November 2021

Integrating disaster risk reduction into development planning in Egypt. case study: the impact of avian influenza crisis on traditional poultry keepers' livelihoods in Fayoum

Shahdan Arram
The American University in Cairo AUC

THE AMERICAN UNIVERSITY IN CAIRO

SCHOOL OF HUMNAITITIES AND SOCIAL SCIENCES

DEPARTMENT OF POLITICAL SCIENCE

INTEGRATING DISASTER RISK REDUCTION INTO DEVELOPMENT PLANNING IN EGYPT. CASE STUDY: THE IMPACT OF AVIAN INFLUENZA CRISIS ON TRADITIONAL POULTRY KEEPERS' LIVELIHOODS IN FAYOUM

SHAHDAN ARRAM

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN POLITICAL SCIENCE

MAY/2009

THE AMERICAN UNIVERSITY IN CAIRO

INTEGRATING DISASTER RISK REDUCTION INTO DEVELOPMENT PLANNING IN EGYPT. CASE STUDY: THE IMPACT OF AVIAN INFLUENZA CRISIS ON TRADITIONAL POLUTRY KEEPERS' LIVELIHOODS IN FAYOUM

A THESIS SUBMITTED BY
SHAHDAN ARRAM

TO THE DEPARTMENT OF POLITICAL SCIENCE
MAY/2009

IN PARTIAL FULFILLMENT OF THE REQUIRMENTS
OF THE DEGREE OF MASTER OF ARTS

HAS BEEN APPROVED BY

Dr. Mariz Tadros

Thesis Committee Advisor----------

Affiliation----------

Dr. Ibrahim El Nur

Thesis Committee Reader----------

Affiliation----------

Dr. Nadia Farah

Thesis Committee Reader----------

Affiliation----------

---------- ---------- ---------- ----------

Department Chair Date Dean of HUSS Date

To my Son, Mohamed

This study is dedicated to you… I hope one day you will be proud of my work

To my Husband, Hussein

Thank you for your patience… Without your support I would not have made it

To my Mum and Dad, Hala and Gamal

You always give me everything … Maybe it's time to dedicate to you at least one thing

To my Country, Egypt

Hope one day Egyptians will be resilient to the impacts of disasters…

ACKNOWLEDGMENTS

I am extremely grateful for the amount of help and support I received for the completion of the thesis. This study is the result of the assistance of many people and I would like to sincerely thank all them for having contributed their time, advice, patience, expertise and kindness. I would first like to thank Dr. Mariz Tadros for being my mentor and providing me with extensive guidance and support along the entire journey. Without your encouragement and optimistic words, I would not have formulated this study on time. I would also like to express gratitude to Mrs. Rania Hedaya, Programme Analyst at UNDP Cairo Office, who provided me with all the necessary contacts for my field work and assisted me gather the required primary information for this study. I would also like to extend my thanks to Mr. Mohamed Ashraf, Project Coordinator at CRS Egypt for his willingness to share his knowledge and field expertise with me. I could not forget the kindness and hospitality of BEST staff in Fayoum, especially Mrs. Manal Ibrahim for putting me in contact with several pioneer women in Fayoum. Last but not least, special gratitude to the women in Fayoum who welcomed me in their lives and shared with me their unique experiences. Without your participation, the case study would not have been possible. Thank you all for making my fieldwork an enjoyable experience.

CONTENTS

Chapter **Page**

Chapter **Page**

ILLUSTRATIONS

Figure **Page**

Table

Box

ABBREVIATIONS

AHI	Avian and Human Influenza
BEST	Business Enterprise Support Tools Foundation
BDS	Business Development Services
CDA	The Civil Defense Administration
CDAs	Community Development Associations
CMDR	Crisis and Disaster Management Department
CPA	The Civil Protection Authority
CRED	Centre for Research on the Epidemiology of Disasters
CRS	Catholic Relief Services
DFID	UK Department for International Development
DRI	Disaster Risk Index
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
EEAA	Egyptian Environmental affairs Agency
EM-DAT	Emergency Events Database
FAO	Food and Agriculture Organization
GoE	Government of Egypt
HCA	Human Capability Approach
HDI	Human Development Index
HDRs	Human Development Reports
HFA	Hyogo Framework of Action
HPAI	Highly Pathogenic Avian Influenza
IDNDR	The International Decade for Natural Disaster Reduction
IDSC	Information Decision Support Center
IFRC	International Federation of Red Cross and Red Crescent Societies
IPPP	The Integrated Project for Poultry Production
MDGs	Millennium Development Goals
MoH	Ministry of Health
MoLD	Ministry of State of Local Development
MWRI	Ministry of Water Resources and Irrigation
NCCDM	National Committee for Crisis and Disaster Management
PAR	Pressure and Release Model
SLA	Sustainable Livelihoods Approach
SMCDM	Supreme Ministerial Committee for Crisis and Disaster Management
UNDP	United Nations Development Framework
UNICEF	United Nations Children's Fund
UN/ISDR	United Nations International Strategy for Disaster Reduction
UN/OCHA	United Nations Office for the Coordination of Humanitarian Affairs
WCDR	World Conference on Disaster Reduction
WHO	World Health Organization

GLOSARRY

Avian Influenza: Influenza A caused by strains of a subtype H5N1 that have produced epidemics in domestic birds with periodic associated human infections, commonly known as bird flu.

Capacity: The combination of all the strengths and resources available within a community, society or organization that can reduce the level of risk, or the effects of a disaster[1]. Capacity and vulnerability can usefully be considered as part of the same continuum, since one increase as the other decreases.

Hazard: "A potentially damaging physical event, phenomenon, human activity or condition that may cause the loss of life or injury, property damage, loss of livelihoods and services, social and economic disruption or environmental damage."[2]

Sustainable Livelihoods: "A livelihood comprises the capabilities, assets and activities required for a means of living. A livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation."[3]

Mitigation: "The lessening or limitation of the adverse impacts of hazards and related disasters."[4]

Poverty: "Poverty is a human condition characterized by the sustained or chronic deprivation of the resources, capabilities, choices, security and power necessary for the enjoyment of an adequate standard of living and other civil, cultural, economic, political and social rights."[5]

Preparedness: Activities and measures taken before hazard events occur to ensure effective response to the impact of hazards, including the issuance of timely and effective early warnings and the temporary evacuation of people from threatened locations.

Prevention: "The outright avoidance of potential adverse impacts of hazards and related disasters through action taken in advance."[6]

---

[1] UN/ISDR, (2009), "Terminology: Basic Terms of Disaster Risk Reduction", Available at: http://www.unisdr.org/eng/terminology/terminology-2009-eng.html
[2] Ibid.
[3] Chambers, Robert and Gordon Conway, "Sustainable Rural Livelihoods: Practical Concepts for the 21st Century", IDS Discussion Paper 296, (Brighton, UK: IDS, February 1992).
[4] UN/ISDR (2009).
[5] United Nations Committee on Social, Economic, and Cultural Rights, (2001). "Poverty and the International Covenant on Economic, Social and Cultural Rights." 10/05/2001.
[6] UN/ISDR (2009).

Resilience: "The capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning".[7]

Disaster Risk: The product of hazard and vulnerability measured in terms of the quantitative and qualitative damage expected as a result of the exposure of vulnerable people to hazard.

Risk Analysis: A methodology to determine the nature and extent of risk by analyzing potential hazards and evaluating existing conditions of vulnerability that could pose a potential threat or harm to people, property, livelihoods and the environment on which they depend.

Vulnerability: "The potential to suffer harm or loss, related to the capacity to anticipate a hazard, cope with it, resist it and recover from its impact. Both vulnerability and resilience, are determined by physical, environmental, social, economic, political, cultural and institutional factors.[8]

Restocking: In the context of avian influenza, "restocking refers to the process of introducing new birds to replace those lost through death caused by the disease or through culling to prevent spread of the disease"[9].

Traditional Poultry Keeping: Poultry keeping within a household setting with flocks of less than 500 birds on rooftops, backyards or in the house with the aim of producing meat and eggs for home consumption and sales on a small scale.

[7] UN/ISDR, (2004),"Terminology: Basic Terms of Disaster Risk Reduction", Available at: http://www.unisdr.org/eng/library/lib-terminology-eng%20home.htm
[8] Twigg, John , "Vulnerability and Capacity Analysis", Tools for Mainstreaming Disaster Risk Reduction, Guidance Note No. 9, ProVention Consortium, 12.
[9] FAO, (2009), "Avian Influenza Glossary", Available at: http://www.fao.org/avianflu/en/glossary.html

ABSTRACT

The study provides an overview of the literature on disaster risk reduction, its relation with various development approaches and the livelihood framework. The study also examines the theoretical debates surrounding the relation between disasters and sustainable development. In addition, the study explores the various disasters that occurred in Egypt between 1990 and 2008. The study explores “rapid onset” natural disasters in Egypt (earthquakes and floods), a number of frequent human-made disasters (road, maritime, train accidents and fires), and “slow onset” hybrid disasters (Avian and Human Influenza and landslides) and their scope, causes, and implications on the livelihoods of the affected population. In addition, the study reviews the current legal framework as it relates to disasters in Egypt and the various institutions at the national and local levels. In addition, the case study examines the Avian and Human Influenza (AHI) crisis between February 2006 and April 2009 in Egypt and explores its impact on the livelihoods of traditional poultry keepers in Fayoum. The field work conducted for this study explores the reasons behind the increased vulnerability to bird flu among traditional poultry keepers in Fayoum, and examines the ways in which the AHI crisis affected their livelihood assets and strategies. Moreover, the study explores the role of veterinary services in prevention and mitigation of the AHI crisis and how it affected the susceptibility to AHI.

CHAPTER 1

INTRODUCTION

STUDY JUSTIFICATION AND RATIONALE

The political circumstances surrounding disasters in Egypt was the main reason behind the researcher's choice of this topic. The GoE constantly reacts after a crisis has taken place, and the government's emergency response and relief efforts are always chaotic, delayed, unplanned, and inefficient. Moreover, it is apparent that in several crises the government did not employ any preventive measures to reduce the risks of disasters before they occurred, despite the fact that these potential disasters risks are extremely visible. It is against this background that the researcher explored Disaster Risk Reduction (DRR) theory and how it can be applied to the Egyptian context. DRR is based on the premises that disasters are not random events and that their occurrence and impact depend on people's vulnerability and their ability to cope with hazardous events. Upon further investigation, the researcher discovered that "pre-disaster planning" can indeed contribute to reducing vulnerability and increasing the capability of the affected communities, thus leading to improved livelihoods.

Until the mid 1970s, development theorists believed that disasters were natural phenomena that could only be responded to after the disaster takes place (crisis management, post-disaster relief, and humanitarian/emergency aid). In the late 1970s, it was realized by development scholars that disasters are not unforeseen "natural events" that governments should implement preventive measures even before a disaster takes place. In addition, despite the fact that humanitarian assistance was increasing compared to development assistance, disaster relief was a short term solution that failed to cope

with the increased losses resulting from “complex disasters”. These developments led to the recognition, in the 1980s, that disasters are the result of accumulated risk produced by years of accumulated vulnerabilities due to economic, social, political and cultural factors. DRR is a means of bridging the gap between development and humanitarian agendas. The reason why the researcher chose to examine DRR as a development approach is that DRR measures take a long-term approach designed to protect livelihood assets of communities and individuals from the impact of hazards[1].

