Vision 2030 Jamaica are both important commitments to addressing climate change and disaster risk management. There is also a need for sex-disaggregated data to aid in gender-responsive climate adaptation policies.

Conclusions and Recommendations

Natural hazards such as droughts sometimes cause disasters because of water shortages. The inability of people to adequately prepare for them can gravely affect the lives of men and women, and can have a profoundly negative impact on the country as well as the development of its people. As males and females are affected differently by climate change because of their unequal social, economic and political situation, policies to reduce vulnerabilities and risks associated with droughts must consider gender to meet the various challenges. This means integrating gender in management of water resources.

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10.

Gender Impacts of Droughts

ANN-MARIE VIRGO

This paper seeks to explore the gendered effects of droughts on men and women and the need to mainstream gender in climate change and disaster risk management policies and programs. The impact of droughts on rural women is also highlighted.

The earth's climate changes constantly with varying extremes of temperature, rainfall and air movement occurring naturally. Droughts happen as a result of these climatic changes. Climate change is defined by the United Nations Framework Convention on Climate Change (1992) as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods" (UNFCCC, 1992).

A review of literature on climate change shows that drought is an insidious hazard of nature. It is often referred to as a "creeping phenomenon" and its impacts vary from region to region. Drought is the result of a deficiency in precipitation over an extended period of time, usually a season or more, and if rain does occur, it usually is not enough for the ground to absorb before it evaporates. Such moisture deficiency has serious adverse effects on a community usually by reducing food production and/or surface water supplies. Drought therefore, can be highly destructive and it is now thought that climate change is fuelling a rise in the intensity and frequency of

droughts around the world. Plants produce food. Like plants, animals need water to survive, so if there is not enough water they will eventually die from thirst and dehydration. This resulting water shortage threatens livelihoods and food security.

According to the Meteorological Service of Jamaica website, the different types of drought need to be distinguished in order to understand causes and effects on men and women. The types of drought are:

- a) *Meteorological drought* which is defined on the basis of the degree of dryness; a period of well-below average or normal precipitation (rainfall) over a few months or a few years;
- b) *Agricultural drought* which occurs when there is not enough soil moisture to meet the demands for crops to initiate and sustain plant growth;
- c) *Hydrological drought* which refers to deficiencies in surface and subsurface water supplies, based on measurements of stream flow and lake, reservoir and groundwater levels. When precipitation is reduced or deficient during an extended period of time, this shortage will be reflected in declining surface and subsurface water levels;
- d) *Socioeconomic drought* which occurs when physical water shortage starts to affect people, individually and collectively and also has severe effects on the supply and demand of products. (Meteorological Service of Jamaica)¹. The Meteorological Service of Jamaica notes that drought has physical impacts as well as social, environmental, and economical impacts on people's standard of living. Drought reduces access to water which is integral to the production of goods and some services. Some direct impacts of drought reported are reduced crop and forest productivity; reduced water levels; increased fire hazard; increased

1. See <http://www.metservice.gov.jm/index.asp>

livestock and wildlife death rates; and damage to wildlife and fish habitats. Reports note that a reduction in crop productivity usually results in less income for farmers, increased prices for food, and higher unemployment and migration. Drought is also associated with increases in insect infestations, plant disease, and wind erosion, and may cause problems with insects, diseases in forests and more forest fires. These fires impact wildlife habitats as well as air and water quality. The social impact of droughts include health, public safety, conflicts between water users, and reduced quality of life. During droughts many people migrate to areas outside the drought affected location. When this happens, the area loses a great deal of its population, and thus the area has less financial support.

An undated PAHO Fact sheet on Gender and Natural Disasters notes that “Human beings have been at the mercy of natural disasters since the beginning of time. Floods, fires, earthquakes and tremors, mudslides, volcanic eruptions, hurricanes, tornadoes, tsunami, tropical storms, ice storms, landslides, droughts and famine consistently remind us of how vulnerable we are”. Enarson (2000) states that gender shapes the social world within which natural events occur. Women, she notes, are made more vulnerable to disasters through their socially constructed feminine role which is a set of attributes, behaviors, and roles generally associated with girls and women, that normally reflect them as being nurturers, care-givers, gentle and submissive. Enarson (2002) further notes that women make up a large number of the poor in communities that are highly dependent on local natural resources for their livelihoods and are disproportionately vulnerable to and affected by climate change. Women’s limited access to resources and decision-making processes increases their vulnerability to climate change.

Impact of Droughts on Rural Women

Enarson (2000) provides information on the impact of droughts on rural women. She notes that women in rural areas in developing countries have the major responsibility for household water supply and energy for cooking and heating, as well as for food security. They are negatively affected by drought, uncertain rainfall and deforestation. Women also have less access to resources than men, social networks and influence, transportation, information, skills, control over land and other economic resources, personal mobility, secure housing and employment, freedom from violence and control over decision making. These she states, are essential in disaster preparedness, mitigation and rehabilitation. She then draws attention to the fact that women and men are both victims of the gendered division of labour. Men are overrepresented in the agriculture industry, while more women are self-employed in the informal economy, in underpaid jobs with little security and no benefits such as healthcare or union representation. The informal and agricultural sectors she states, are usually the ones most impacted by natural disasters, thus women become over-represented among the unemployed following a disaster. Because women are primarily responsible for domestic duties such as childcare and care for the elderly or disabled, they do not have the liberty of migrating to look for work following a disaster. Men, Enarson (2000) notes, often do migrate, leaving behind very high numbers of female-headed households. She argues that the failure to recognize this reality and women's double burden of productive and reproductive labour means that women's visibility in society remains low, and attention to their needs is woefully inadequate. Disasters themselves can serve to increase women's vulnerability. Aside from the increase in female-headed households and the fact that the majority of shelter residents are women, levels of domestic and sexual violence are increased following disasters (Enarson 2000).