This topic has not been extensively dealt with before with respect to Egypt both in theory and in practice. This study is a modest attempt to contribute to the literature through linking DRR to various development approaches, examining how disasters are a result of the interaction of vulnerability and hazards, and through viewing disasters from a livelihood lens. In addition, there is limited scholarly documentation of disasters in Egypt and their impact on livelihoods. This study will attempt to fill this gap by documenting recent disasters that took place in Egypt from 1990 until 2008. Also, this study will examine the impacts of these disasters on vulnerable populations’ livelihoods, in specific, and on development efforts in general. DRR is still not adopted as a mainstream approach in development planning within the GoE since it is not popular among developing countries. This study will contribute to policy making by looking at the current structure and mechanisms that deal with disasters in Egypt before they even take place and examine whether they adopt a DRR approach or not. The case study will examine the Avian and Human Influenza (AHI) crisis and how the increased vulnerability of the traditional poultry sector in Fayoum as a result of embedded cultural

[1] CONCERN USA, “Approached to Disaster Risk Reduction”, Emergency Unit, September 2005, Available at: http://www.concernusa.org/media/pdf/2007/10/Concern_ApproachestoDRR%20paper%20-%20final.pdf , 1.

practices and unhygienic poultry keeping methods among other factors[2] are increasing the AHI risk among traditional poultry keepers and increasing its likeliness of turning into a pandemic stage, an area which has not been thoroughly investigated even after the continuous AHI outbreaks.

RESEARCH QUESTIONS

The following key questions will be examined:

1. What is the relation between disasters and development approaches in theory? And how can the DRR approach utilize the sustainable livelihoods approach?
2. What is the correlation between disaster risk, sustainable livelihoods and sustainable development in the case of Egypt?
3. What are the governmental bodies that deal with disasters in Egypt? What are their functions and responsibilities?
4. Is DRR mainstreamed in current development planning and policies of entities at the strategic, central and local levels in Egypt?
5. What are the elements that make up the vulnerability context of traditional poultry keepers in Fayoum?
6. How did Avian Influenza affect the livelihoods of traditional poultry keepers in Fayoum?
7. How did the policies and processes dealing with the Avian Influenza crisis at the local level affect the access of poultry keepers to livelihood resources and the formulation of their livelihood strategies?

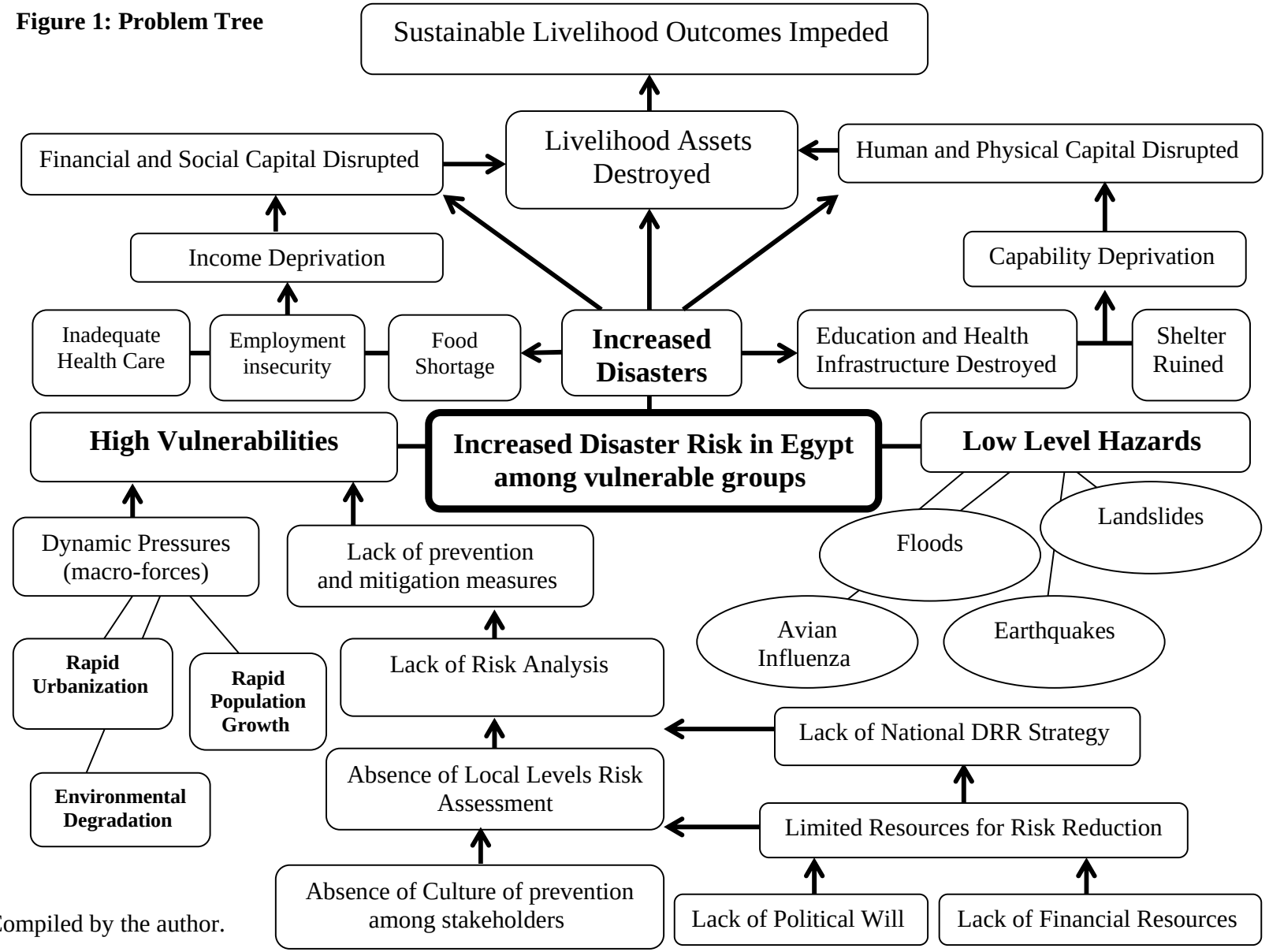
[2] All factors contributing to the vulnerability context of traditional poultry keepers to AHI will be examined in chapter 5.

RESEARCH PROBLEM

The following preliminary statements can be made from *Figure 1: Problem Tree*, which the author developed:

1. One of the root causes of the problem is the absence of a culture of prevention among government officials and vulnerable communities.
2. The lack of political will, inadequate qualified human resources, and budget constrains limit the capability of the GoE to reduce disaster risks.
3. The GoE failed to incorporate both hazard mapping and vulnerability assessment, i.e. risk analysis, in government planning.
4. There is a lack of national comprehensive strategy for reducing the risk of disasters in Egypt.
5. People's vulnerability increased due to a combination of dynamic pressures (such as rapid urbanization) and root causes (such as a lack of prevention and mitigation efforts).

Figure 1: Problem Tree



Source: Compiled by the author.

RESEARCH OBJECTIVES

The purpose of the thesis is to access whether disaster risk reduction can contribute to the attainment of sustainable livelihood outcomes. In order to reach the above goal, the objectives of the research are to:

1. Examine the relation between disaster risk, vulnerabilities, and hazards;
2. Explore the link between DRR discourse, development approaches, and the Sustainable Livelihood Approach;
3. Explore whether there is an interconnection between disasters/hazards, vulnerabilities, and livelihoods in the Egyptian context;
4. Examine how disaster impacts on livelihoods will be a key obstacle for the GoE in achieving the MDGs;
5. Examine and analyze current legal and institutional arrangements dealing with disasters in Egypt and the extent to which they are in line with the DRR approach;
6. Examine the Avian and Human Influenza Crisis in Fayoum, the AHI vulnerability context, impact on the livelihoods of poultry keepers, and explore the governments' prevention and mitigation efforts.

RESEARCH HYPOTHESIS

Low level hazards are magnified by high vulnerabilities in Egypt, which lead to increase in disaster risk among vulnerable groups. Impact of disasters will destroy people's livelihood assets as a result of income and capability deprivation and thus result in the failure of the attainment of sustainable livelihood outcomes in the Egyptian society.

METHODOLOGY

This section explores the method of investigation that was utilized to test the research hypothesis and answer the research questions. The researcher used a qualitative approach to conduct the research since it is the most suitable way to gather in-depth information. Some scholars, especially political economists, claim that quantitative techniques provide more ‘‘rigor analysis’’ than qualitative techniques. However, this view is criticized on the basis that the determinant of whether the approach is ‘‘rigor’’ or not depends on the proper application of both techniques; both quantitative and qualitative techniques can lead to misleading conclusions if badly applied[3]. It is argued that different techniques are appropriate to different settings and different methods are essential to tackle different research questions and problems[4].

The initial phase of this research involved an extensive review of the literature on disaster risk reduction in general. The literature review is based mainly on secondary sources from academic journals, books, as well as discussion papers of international development organizations. This was followed by a reliance on a combination of analyses of primary data and secondary sources to balance each other. The primary sources, utilized in chapters three and four, are official documents, reports on disasters in Egypt, and semi-structured interviews with government officials and DRR specialists in international development organizations. This primary data on DRR was gathered in an informal and friendly environment due to the sensitivity of the issue of disasters and its taboo nature among government officials. Moreover, the case study formulated on AHI

[3] White, Howard, “Combining Quantitative and Qualitative Approaches in Poverty Analysis”, *World Development*, Vol. 30, Issue 3, (2002): 511.
[4] Ibid.

was mainly based on primary data collected during the field work in Fayoum governorate.

Choice of Governorate

The reason why the researcher has chosen the Fayoum governorate for the field work is that Fayoum is a hot spot for AHI in Egypt since it is characterized by a moderate weather all year round and has two important natural attractions for migratory water birds, which are Qarun Lake and Wadi El Rayan Lake. The location of Fayoum, with its natural attractions, is an important factor that increases its vulnerability to HPAI. It is also one of the largest poultry producing governorates in Egypt and terribly affected by the AHI Crisis. Despite the fact that the impact on the traditional poultry keeping sector was not accounted for in the statistics gathered by the government, the GoE official data revealed that the AHI impact on commercial farms in Fayoum was immense. Medium and large commercial farms lost an estimated 725,000 birds in Fayoum only[5]. In addition, Fayoum reported seven H5N1 confirmed human cases, which put it in second place after Al Monofeya in terms of positive human cases. Moreover, Fayoum is the worst governorate in Egypt in terms of Human Development. According to the UNDP Human Development Index (HDI) published in Egypt Human Development Report 2008, Fayoum HDI is 0.669, which ranks Fayoum in the 22 place out of 22 governorates[6]. Another rationale behind the researcher's choice was the implementation of a UNDP funded project in Fayoum to mitigate the impact of AHI on poultry keepers by an NGO, the Catholic Relief Services (CRS), which had strong local presence in Fayoum.

[5] Catholic Relief Services, "Business Development Services to Mitigate the AI Risks of Women Micro-entrepreneurs in Egypt", Project Proposal Submitted to UNDP, July 2006.
[6] UNDP, "Egypt Human Development Report 2008: Egypt's Social Contract", United Nations Development Programme, and The Institute of National Planning in Egypt, 2008: 301.

The researcher's choice of districts was primarily influenced by the CRS project and the location of the implementing CDAs, which are located in Fayoum and Tamiah districts. The reason why CRS chose to focus on Fayoum and Tamiah districts is because they are the poorest districts in terms of GDP and human development and they have the highest overall contribution to the informal sector in terms of labor. The researcher also conducted field work in these two districts to examine the variations between different villages and to explore whether each community had its own cultural and behavioral patterns, livelihood and coping strategies, and whether the project had different impacts on different villages. In addition, the researcher chose to conduct the field work in a third district, which is Snoras district, which the CRS is not working in to compare and contrast information gathered from other two districts to have a richer study. One of Business Enterprise Support Tools Foundation (BEST)[7] staff was a key informant in Snoras district due to her extensive personal contacts and social capital. She arranged for personal interviews and group discussions with women in this district.

Choice of NGO

The reason why the researcher has chosen to cooperate with the CRS is that it is the only NGO that is currently working on mitigating the impacts of Avian Influenza in Egypt from a long term DRR perspective and not from a short term emergency point of view, which is in line with the objectives of this study. The CRS project entitled *Business Development Services to mitigate the AHI Risks of Women Micro-entrepreneurs in Fayoum,* which is funded by UNDP, employed risk coping and mitigation initiatives that attempted to alter the socio-economic impact of AHI on traditional poultry keepers and

[7] BEST in Fayoum is the implementing partner of CRS, which is the umbrella organization that facilitates project outreach and coordinates with CDAs.

the micro-poultry industry. In addition, the CRS and UNDP gave the researcher the permission to undertake the proposed field work and the researcher utilized CRS wide social network of informants; Mr. Mohamed Ashraf, AHI Project Manager, provided outstanding support by arranging the researcher visits to Fayoum and scheduling the meetings with BEST employees, CDAs staff, as well as women BDS clients.

Case Study Methodology

A case study was formulated to test the research hypothesis. The field work relied primarily on the *Rapid Rural Appraisal* (RRA) technique, which emerged in the 1970s and became popular in the development field in the 1980s. Robert Chambers described the RRA technique as "the attempt to learn about rural conditions in a cost effective way."[8] Chambers argued that RRA is a "fairly-quick and-fairly-clean" appraisal as opposed to the "quick and dirty" appraisal of rural development tourism and the "long and dirty" technique of extensive questionnaire surveys[9]. The RRA is the most suitable method for the purpose of this case study since one of the research objectives of the field work is to observe the cultural practices and behavioral patterns that increase poultry keepers' vulnerability to AHI and examine the dynamics of the AHI crisis on women's livelihoods. However, the researcher was careful not to fall into the RRA pitfalls. One of the RRA criticisms is that "rapid" has become a liability since it has been used to legitimize biased "rural development tourism", which are brief rural visits by urban-based professionals[10]. Robert Chambers argued that the word "rapid" was needed in the late 1970s to offset the long and large questionnaires, however it is better to replace the first

[8] Chambers, Robert, "Rapid Rural Appraisal: Rationale and Repertoire", *Public Administration and Development*, Vol. 1, Issue 2, (1981): 95-106.
[9] Ibid.
[10] Chambers, Robert, "Participatory Rural Appraisal (PRA): Challenges, Potentials and Paradigm", World development, Vol. 11, No.10,(1994):1441.

R of RRA with "relaxed" rather than "rapid" in order to ensure that enough time is made available to see, listen and learn from the poor[11].

In addition, the researcher adopted the *Triangulation* technique, one of the main principles of RRA, which uses a combination of methods from different sources to cross-check and verify responses gathered in different ways, such as semi-structured interviews with key informants, focus group discussions, case studies, transect walks and direct observation. This study proposes the application of the triangulation technique since it will attempt to overcome the reliability, accuracy and representative weaknesses of qualitative methods. Furthermore, in RRA, both the researcher and the researched collaborate and learn from each other to decide possible solutions to the research questions[12].

Field Work: RRA Methods

In order to examine the socio-economic impact of AHI in Fayoum, the researcher gathered primary data from the field in three districts in Fayoum governorate (Fayoum, Tamiya, and Snoras Districts) from 26th February to 20th March 2009. The field work involved semi-structured interviews, focus groups discussions, case studies, and transect walks and direct observation. Each method will be explained consecutively.

a. Semi-structured Interviews

The semi-structured interviews are regarded as the core of the RRA technique and are based on a list of open ended questions, which provided the framework for discussions. There are three sets of semi-structured interviews; the first group consists of CRS project staff, BEST key informants and CDAs extension officers, while the second group consists of government veterinaries, and the third and most important group of

[11] Ibid.
[12] Rifkin, S.B, "Rapid Rural Appraisal: Its Use and Value for Health Planners and Managers", *Public Administration*, Vol. 47, Issue 3, (1996): 509–526.

interviewees is composed of traditional poultry keepers. The researcher interviewed CRS project staff and BEST staff to gather essential information on the trends in different communities with respect to the reasons behind the spread of AHI, and the prevention and mitigation of AHI in Fayoum, and also to examine the challenges and constrains the project staff faced when dealing with government officials and traditional poultry keepers during project implementation. In addition, government officials were interviewed to be able to detect the gap in the local government's initiatives in theory and practice. Also, the field work examined how government policies affected women's asset accumulation and whether they enabled women to cope with the AHI crisis or not. The list of interviewees is available in Appendix 1.

With respect to the semi-structured interviews with women, the researcher interviewed a total number of 25 traditional poultry keeper in four villages. The researcher first piloted the interview questions with officials at BEST to make sure that they are culture sensitive, and that they will be well received by rural women, and as a result some modifications were made to the original questions. A sample of the questionnaire is attached in Appendix 2. With regard to the selection of interviewees, in Zawyet El Karatsa Village, Manshaet Baghdad Village in Fayoum district and Kafr Mahfouz in Tamiah district, four extension officers who are from the villages and are well acquainted with the households were asked to give suggestions of women. Moreover, with regard to Ezbet Al Hawashy Village and Al Adel village in Snoras district, Mrs. Manal Ibrahim, Specialist at BEST in Fayoum, was the key informant due to her wide range of contacts in this district. She was the one who organized and moderated the interviews and focus group discussions since the CRS is not working in

this area in Fayoum. The researcher made sure to interview beneficiaries of the Business Development Services (BDS) of the CRS project as well as non-BDS clients to ensure that the sample is inclusive of the entire community. In addition, the researcher used the "snowballing sampling" technique, where each women was asked to recommend another person to be interviewed. In order to overcome the bias of selection of interviewees, the researcher interviewed anonymous women in the villages walking in streets. The researcher also made sure that the interviews are conducted in an informal and forthcoming setting to be able to gather accurate information on women's practices and behavior with respect to AHI. The full list of women interviewees was compiled in Appendix 1.

b. Focus Groups

Focus group discussions are particularly useful to obtain information regarding social norms, cultural customs and livelihood patterns. As part of the field work, the researcher conducted four focus groups (total of 40 women), in several villages/districts; the two focus groups in in Zawyet El Karatsa Village and Al Mandara Village in Fayoum district was for women who utilized CRS BDS services, while the other two focus groups in Al Adel Village in Snoras district consisted of women who did not work with CRS. The extension officers working with traditional poultry keepers played a key role in gathering women. In all four focus groups, women were suspicious of the researcher's intentions and the reason behind the gathering. The researcher made it clear for women in the beginning of each focus group, that the researcher is a student working on a thesis and is not affiliated with any governmental entity, and that the researcher was there to learn from their experiences. At first, women were fearful and shy and refused to elaborately

discuss the issues at hand, however after intensive "icebreaking" techniques they gradually started opening up and discussing the issues raised. Focus group discussions have several advantages, including access to a larger body of knowledge, and instant mutual checking[13]. The self-correcting mechanism during group discussions was revealed when for example a poultry keeper gives an excessively idealistic picture of her polutry raising and slaughtering practices in the wake of the AHI crisis and is immediately challenged and corrected by the other women in the group.

c. Case Studies

During the field work, the researcher has formulated two case studies, which examined the household profile, livelihood assets pre and post AHI outbreaks, household members' livelihood strategies before and after the AHI crisis, and poultry keepers coping techniques. The reason behind the researcher's choice of these case studies is that the first case was characterized by outstanding success in mitigating the effects of AHI and the second one failed to employ coping strategies in the wake of the AHI crisis and stopped raising poultry altogether. Although examined cases cannot be generalized and are individual experiences, they provided significant in-depth in the data collected.

d. Transect Walks and Direct Observation

Transect walks and direct observation are vital elements in any field work since one of the disadvantages of the RRA technique is that it can be misled by embedded myths within a community. Transect walks is based on the idea that the researcher walks systematically with an informant through a village, observing, asking, and listening while recording findings. The importance of walking, seeing and asking questions lie in their

[13] Chambers, Robert, (1981), "Rapid Rural Appraisal", 102.

ability to provide the researcher with vital information about customs and practices that are often regarded by rural communities as common daily routine that they can fail to narrate to an outsider. It was also interesting to observe the body language of the extension officers and how they interact with women. Moreover, direct observations during transect walks are valuable for cross checking differences between claimed and actual practices. According to Robert Chambers, rural people often have beliefs about their values and activities which do not correspond with the reality[14]. He continues to argue that it is common to be told about a custom that has either lapsed or perhaps was never practiced at all[15]. The observation technique can be insightful in the sense that it reveals the gap between actual actions and claimed practices. One of the best ways to study the socio-cultural patterns and local behavior of community members is by simply being there.

e. <u>Desk Research</u>

The researcher conducted desk research on the CRS project in Fayoum based on the project document, project progress reports, and final evaluation report. In addition, the researcher also utilized secondary data found in the FAO/WFP impact assessment entitled *"Highly Pathogenic Avian Influenza: Rapid Assessment of HPAI Socio-Economic Impact on Vulnerable Households in Egypt"*[16] conducted in four governorates in Egypt, in which Fayoum is one of them, since it utilizes the sustainable livelihoods framework to assess HPAI socio-economic impact on traditional poultry keepers and is in conformity with the research. In addition, another secondary source that was of great importance to

[14] Ibid.
[15] Ibid.
[16] FAO/ WFP, (2007), Ellen Geerlings (ed.), "Highly Pathogenic Avian Influenza: A Rapid Assessment of the Socio-Economic Impact on Vulnerable Households in Egypt", A Joint Study by the FAO and WFP, 1.

the study was the UNICEF behavioral report entitled "*Avian Influenza Survey: Knowledge, Attitudes and Practices of the Egyptian Public"*[17], which was a community survey in twelve governorates that provided information on Avian Influenza-related knowledge and attitudes. The overall goal of this survey was to provide baseline data that would contribute to raising the awareness and improving the practices of the public related to AHI. The immediate objectives were to provide baseline data on the level of awareness of the most at-risk groups; establish a quantitative technique to understand attitudes and practices of the most at-risk groups related poultry breeding, cooking, buying, and slaughtering; and provide data on the perceptions of the most at-risk groups related to the roles of various parties in eliminating the disease. The researcher utilized these quantitative studies to compliment the research qualitative findings.

RESEARCH CHALLENGES AND LIMITATIONS

In general the researcher did not encounter any major problems that necessitated changing the research design; however the researcher faced some minor challenges during the course of the research. One of the challenges was the inadequate theoretical critique of the DRR discourse. Despite the availability of a wide array of scholarly journals, books, working papers, policy papers, reports, guidelines, and case studies on DRR, however there is very limited academic material on critiques of DRR theory due to the novelty of the disaster risk reduction area of work.