Impact of Droughts on Men

When drought occurs, men are also vulnerable. In the rural communities, men's roles typically focus on earning cash by growing food, trading, or selling their labour. Men's gender roles are prescribed strictly from the notions of masculinity. According to Lewis (2006), masculinity is simultaneously a set of social practices or behaviors, and an ideological position by which men become conscious of themselves as gendered subjects. Masculinity is therefore an ontological process of becoming aware of societal roles and expectations that are inscribed on the text of the body. Men are not born with this awareness of themselves. Society must impose this understanding on them, as it does in similar and different ways for women. Lindsey (1997) states that men are given masculine gender roles, which they are expected to live up to. The male is expected to be the sturdy oak, to be tough, confident, and self-reliant. Chevannes (2001) also asserts that in the Caribbean, "man's primary role is to be a provider"; he is expected to provide for his family, ensure security, and comfort. Chevannes (2001) further notes that taking responsibility is what makes him a man, but when a man cannot provide for his family, he is not a man.

A review of the literature also shows that masculinity puts men at risk in times of drought, because they are expected to be brave and to be providers. Drought affects farming, which is normally male dominated and a man may feel less of a man because he is faced with water shortages, which impede crop growth and his ability to provide food and income for his family. Male out-migration may be used as an alternative survival strategy. Men may be faced with health problems because of reduced drinking water availability, and poor nutrition because of food insecurity due to reduced agricultural production in some regions. There may also be increased cases of heat stress and respiratory illnesses.

Policies and Frameworks to Mainstream Gender in Climate Change

Among the policy frameworks to support the mainstreaming of gender in Climate Change and Disaster Risk Management are Vision 2030 Jamaica, the country's National Development Plan; and outcomes of the United Nations Conference on Environment and Development (UNCED), the United Nations Framework Convention on Climate Change (UNFCCC), the Millennium Development Goals (MDGs), International Conference on Population and Development (ICPD), the Commonwealth Plan of Action for Gender Equality 2005–2015 and Convention on the Elimination of All Forms of Discrimination against Women (CEDAW).

Action plans from these agreements help to protect the environment and encourage responses to disasters that are based on human rights and are gender sensitive. These approaches recognize that the playing field for women and men is not equal, that they have different needs and that power structures are unequal. These differences should therefore be identified and addressed in a manner that rectifies imbalance fairly between the sexes. This is known as gender equity. Gender equity recognizes that different approaches may be required to produce equality of results for all human beings based on gender-related aptitudes, abilities and interests. Pincha (2008) states that mainstreaming gender in disaster preparedness and responses involve viewing and analyzing situations from a gender perspective and making gender inequities explicit. Pincha (2008) therefore states that to build gender-sensitive strategies and initiatives in disaster management process, it is necessary to address both the practical gender and strategic gender needs of women and men.

The 52nd Session of the Commission on the Status of Women (2008), in examining gender perspectives on climate change, stated that there are important gender perspectives in all aspects of climate change. The CSW report highlighted gender inequalities in access to

resources, including credit, extension services, information and technology, and stated that these factors must be taken into account in developing mitigation programmes. Adaptation efforts should also systematically and effectively address gender-specific impacts of climate change in the areas of energy, water, food security, agriculture and fisheries, biodiversity and ecosystem services, health, industry, human settlements, disaster management, and conflict and security (CSW 2008).

Conclusions and Recommendations

This paper showed that droughts are part of the impact of climate change and that males and females are affected differently. Although both sexes are affected by droughts, women face more adverse effects than men because of their caregiving role. Patriarchy, a system of male domination, however, allows men to hold the decision making power and women are usually underrepresented in the decision-making process on environmental governance and planning.

Mainstreaming gender in climate change policies is recommended to reduce the differential impact of droughts on men and women. Gender mainstreaming can help to address the unequal representation of women in decision-making on environmental policies and planning. This will help to ensure that both sexes are adequately represented in decision-making structures, and will allow both sexes to contribute their unique and valuable knowledge, experiences, perspectives and expertise to solving problems associated with climate change, including droughts. Gender mainstreaming provides an opportunity to ensure that both women's and men's interests and needs are identified and addressed.

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Conclusion

These papers represent increased awareness of young students to the issues of climate change. The hope is that as a result of their participation in GEND3032: Gender Climate Change and Disaster Risks Management, and by writing these papers, their knowledge has been increased. It is further hoped that they will be more committed as Caribbean nationals to becoming active agents of change in not only promoting the mainstreaming of gender in relevant policies and programmes, but will also reflect on their individual risks and promote green economic development and gender-sensitive and climate-sensitive solutions to emerging problems.

As the Institute for Gender and Development Studies celebrates its 20th anniversary, the IGDS Mona Unit is pleased to contribute this working paper as part of the Institute's legacy. It will hopefully encourage future research, analysis and reflection to promote environmental sustainability.