Moreover, the nature of the study and the sensitivity of the topic of disasters in Egypt limited the willingness of some informants, especially government officials, to openly discuss disaster related issues, vulnerabilities, and impacts of disasters on

[17] UNICEF, "Avian Influenza Survey: Knowledge, Attitudes and Practices of the Egyptian Public", Final Study Report, (Cairo: El Zanaty and Associates, July 2007).

vulnerable communities' livelihoods. In addition, similar terminologies, which had extremely different meanings and applications, were usually used interchangeable by government officials. As a result, the information gathered from the CMDR at the central level and from different local levels at Fayoum governorate was based on the interviewees' personal interpretations of risk reduction. This challenge was faced by cross checking all data obtained from personal interviews with supplementary sources such as official reports, minutes of committee meetings, and official guidelines.

Furthermore, there was limited access to primary documents and sources with regard to disasters in Egypt. The researcher encountered serious challenges while collecting data, for the third chapter, on recent disasters that occurred in Egypt due the scarcity of primary as well as secondary sources. The topic of disasters is still politically sensitive and considered a taboo issue among government officials in Egypt. The researcher had difficulty gathering required information for various hazards and disasters in Egypt since most of the available primary documents were classified. The researcher would overcome this challenge by utilizing the researcher's wide network of informal connections to obtain necessary documents and reports and schedule interviews with high level officials. This challenge was also faced during the research process of the fourth chapter on the GoE institutional arrangements with regard to disasters; the researcher was not allowed to obtain a copy of the current laws and regulations dealing with disasters in Egypt, and had to rely on secondary sources for the legal framework section. These sources were not comprehensive since they did not cover all the laws and regulations with respect to disaster management. In addition, there was very few documentation of the socio-economic impact of disasters on the Egyptian population, and there was a lack

of secondary sources that link the socio-economic impacts of disasters to the stagnation of the development process in Egypt. Future studies would have to be conducted to review each and every disaster and its socio-economic impact on the affected communities in specific and its effects on the overall development process in general.

The fact that being a female researcher facilitated the field work in Fayoum to a great extent since it allowed the interviewer to engage poultry keepers in serious discussions in informal household settings. However, one of the challenges was that the researcher had to be accompanied at all times by an extension officer the poultry keepers' households. Although the researcher work was definitely facilitated by the company of the extension workers, in some instances this was not a blessing since women refused to give any figures with respect to their income from poultry in front of the extension officer. The main reason behind this attitude is that women are afraid from the extension officer's evil eyes, commonly known as *Hasad*, since the officer is usually a member of the same village. For sensitive subjects like income, women were suspicious of these questions and often responded with misleading and inaccurate data. Moreover, the researcher and the extension officer were not allowed to inspect women's poultry at rooftops and in backyards so as not to figure out the exact flock size and not to observe how the poultry is kept and maintained. Poultry rearing is one of the important livelihood strategies among rural women in Fayoum and AHI is a very sensitive issue among poultry keepers since it means the loss if their main source of livelihood that is why women was fearful to share genuine information on their practices after the AHI outbreaks.

Another research limitation is that the study was conducted just after the end of the CRS project, which did not allow the researcher to examine the long term impact of the project on women's poultry keeping practices. Another constraint was the inability to acquire quantitative data from women with respect to the outbreak in poultry; recall was an unreliable technique for collecting data since poultry keepers could not support their arguments about the situation almost three years ago. When for instance the researcher asked about the numbers of dead or sick poultry during the initial AHI outbreaks in 2006, they would respond by "some died" or "all of the poultry died". That is why in many instance the researcher compliments the qualitative findings with quantitative data from secondary sources.

CHAPTER 2

THE LINK BETWEEN DISASTER RISK REDUCTION, DEVELOPMENT DISCOURCE AND LIVELIHOODS IN THEORY.

INTRODUCTION

The objective of the first chapter is to outline the theoretical origins of Disaster Risk Reduction (DRR) and its main principles, to reveal the relation between DRR and different development approaches in theory, to establish a theoretical link between the DRR approach and the sustainable livelihood approach, and to examine the theoretical debates surrounding disasters and sustainable development. The first section of the literature review will set the ground for the thesis by clarifying similar yet different concepts attributed to the disaster risk reduction literature and how inaccurate understanding of certain terminologies can cause great confusion in the DRR discourse. The reason why several DRR terminologies were explored in this chapter and were not just included in the glossary is because these concepts are often perceived by government officials as synonymous, however in theory these terminologies differ significantly. Terminologies such as “disaster management” and “disaster risk reduction” differ completely in theory since the first deals with managing response to disasters, while the second deals with managing risks and the underlying causes that lead to disasters. These differences have huge policy implications since dealing with a disaster after it takes place is totally different from trying to alter the root causes of disasters’ risks. It is very common among government officials in developing countries to inaccurately use “disaster management” terminology and attribute it with DRR concepts.

Afterwards, the study will examine the construction of disaster risk by looking at the meanings and implications of concepts such as hazard and vulnerability. The notion of vulnerability will be closely examined in this section, since it is the entry point between the DRR approach and the livelihoods approach. The conceptual framework that will be used in this study is the Pressure and Release Model (PAR) examined in the *Risk Analysis Framework* section. Afterwards, disaster risk reduction theoretical origins from the lenses of various development approaches will be examined.

The following section of the literature review will explore the theoretical linkages between disaster risk reduction and poverty reduction and how they are regarded as a "codependent pair"; the literature review will reveal how disasters were proven to hold back development gains and increase poverty, and at the same time how poverty is also attributed for increasing disaster risks. In addition, the sustainable livelihood approach to poverty reduction will be examined to explain how disasters were proven to increase communities' vulnerabilities, and thus impede the attainment of their sustainable livelihood outcomes. Finally, the last section will look at the various critiques of the disaster risk reduction approach in the literature.

CONCEPTUALIZATION OF KEY TERMINOLOGY

It is crucial before going into depth in the DRR approach to first define some key terminologies and differentiate between them. Despite the fact that DRR related concepts have different meanings and thus applications, they are used interchangeably both in the literature and in practice. This section will introduce basic concepts as to begin the study on solid grounds. The first question that should be raised is: what do we mean by a disaster? A disaster is "the occurrence of an extreme hazard event that

impacts on vulnerable communities"[1] resulting in "serious disruption of the functioning of society, causing widespread human, material or environmental losses which exceed the ability of affected society to cope using only its own resources"[2]. The Centre for Research on the Epidemiology of Disasters (CRED), established in Brussels, Belgium in 1973 at the Université Catholique de Louvain and a part of WHO's *Global Programme for Emergency Preparedness and Response*, outlined certain criteria for an incident to be called "a disaster", and thus would be entered into CRED database known as EMDAT; the criteria are either when 10 or more people reported killed, 100 people reported affected, declaration of a state of emergency, or there is a call for international assistance[3]. In addition, the term "natural disaster" is widely used in the literature on disasters, which refers to the occurrence of "rapid onset" natural hazards such as earthquakes, floods, landslides, storms, hurricanes, volcanoes, tsunamis… etc. However, this study would not limit itself to rapid onset natural disasters but would also incorporate human-made disasters, and "slow-onset" hybrid disasters.

Thus, this study will deal with the three types of disasters, which are natural, human-made, and hybrid disasters for several reasons. The reason why this study will be dealing with "natural disasters" is the wide misconception associated with them, in which they are unavoidable "acts of God" that governments cannot prevent nor control and should only react to. This passive view is wide spread among governments in developing countries and local communities. Moreover, the reason why this study will be dealing with human-induced and hybrid disasters is due to their significant increase, high

[1] Twigg, John , "Vulnerability and Capacity Analysis", 12.
[2] Asian Disaster Reduction Center, (2003), "Glossary on Natural Disasters", Available at: www.adrc. or.jp/
[3]The Centre for Research on the Epidemiology of Disasters (CRED). Available at: http://www.cred.be/

occurrence and socio-economic impact. A study was made to quantify the frequency, nature and changes of human-made disasters in industrialized countries in the 20th century, by analyzing two disaster databases (EM-DAT and EMA), showed that there was an exponential growth in the frequency of human-made disasters due to an increase in traditional hazards[4]. Despite the fact that there has been an extensive literature on the frequency of natural disasters and a comprehensive understanding of their probable incidence and damages, there are few publications on human-made disasters and their impacts on sustainable human development. Recently, there has been a growing literature on human-made disasters manifested in the climate change literature as one of the most serious environmental problems and an obstacle to the achievement of sustainable human development[5]. The impacts of climate change on development are expected to manifest primarily through impacts on natural resources, on which the poor depend heavily, and on human health. Temporal and spatial changes in rainfall patterns and shifts in temperatures compound existing crises facing the water and agriculture sectors due to growing populations[6].

Finally and most importantly, in many instances the disaster is a combination of a natural hazard and human-made actions, which are referred to as "hybrid disaster"[7]. For example, Avian and Human Influenza can be perceived as both a natural phenomena and a human induced disaster at the same time, since the origin of the AHI is natural but

---

[4] Coleman, Les, "Frequency of Man-Made Disasters in the 20th Century", *Journal of Contingencies and Crisis Management*, , Vol. 14, Issue 1, (March 2006): 3-11.

[5] UNDP (2002). "Synthesis of UNDP Expert Group Meeting: Integrating Disaster Reduction with Adaptation to Climate Change", (Havana, Cuba: UNDP, 17–19 June 2002).

[6] Schipper, Lisa and Mark Pelling, "Disaster Risk, Climate Change and International Development: Scope For, and Challenges To, Integration", *Disasters*, Vol. 30, Issue 1, (March 2006): 26.

[7] Shaluf, Ibrahim M, "Disaster Types", *Disaster Prevention and Management*, Vol.16, Issue 5, (2007): 706.

human practices and behaviors is what causes the disaster. Therefore, this chapter should take into account this shortcoming of the literature and be more inclusive by incorporating both natural, human-made, and hybrid disasters in the definition of "disasters". Then what does the term "disaster risk" refers to?

"Disaster risk" is the probability of harmful consequences or expected losses resulting from interactions between hazards and vulnerable conditions. It is the "potential disaster losses, in lives, health status, livelihoods, assets and services, which could occur to a particular community or a society over some specified future time period"[8]. Then these losses could be reduced according to the "relatively new conceptual framework within the development field" [9], which is "disaster risk reduction". DRR is defined as "reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events"[10] in order to "avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of disasters" [11].

It is also necessary to differentiate between two fundamental terms that are inaccurately used interchangeably in the literature, which are "disaster risk reduction" and "disaster management" since they are inaccurately used by policy makers. These two terms are not synonyms; the key word that dramatically differentiates between these two phrases is the term "risk". DRR entails all efforts (pre-disaster) prevention, mitigation and preparedness compared with "disaster management" that deals with (post-disaster)

[8] UNISDR, (2009), "Terminology on Disaster Risk Reduction".
[9] Action Aid, "Disaster Risk Reduction", Human Security PolicyBriefing Note, (October 2006):1.
[10] UNISDR, (2009), "Terminology on Disaster Risk Reduction".
[11] UN-ISDR, (2007), "Guidelines for National Platforms for Disaster Risk reduction", 2.

rescue, relief, and humanitarian response. “Disaster management”, also known as “emergency management”, is “the organization and management of resources and responsibilities for addressing all aspects of emergencies, in particular preparedness, response and initial recovery steps”[12]. The revolutionary *White Paper on Disaster Management* (1999) in South Africa clearly emphasize that the difference between “disaster risk reduction” and “disaster management” is in “reducing risks”. The paper stated that a "fundamental purpose of the policy is to advocate an approach to disaster management that focuses on reducing risks – the risk of loss of life, economic loss and damage to property, especially to those sections of the population who are most vulnerable due to poverty and a general lack of resources… A shared awareness and responsibility needs to be created to reduce risk in our homes, communities, places of work and in society."[13] While some theorists and practitioners also use a third more inclusive term that is “disaster risk management”, which incorporate both DRR pre-disaster planning since it contains the term “risk” and disaster management post-disaster response and relief measures. “Disaster risk management” refers to both disaster risk reduction initiatives (prevention, mitigation and preparedness) and humanitarian action (emergency response, relief and reconstruction).[14]

LITERATURE REVIEW

For the past years, the DRR approach has been gaining significant weight in the development arena. DRR, according to the UNDP, is "the systematic development and application of policies, strategies and practices to minimize vulnerabilities, reduce exposure to hazards and the unfolding of disaster impacts throughout a society, in the

[12] UNISDR, (2009).
[13] White Paper. 13.
[14] Schipper, Lisa and Mark Pelling, 24.

broad context of sustainable development."[15] This definition should be complemented with another one that incorporates the notion of reducing risks. The UN/ISDR 1994 definition complements the UNDP one by stating that DRR is "the conceptual framework of elements considered with the possibilities to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development"[16]. UN/ISDR further updated its definition of DRR in 2009 to refer to the "concept and practice of reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters, including reduced exposure to hazards, and lessened vulnerability of people and property"[17]. Then how did DRR came about in theory?

The DRR theory is dominated by two schools of thought: the Neo-Marxists and the Behavioralists[18]. The first school of thought, the neo-Marxist, occupies a middle position between the classical Marxist and Weberian theories of class by incorporating Max Weber's broader understanding of social inequality. The neo-Marxist approach to disasters, which evolved in the 1970s, stressed the inequitable power relationships between the developed and the developing world that accelerated the process of impoverishment, which in turn exacerbated the vulnerabilities of marginal populations in the global South[19]. Since the neo-Marxists viewed disasters as deeply embedded within the social structures that shaped everyday development experiences, they argued that "the more complex understanding of vulnerability enables researchers to conceptualize how

[15] UNDP definition. United Nations Committee on Social, Economic, and Cultural Rights, 2001.
[16] UN/ISDR, (2004), "Terminology: Basic Terms of Disaster Risk Reduction".
[17] UNISDR, (2009).
[18] Pelling, Mark, "Paradigms of Risk", in Mark Pelling (ed.) *Natural Disasters and Development in a Globalizing World*, (New York : Routledge, 2003):9.
[19] Gunewardena, Nandini and Mark Schuller (eds.), *Capitalizing on Catastrophe: Neoliberal Strategies in Disaster Reconstruction.* (United Kingdom: AltaMira Press, 2008):6.

social systems generate the conditions that place different kinds of people (often differentiated along axes of class, race, ethnicity, gender, or age) at different levels of risk from the same hazard and suffering from the same event."[20] However, neo-Marxist approach was criticized for over-privileging economic class in its analysis and failing to identify the effect of vulnerability on "individuals" as an agency of analysis[21].

The second school of thought that dealt with disaster research is the "behavioral approach". Behavioralism emerged in political science in the United States when Charles E. Merriam, in his presidential address to the *American Political Science Association* in 1925, stated "someday we may take another angle of approach than the formal… and begin to look at political behavior as one of the essential objects of inquiry"[22]. During the next decade the behavioral approach focused on studying individuals rather than larger political units; it was interested in studying what people said or thought. Armed with the newly developed tools of survey research, it turned away from the study of constitutions and from saying how states ought to be ruled to the study of the behavior of political actors and to statements about how states actually were ruled. Behaviorists were mostly drawn to subjects about whom quantitative data could be obtained, and thus the study of mass political behavior was promoted[23]. There is a misconception that "political behavioralism" is identical with "quantification" in political studies. Quantitative measurement and analysis of data is a commonly recognized as an important characteristic of behavioral work in politics, but it is by no means its central

---

[20] Oliver-Smith, Anthony, "Disasters and Forced Migration in the 21st Century", in I *Understanding Katrina: Perspectives from the Social Sciences,* (New York: Social Science Research Council, 2006), 3.
[21] Pelling, Mark. "Paradigms of Risk", 9.
[22] Dahl, Robert A, "The Behavioral Approach in Political Science: Epitaph for a Monument to a Successful Protest", *The American Political Science Review,* Vol. 55, No. 4, (Dec. 1961): 763.
[23] Political Dictionary, in *The Concise Oxford Dictionary of Politics*, (UK: Oxford University Press, 2003).

characteristic[24]. The 1970s witnessed an increased interest among behavioral scientists to address disaster- related issues; a special issue of the *American Behavioral Scientist* in 1970 was entirely on organizational and group behavior in disasters[25].

The behavioral approach to disasters emerged as a result of the "typical" misconceptions associated with individual behavior such as "personal and social chaos", "disaster syndrome", "social jungle", and "being hostile"[26]. The behavioral approach responded to these stereotypes by arguing that, after recognizing a danger, the behavior of people is adaptive, aimed at protecting their families, others, and themselves[27]. Behavioralists even argue that "much of the initial rescue work is done by the victims themselves who do not wait to be told what to do, and contrary to the predominant image, that movement toward the impact area is more significant than movement away."[28] In general, behavioralists were pre-occupied with the ways in which individuals responded to disasters; however they didn't study how individuals influence the occurrence of disasters in any way. [29] They downplayed the role of social structures in shaping vulnerability, and thus they focused on disaster response and recovery (post disaster response and relief). The neo-Marxists criticized the non-political nature of the behavioralists[30]. The question that should be raised is: how did disaster risk reduction first evolved in the development discourse in general?

---

[24] Wahlke, John C., "Pre-Behavioralism in Political Science", *The American Political Science Review*, Vol. 73, No. 1, (March 1979): 10.
[25] Quarantelli, E.L. and R. R. Dynes, "Response to Social Crisis and Disaster' Annual Review of Sociology", 3 (1977): 23-49.
[26] "Editor's Introduction", *American Behavioral Scientist*, Vol.13, No. 3, (1970): 323-480.
[27] Ibid.
[28] Ibid.
[29] Quarantelli, E.L., (ed), *Disasters: Theory and Research*, (California: Sage, 1978).
[30] Pelling, Mark, "Paradigms of Risk", 9.

The development of the concept of disaster risk reduction came very late in the development literature; the late 1970s and early 1980s witnessed a sudden interest among development scholars to address the issue of disaster in theory. Until the mid 1970s, development theorists believed that disasters are "acts of nature" that can only be responded to after a disaster has taken place, which is known as humanitarian/emergency aid. The 1980s marked a new thinking in disaster research, in which disasters were no longer perceived as natural phenomena since they were proved to be the result of accumulated risks produced by the interaction of vulnerabilities due to economic, social, political and cultural factors and underlying hazards. Thus, the case for preventative action was made on these grounds.

G.N. Ritchie, founder of the *Cranfield Disaster Management Center*, had noted in 1976 the importance of development in preventing disasters[31]. Frederick Cuny's book *Disasters and Development*, published in 1983, was the first serious attempt to address the ways in which disasters are a cause of underdevelopment and showed how disasters can interrupt the development processes[32]. Cuny argued that the increase in disaster risk is a consequence of the entrenched cycle of poverty in developing countries; He continued to argue that the roots of poverty and the roots of vulnerability are the same, in which the increased marginalization of the population is caused by high birth rates and the lack of resources to meet the needs of this exploding population[33]. Moreover, Kenneth Hewitt in 1983 in his book *Interpretations of Calamity* argued how western

---

[31] Niekerk, Dewald van, "Local Government Disaster Risk Management", in *Municipal Management: Serving the People*, Gerrit Van der Waldt, Annelise Venter; and Gerrit Van der Waldt (eds.) (South Africa: Juta and Company Limited, 2008), 236

[32] Cuny, Frederick C., *Disasters and Development,* (Oxford: Oxford University Press, 1983), 13-14.

[32] Sachs, W., "Development", *The Development Dictionary*, (London: Zed Books, 1990).

[33] Cuny, Frederick C. *Disasters and Development,* 13-14.

societies developed "citadels of expertise" remote from the lives of ordinary people to "quarantine" disasters and deal with it as an "archipelago of isolated misfortunes" rather than a result of social and economic relations in the society[34].

Moreover, Mary Anderson in 1985 published her early work *A Re-conceptualization of the Linkages between Disasters and Development*, which provided great insights into the relation between disasters and development; Anderson argued that, first, disasters are indicator of the failure of development, and second development is the process of reducing vulnerability to disasters[35]. In 1987, R.C. Kent dealt with the causes of disasters and how vulnerabilities can worsen conditions of disasters[36]. In addition, in 1989 Mary Anderson and Peter Woodrow advanced the concept of *Vulnerability and Capacity Analysis* (VCA) in *Rising from the Ashes*. The VCA framework differentiates between "needs" and "vulnerabilities" by arguing that vulnerabilities precedes disasters and is a result of long-term processes while needs are the short term demands of the community arising from the crisis itself[37]. Every society has both strengths and weaknesses (i.e. capacities and vulnerabilities) and when a disaster occurs this means that society's vulnerabilities outweighs its capacities[38]. They continued to argue that "development is the process by which vulnerabilities are reduced and capacities increased."[39]

---

[34] Hewitt, Kenneth, *Interpretations of Calamity,* (Winchester, MA: Allen & Unwin,1983).
[35] Anderson, Mary, "A Re-conceptualization of the Linkages between Disasters and Development", *Disasters: The International Journal of Disaster Studies and Practice,* Harvard Supplement, 1985.
[36] Niekerk, Dewald van, "Local Government Disaster Risk Management", 236.
[37] Anderson, M.B. and P.J. Woodrow, *Rising from the Ashes: Development Strategies in Times of Disaster*, (London: Lyne Rienner Publishers,1998), 10.
[38] Ibid, 11.
[39] Anderson, M.B. and P.J. Woodrow, *Rising from the Ashes: Development Strategies in Times of Disaster*, 2nd Edition, *(*London: Lyne Rienner Publishers, 1998), 12.

From this point onwards, an interest has emerged in linking disasters to the degree of development of nations and to the disparities that exist within a nation. Fredrick Krimgold, one of the early theorists of pre-disaster planning, stated that "the primary goal of pre-disaster planning may be seen as the prevention and mitigation of disasters."[40] Pre-disaster planning is the term used to illustrate the wide range of efforts made to reduce the risk of disasters before they take place. There are three types of pre-disaster planning: disaster prevention, disaster mitigation and disaster preparedness.[41] This study will only be dealing with both disaster prevention and mitigation.

DISATSER RISK= HAZARD x VULNERABILITY

Terms such disaster risk, vulnerabilities, hazards have different meanings and interpretations for different people. This section will explore the concepts of hazards, vulnerabilities and risks and examine the relation between them. Disasters can essentially be viewed as a function of the risk process, i.e. disaster risk result from the interaction of hazard, conditions of vulnerability and insufficient capacity or measures to reduce the negative consequences of risk.[42] According to the Hyogo Framework for Action (HFA), a 10-year non-binding global plan to make the world safer from disasters adopted by 168 Governments at the World Conference on Disaster Reduction in Kobe-Hyogo, Japan in 2005, the starting point for reducing disaster risk and for promoting a culture of disaster resilience lie in, first, the knowledge of the hazards, and second the knowledge of the physical, social, economic and environmental vulnerabilities to disasters that most

[40] Cuny, Frederick C. *Disasters and Development*, 204.
[41] Ibid. p.205.
[42] Ahrens, Joachim and Rudolph, Patrick M., "The Importance of Governance in Risk Reduction and Disaster Management", *Journal of Contingencies and Crisis Management*, Vol. 14, No. 4, (December 2006): 207.

societies face.[43] That is why the terms hazard and vulnerability will be both examined, however more attention will be given to the notion of "vulnerability" since the exact same hazard can have different impacts on various communities with varying degrees of vulnerability. In addition, there is a general consensus in disaster research that the frequency of natural hazards has not increased in recent decades, however there is an apparent increase in the number of disasters and their impacts, which led scholars to argue that vulnerabilities within societies are increasing[44].

Hazards are potentially damaging physical events, phenomena or human activities that have the potential to cause the loss of life, injury, loss of livelihoods and services, property damage, infrastructure damage, agricultural loss, damage to the environment, or disrupt economic processes[45]. They can have different origins: natural hazards (e.g. seismic, geological, hydro-meteorological and biological/health related hazards), human-made hazards (e.g. technological hazards), and hybrid hazards (e.g. epidemics).[46] Hazard research has been dominated by the physical hazard agent rather than the social outcomes of hazardous events and the underlying social structures which create conditions of risks[47]. Hazard research has been generally criticized for its lack of attention to social theory[48]. According to K. Hewitt (1983), the early hazard work favored the concentration of power at the individual unit of analysis and used qualitative measurement techniques and hence neglected the political and economic contexts[49].

---

[43] Hyogo Framework for Action, 2005-2015,Building the Resilience of Nations and Communities to Disasters.
[44] Blaikie, Piers et al., *At Risk : Natural hazards, People's Vulnerability, and Disaster,* **(**London ; New York : Routledg,1994), 31.
[45] UN/ISDR, (2009), "Terminology: Basic Terms of Disaster Risk Reduction".
[46] Ibid.
[47] Fordham, Maureen, "Gender, Disaster and Development", 58.
[48] Ibid.
[49]Hewitt, Kenneth, *Interpretations of Calamity*, (London: Allen and Unwin,1983), 25.

This “dominant view” in hazard research that was governed by solely scientific discourse was criticized for its over-emphasis of the technical aspects of hazards[50]. Hewitt’s *Interpretation of Calamity* criticized this “dominant view” by arguing that most of the impacts of disasters are “characteristics of the societies” they occur in[51]. This critique has marked a new engagement in hazard research away from technical solutions and towards political economy with the "vulnerability approach" as the leading perspective, which emphasize the socio-political root causes of hazardous processes[52].

In the early 1980s, the vulnerability approach to disasters began with a rejection of the assumption that disasters are “acts of nature” and the result of external natural phenomena that man has no control over.[53] The emergence of the “vulnerability perspective” marked the shift from “reactive hazard approach” to “proactive risk reduction approach”; the vulnerability approach mainly focused on the “social geography of harm”[54]. Quarantelli (1986) argued that disasters are a not a result of “physical happenings” but they are “social events”; he continues to say that disasters are the “manifestations of the vulnerabilities of a social system.”[55] Vulnerability for long time was seldom addressed because conventional hazard research dealt with symptoms rather than causes; the reason for this bias is because, according to Piers Blaikie et al (1994), “vulnerability is deeply rooted, and any fundamental solutions involve political change,

[50] Lewis, James, *Development in Disaster-Prone Places: Studies of Vulnerability*, September 1999, 6.
[51] Hewitt, Kenneth, *Interpretations of Calamity*, 25.
[52] Fordham, Maureen, "Gender, Disaster and Development", 59.
[53] Wisner, Ben, et al., *At Risk: Natural Hazards, People’s Vulnerability and Disasters*, Second Edition, London and New York: Routledge, 2004) , 10.
[54] Fordham, Maureen, "Gender, Disaster and Development" , 59.
[55] Lewis, James, *Development in Disaster-Prone Places: Studies of Vulnerability*, 6.

radical reform of the international economic system, and the development of public policy to protect rather than exploit people."[56]

The term vulnerability has different meanings and interpretations for different people. The most common understanding of vulnerability is that it is "the degree of susceptibility to a natural hazard".[57] One of the overriding questions in vulnerability studies is whether the concept of vulnerability primarily refers to people and their activities or refers to systems.[58] Vulnerability is experienced at various levels; it refers to both people/communities and to systems. The first type is people's vulnerability to disasters and the extent to which they are at risk; for example having a house unable to withstand earthquakes, and the extent to which they can cope with the impacts, through such provisions as health care. The case study will examine traditional poultry keepers' vulnerability to AHI. The second is the vulnerability of institutions and public services such as the infrastructure[59].

There are several dimensions of vulnerabilities such as physical, cultural, social, economic, political, institutional and environmental vulnerabilities. Buildings at risk, unsafe infrastructure, and rapid urbanization, among others are the causes of physical vulnerability.[60] The social vulnerability originate from occupation of unsafe areas, high-density occupation of sites and building, lack of mobility, low perceptions of risk, vulnerable occupations, vulnerable groups and individuals, and lack of education.[61] Social vulnerability is a crucial dimension in creating the conditions in which disasters

[56] Blaikie, Piers et al., *At Risk*, 233.
[57] Lewis, James, 4.
[58] Hilhorst, Dorothea and de Man, Rens, "Measuring Vulnerability to Natural Hazards," *Progress in Human Geography*, 8, Vol. 32, Issue 4, (2005):83-84.
[59] L . Bull-Kamanga et al., "From everyday Hazards to Disasters: the Accumulation of Risk in Urban Areas", *Environment and Urbanization*, Vol. 15, No. 1 (2003): 194.
[60] Twigg, John, "Vulnerability and Capacity Analysis", 1.
[61] Ibid, 2.

can happen.[62] Although social circumstances maybe associated with vulnerability to disasters, they should not be considered the same thing. Some of the causes behind economic vulnerability are mono-crop agriculture, non-diversified economy, subsistence economies, and welfare dependency.[63] While environmental vulnerability can be attributed to deforestation, pollution of ground, water and air, destruction of natural storm barriers, and climate change.[64] The question is does vulnerability lead to poverty or does poverty eventually lead to increased vulnerability?

Vulnerability is both a condition and a result of poverty since it cannot be reduced to a one-dimensional cause-effect relationship with poverty. Vulnerability can be seen as a cause of poverty, as a reason why the poor remain poor, and at the same time an effect of poverty. UNDP's Disaster Risk index (DRI) proves that vulnerability and poverty are largely co-dependent. According to empirical evidence, it is especially the poor in developing countries who lack the administrative, organizational, institutional, financial, and political capacity to effectively cope with disasters and who are particularly vulnerable. While only 11% of the people exposed to natural hazards live in countries characterized by a low level of human development, they account for more than 53% of the total number of recorded deaths.[65] The researcher believes that in order to reduce disaster risks two separate regimes, the vulnerability approach and the livelihood approach, needs to be converged, which will be elaborated upon in the *DRR and Livelihood* section. The following section will examine the conceptual framework used in this study that explains the elements of vulnerability and how they shape disaster risks.

---

[62] Ibid.
[63] Ibid.
[64] Ibid.
[65] UNDP, (2004), "A Global Report: Reducing Disaster Risk: a Challenge for Development".

The "Pressure" and "Release" Model

The *Pressure and Release Model* (PAR) will be the main conceptual framework for this study. The PAR model was first initiated by Piers Blaikie et al in 1994[66] and then republished by Ben Wisner et al in 2004[67]; the model is founded on the premises that a disaster is the intersection of two opposing forces, which are the processes generating vulnerability on one side and the impact and severity of the natural hazard event on the other side. The PAR model "resembles a nutcracker, with increasing pressure on people arising from two sides."[68] The PAR model is an organizing framework outlining a hierarchy of causal factors that together constitute the pre-conditions for a disaster, as shown in figure 2. This pathway is referred to as "progression of vulnerability"; it is a sequence of factors and processes that leads us from the disaster event and its immediate causes back to ever more distant factors that initially may seem to have little to do with causing the disaster[69]. The "progression of vulnerability" is a result of the interaction of three factors, which are "root causes", "dynamic pressures" and "unsafe conditions" resulting in increased vulnerability among affected population.

The first set of factors contributing to the "progression of vulnerability" are "root causes", which result from economic, demographic and political processes leading to the limited access to power and resources. These "root causes" are the product of economic structures, legal definitions of rights, gender relations, and other elements of ideological nature that reflects the distribution of power in a society.[70] For example, people who are economically marginal (such as urban squatters) or live in marginal environments (such

[66] Blaikie, Piers et al., *At Risk*.
[67] Wisner, Ben et al., *At Risk*, 87.
[68] Wisner, Ben et al., *At Risk*, 50.
[69] Ibid.
[70] Ibid, 24.

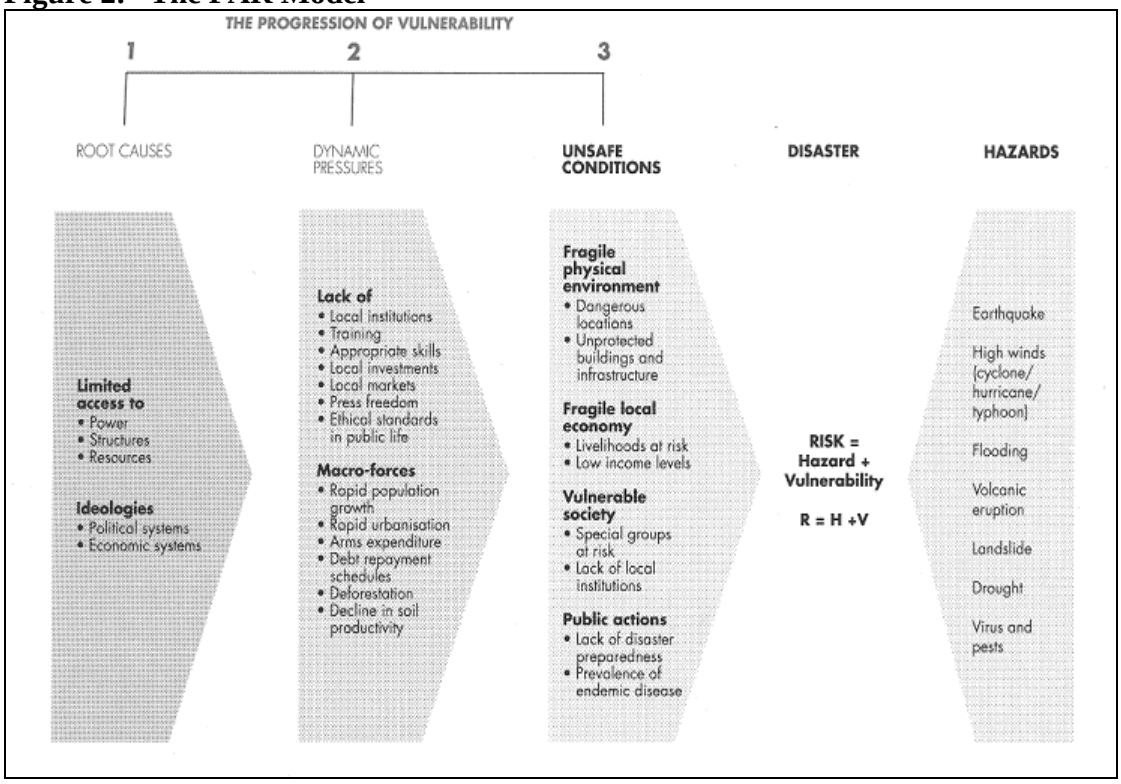
as arid or semi arid) tend to hold no economic and political powers which creates sources of vulnerability to these groups. Their limited access to livelihoods and resources are likely to generate higher levels of vulnerability.

The second factor is “dynamic pressures” which are the processes and activities that translate the effects of the root causes into vulnerability of unsafe conditions. These pressures include macro-forces (rapid population growth, rapid urbanization, debt repayment schedules, epidemic diseases and malnutrition) and micro-forces (such as lack of local institutions, lack of local investment, and lack of training). A clear example on how the “dynamic pressures” operate to channel root causes into unsafe conditions is endemic disease and malnutrition; undernourished and diseased populations suffer the most in disasters or when there is disruption to their livelihoods[71].

The third factor that contributes to a rise in people's vulnerability is “unsafe conditions” (such as fragile physical environment, fragile local economy, and fragile local institutions), in which for instance people have to live in dangerous locations because they are unable to afford living in safe buildings and work in unsafe environments. All these "Pressures" in addition to hazardous events will lead to increased disaster risks. The “Release” aspect arises from the realization that to release the pressure that causes disasters, the entire chain of causation needs to be addressed right back to the root causes, and not just the immediate causes or triggers of the hazard itself or the unsafe conditions of vulnerability[72].

[71] Ibid.
[72] Ibid. 87.

Figure 2: "The PAR Model"



Source: Wisner et al. (2004), p.51.

DRR THEORETICAL LINKAGES WITH DEVELOPMENT APPROACHES

There are three main approaches that directly connect DRR to the development discourse, which are the: a) human capability approach; b) governance paradigm; c) human rights based approach. These approaches will be addressed consecutively.

The Human Capability Approach

The Human Capability Approach (HCA), which emerged as a result of the adoption of Amartya Sen's Capability Approach as a conceptual framework in several UNDP Human Development Reports (HDRs) [73]. Academic support for the critique of "believing that economic growth is the sole goal for development"[74] has been gaining

[73] Fukuda-Parr, Sakiko, "The Human Development Paradigm: Operationalizing Sen's Ideas on Capabilities", *Feminist Economics*, Vol. 9, Issue 2/3, (July 2003): 301.
[74] Pelling, Mark, (ed.), 45.

weight since the publication of HDRs in 1990 with its Human Development Index (HDI) that measures equity, health and education and not just economic activity. HCA is being applied to inform policy choices in many areas, from poverty reduction to sustainable development. Sen's theory of development as capabilities expansion is a starting point for HCA[75]; Sen's approach defined human development as the process of enlarging a person's ''functionings and capabilities to function, the range of things that a person could do and be in her life.''[76] The most basic capabilities for human development are to lead long and healthy lives, to be knowledgeable, to have access to the resources needed for a decent standard of living and to be able to participate in the life of the community.[77] Human development is about removing the obstacles to what a person can do in life, obstacles such as illiteracy, ill health, or lack of access to resources. This is the entry point for the DRR approach into the capability approach.

The negative socioeconomic effects felt by those vulnerable and exposed to hazards will impact in numerous ways on the capacity of people to achieve and enjoy human development gains. This will also mean that levels of human development will shape people's capacity to be resilient in the face of hazard stress and shock. The authors of HDRs recognized the negative correlation between the increase in human vulnerability and lack of capabilities, which in turn make these individuals prone to hazards risks that easily disturb human development. The publication of the 2007/2008 HDR entitled "Fighting Climate Change: Human Solidarity in a Divided World" had marked a shift in the climate change discourse from being a mere environmental issue to a major human

[75] Fukuda-Parr, Sakiko, "The Human Development Paradigm", 302.
[76] Sen, Amartya, ''Development as Capabilities Expansion'', *Journal of Development Planning* , Vol.19, (1989): 41–58.
[77] UNDP. (2004), "Reducing Disaster Risk: A Challenge for Development", 19.

development issue. The 2008 HDR asserted that climate change related disasters (floods, storms, and droughts) are destroying human development opportunities and increasing inequalities among and within developing countries. The 2008 HDR reveals that climate change risks (such as reduced agricultural productivity, higher water insecurity, increased droughts, increased flooding, extreme weather events, and increased health risks) would ultimately affect the most vulnerable nations and lead to the reversal of human development.

In addition, the 2001 *World Disasters Report* prepared by the IFRC, which compared the impact of natural events on countries with high, medium and low scores on the HDI, revealed that two-thirds of the deaths from 2,557 disasters occurred at countries with low HDI.[78] UNDP took this analytical work even further in 2002 by commissioning the quantitative study of more than 200 possible indicators of disaster risk vulnerability and producing a vulnerability index for use in its *World Vulnerability Report*[79]. Overall, the human capability approach provides a coherent disaster risk sensitive framework.

Governance Paradigm

Good governance has recently been at the forefront of development discourse; good governance implies managing public affairs in a democratic, transparent, accountable, participatory and equitable manner. Joachim Ahrensn and Patrick M. Rudolph argue in their article *The Importance of Governance in Risk Reduction and Disaster Management* that institution building with the aim of improving the quality of governance is required to reduce disaster risk; consequently, susceptibility to disaster can

[78] IFRC, (2001), 162-165.
[79] Wisner et al., (2004, 25.

be interpreted as a consequence of institutional failure.[80] In this sense, there is a strong interdependence between good governance and DRR. It can be argued that good governance is a prerequisite for DRR. According to Action Aid, good governance is regarded as a "corner stone of successful DRR strategies".[81] Some theorists (Ahrens, 2000, 2002; Fordham, 2003[82]; Warner, 2003[83]) argue that institutional failure resulting in bad governance can be regarded as one of the root causes of institutional vulnerability resulting in increased disaster risk. Then what constitutes an effective governance structure that would foster disaster risk reduction?

There are four dimensions of an effective governance structure that fosters development and supports risk reduction, which are: accountability, participation, predictability and transparency[84]. The first dimension is "accountability", which involves an agreement on clear roles and responsibilities of organizations as well as policy makers that ensures that politicians can be held responsible for their actions and it is reinforced through "participation", which is the second dimension, manifested through formal or informal channels for citizens to influence policymakers.[85] Governments should decentralize and strengthen local governments so decision making and accountability on DRR is improved. The third dimension is "predictability", in which clearly defined laws and policies regulate DRR and their consistent implementation complements

---

[80] Ahrens, Joachim and Rudolph, Patrick M., "The Importance of Governance in Risk Reduction and Disaster Management", 207-220.
[81] Action Aid. "Disaster Risk Reduction", 1.
[82] Fordham, M., "Gender Disaster and Development" , 57–74.
[83] Warner, J., "Risk Regime Change and Political Entrepreneurship: River Management in the Netherlands and Bangladesh." in Mark Pelling, *Natural Disasters and Development in a Globalizing World,* 185-198.
[84] Ahrens, Joachim and Rudolph, Patrick M., 212.
[85] Ibid.

accountability.[86] Transparency, the forth dimension, is the free access of information by the public, which is reflected by the publication of reliable DRR information by government agencies in a timely manner.[87] Transparency should reduce the incidence of corrupt behavior, improves the analysis and articulation of public policy choices, and enhances their acceptance. For examples, the high level of corruption due to a lack of transparency and accountability resulted in high death toll in two major earthquakes in Turkey in 1999, mainly due to the non-enforcement of appropriate building codes[88]. Access to information is a crucial element in reducing communities' vulnerability.

Moreover, the capacity of poor people to cope with hazards depends on their access to resources (material ones as well as information), which is in turn determined by the institutional and legal frameworks in the country.[89] Both the institutional and legal structure dealing with disasters in Egypt will be deliberately explored in chapter four from a governance perspective.

Human Rights Approach

There is a wide consensus among disaster scholars on a human rights based approach to disaster prevention, mitigation and vulnerability reduction, in which all people should have a universal right to be protected from the impacts of disasters. According to G. Kent (2001), international human rights laws implicitly address the right to protection from disasters[90]. The *Universal Declaration of Human Rights* in Article 3 states, ‘‘everyone has the right to life, liberty, and security of person.’’ In addition,

---

[86] Ibid.
[87] Ibid.
[88] Ibid, 216.
[89] Wisner, Ben, "Sustainable Suffering? Reelections on Development and Disaster Vulnerability in the Post-Johannesburg World", *Regional Development Dialogue*, Vol. 24, No. 1, January 2003: 135-148.
[90] Kent, G., “The Human Right to Disaster Mitigation and Relief”, *Global Environmental Change Part B:Environmental Hazards*, Volume 3, Issues 3-4, September-December 2001, 137.

Article 25 states that ‘‘everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, or old age or other lack of livelihood in circumstances beyond his control.’’ Disasters indeed are conditions under which an individual may face ‘‘lack of livelihoods in circumstances beyond his control’’. Thus the right to an adequate standard of living is not suspended in disasters.

G. Kent (2001) suggests that all people have a human right to protection from disasters, and consequently governments have an obligation to provide that protection.[91] People are entitled to know how risk-prone they are to disasters and should have access to a safe environment as part of their human rights[92]. Thus, the right to a safe and secure environment should become a human rights issue.[93] The basis for disaster risk reduction efforts should be a rights-based approach, focusing on how to empower vulnerable communities to engage in prevention, mitigation and preparedness.

In addition, proponents of the human-rights agenda in the disaster-development discourse advocate for a modification in international laws. According to Wisner (2001a), UN agencies in DRR realm have provided technical knowledge, support for institution building, and financial assistance through grants and loans, however there efforts lacked the moral obligation that will drive local political will.[94] There is an urgent need for

[91] Ibid.
[92] Ibid.
[93] Aysan, Y., “Putting Floors Under the Vulnerable.: Disaster Reduction as a Strategy to Reduce Poverty”, 1999.
[94] Wisner, Ben.. “Disasters: What the United Nations and Its World Can Do”, *Environmental Hazards*, Vol. 3, Issue 3-4, (2001): 126.

globally agreed standards of disaster risk reduction exemplified in treaties, covenants and other agreements, which will force nation states to reduce peoples' vulnerabilities.

DISASTERS AND SUSTAINABLE DEVELOPMENT

There are three well recognized linkages between disasters and sustainable development in the literature. First, one of the predominant debates in the disaster-development literature is that vulnerabilities continue to increase due to failed development; Hewitt (1995) argues that "if there could be such a thing as sustainable development, disasters would represent a major threat to it, or a sign of its failure"[95]. There is a wide consensus in the literature that rapid urbanization, the concentration of populations in hazard prone areas, and the spread of unsafe buildings reduce the human capacity to absorb and recover from the impact of a hazard, and thus lead to increased disaster risk[96]. Blaikie et al (1994) argues that rapid urbanization, one of the "dynamic pressures", is a key factor in the growth of vulnerability. Rapid urbanization is attributed to several factors of underdevelopment such as a result of rural disasters and search for employment[97]. These features of "failed development" will be explored in chapter three and examined whether they are among the "dynamic pressures" resulting in increased vulnerabilities in the Egyptian context or not.

A second debate is that disasters would set back sustainable human development and increase poverty of an entire region or a nation as a result of the loss of livelihood resources, and interruption of development projects.[98] There is a wide consensus among development scholars that disasters disrupt and can set back sustainable human

[95] Hewitt, Kenneth, "Sustainable Disasters? Perspectives and Powers in the Discourse of Calamity", in J. Crush (ed.), *Power of Development,* (London: Routledge, 1995), 155.
[96] UNDP, (2004), "A Global Report: Reducing Disaster Risk: a Challenge for Development" , 9.
[97] Blaikie et al., 37.
[98] UNDP, (2004), "A Global Report: Reducing Disaster Risk: a Challenge for Development", 9.

development through the loss of livelihood resources.[99] A study of the impact of the 1998 Bangladesh floods on micro finance institutions revealed that over 62% of all micro finance clients had lost their homes, which meant the loss of the work place for many clients as well[100]. In addition, nearly 50% had lost their everyday household possessions, and over 75% had their ability to generate income either destroyed or at least temporarily suspended.[101] For example, in the 1990s, the Asia region saw losses to infrastructure reach US$10 billion per year due to natural disasters.[102] In addition, in Ecuador, climatic effects of El Nino in 1997-1998 increased the headcount poverty rate from 34 percent in 1995 to 46 percent in 1998[103]. In Honduras, where there was widespread loss in agricultural output following Hurricane Mitch in October 1998, the poverty rate increased from 43 to 46 percent but more so for rural households. In the Dominican Republic, headcount poverty increased from 36 to 40 percent after a combination of drought and terms-of-trade shocks in 1990[104].

Moreover, disasters hold back progress toward achieving the Millennium Development Goals (MDGs) either directly through the loss of lives, livelihoods and infrastructure or indirectly through the diversion of fund from development to emergency relief. Many countries are not on course to meet MDG1, the prime goal of halving extreme poverty and hunger by 2015. Country progress reports on MDGs frequently note

---

[99] Ozerdem, Alpaslan, "Disaster as Manifestation of Unresolved Development Challenges", in Mark Pelling (ed.), *Natural Disasters and Development in a Globalizing World*, (2003), 202.
[100] Hasan, M. Emrul and Nina Nayar, "Effects and Implications of High Impact Emergencies on Microfinance: Experiences from the 1998 Floods in Bangladesh" , Occasional Paper 1, **(**Dhaka: South Asian Network of Microfinance Initiatives (SANMFI), 1998), 9.
[101] Ibid.
[102] World Bank, 2004.
[103] IMF, (2003), "Fund Assistance for Countries facing Exogenous Shocks", 66.
[104] Ibid.

progress on MDG 1 being affected by disasters[105]. For example, in the MDG reports of China, Nepal, Tanzania, and Mozambique various disasters are cited as key pressures and causes for continuing levels of rural poverty. Another example which affects achieving MDG 2 is that disaster-hit families often fail to send children to school, while schools may be closed down by earthquakes or floods[106]. Moreover, disasters can disrupt development by transferring resources from development projects to humanitarian relief efforts. Despite the fact that total official development assistance (ODA) fell in real terms during the 1990s, emergency funding has risen. OECD estimates for "emergency and disasters assistance" from DAC donors have risen from an average of 4.8% of total ODA in 1990-94 to 7.2% in 1999-2003, and in 2003 exceeded $ 6 billion or 7.8% of ODA.[107]

Another relation is that disaster risk reduction is developmental since it involves the reduction of human, social, economic, political and environmental vulnerabilities. It is now widely recognized in the development community that the implementation of development projects towards vulnerability and risk reduction is the solution to prevent and mitigate disasters. "Disaster risk management" is the new term used by most donors to integrate pre and post disaster activities (planning phase, prevention phase, mitigation phase, preparedness, warning phase, disaster impact phase, rescue phase, relief phase, rehabilitation and reconstruction phase).[108] Most international organizations such as WB, DFID and UNDP started to integrate disaster risk management into its development programming since risk reduction initiatives was proved to protect livelihoods from vulnerabilities and boost their capacity to cope with specific hazard impacts, thus helping

[105]DFID, (2005), 19.
[106] Ibid.
[107] OECD, (2004).
[108] UNDP, (1992).

to make human development sustainable. This is the core rationale for integrating disaster risk reduction into development planning. For example, in 2001 the death toll resulting from Hurricane Michelle, which hit very densely inhabited areas in Cuba, were limited to five people. This success has been attributed to the political commitment to reduce risk among vulnerable groups, preparedness training and planning, effective communication of early warning that were implemented by professional local personnel with responsive communities.[109]

Moreover, a range of case studies and reports testifies to the cost-effectiveness of disaster risk reduction activities. In general, cost-benefit analysis of a wide range of initiatives, from local to global levels, shows that every $1 spent on mitigation can typically save $4-10 in the cost of recovering from disasters[110]. In addition, the WB and the US Geological Survey calculated that economic losses worldwide from disasters during the 1990s could have been reduced by US$ 280 billion worldwide if US$ 40 billion were invested in mitigation and preparedness[111]. When dealing with particular nations, an example would be that the value of cattle saved on a flood shelter of 4 acres in Bangladesh during the 1998 floods was as much as £150,000 against a construction cost of only £8,650, according to Oxfam[112]. Another example, in Darbhanga district in North Bihar, India, a cost-benefit analysis of disaster mitigation and preparedness interventions suggests that for every Indian rupee spent, 3.76 rupees of benefits were realized. The Net Present Value (NPV) of the project was calculated at £46,000[113].

---

[109] Wisner, Ben et al., (2004).
[110] Yates R., Alam K., Twigg J., Guha-Sapird, Hoyois P., (2002), "Development at Risk", *The World Summit on Sustainable Development*", South Africa, 26 August - 4 September 2002, 3.
[111] DFID, (2005). "DFID Policy Brief: Disaster Risk Reduction: A Development Concern", 33.
[112] Ibid.
[113] Ibid.

DRR AND SUSTAINABLE LIVELIHOODS FRAMEWORK

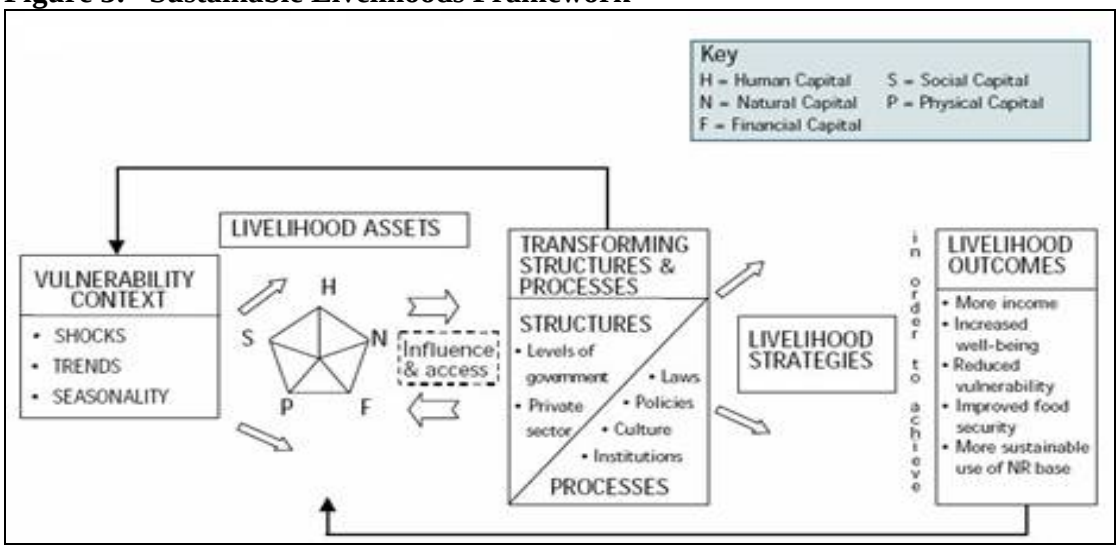
The *Sustainable Livelihoods Approach* (SLA) explicitly addresses the vulnerability context, which provides a strong entry point for integrating it into the disaster risk reduction approach. The livelihoods approach provides a framework in which DRR can be part of a long-term sustainable development work, in which vulnerabilities should be reduced to achieve sustainable livelihood outcomes. The main objective of the SLA is to enable people to become more resilient to shocks and trends by supporting people to build up their assets and formulate livelihood strategies. The SLA was first initiated by Robert Chambers and Gordon Conway in 1992; afterwards it was also endorsed by DFID in Carney (1998) and then by others including Drinkwater and McEwan (1994), Leach et al. (1997), Moser (1998), Scoones (1998) and Bellington (1999)[114].

Chambers and Conway define the concept of sustainable livelihoods as the "capabilities, assets, and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods in the long and short term."[115] The Institute of Development Studies (IDS) livelihoods team proposed a somewhat modified definition, which is that "a livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural

[114] Wisner, Ben et al., (2004), *At Risk*, 95, quoting Robert Chambers and Gordon Conway (1992), Carney (1998), Drinkwater and McEwan (1994), Leach et al. (1997), Moser (1998), Scoones (1998), and Bellington (1999).
[115] Chambers, Robert and Gordon R. Conway, "Sustainable Rural Livelihoods: Practical Concepts for the 21st Century", IDS Discussion Paper 296, 1991,7.

resource base"[116]. The main difference between this definition and the earlier one by Chambers and Conway is that it does not include the requirement that for livelihoods to be considered sustainable they should also "contribute net benefits to other livelihoods in the long and short term". In this sense the IDS version is more realistic[117].

Figure 3: "Sustainable Livelihoods Framework"



Source: DFID (1999). "Sustainable Livelihoods Guidance Sheets."Available at: http://www.livelihoods.org

The basic elements of the framework, as shown in figure 3, are *Vulnerability Context*, *Livelihoods Assets*, *Transforming Structures and Processes*, *Livelihood Strategies and*, *Livelihood Outcomes*. The *Vulnerability Context* shapes people's livelihoods and determines the availability of their assets, which are affected by trends (e.g. population trends, resource trends, and economic trends), shocks (e.g. disasters), and seasonality (in prices, production, and employment opportunities)[118]. These shocks and trends can directly destroy people's assets or can force people to dispose of their assets as part of their coping strategies. The *Livelihood Assets* which can be destroyed or depleted are human capital (e.g. skills, knowledge, and health), physical (e.g. transportation,

[116] Krantz, Lasse, "The Sustainable Livelihood Approach to Poverty Reduction" , SIDS, February 2001, 8.
[117] Ibid.
[118] DFID, (1999), "Sustainable Livelihoods Guidance Sheets", Section 2.2

shelter, water supply, and energy supply), social capital (e.g., networks, membership of groups, relationships of trust, access to institutions), financial capital (e.g., savings, credit, remittances, and pensions), and natural capital (e.g., land, water, wildlife, and environmental resources).[119] The *Transforming Structures and Processes* are the levels of governments, institutions, organizations, policies, legislation, culture, and the private sector that shape livelihoods. They have a direct effect on access to assets, since the structures and processes can affect the creation of assets, determine access to assets, and influence rates of asset accumulation. In general, *Transforming Structures and Processes* are seen as directly determining access to various types of livelihoods strategies. The livelihood strategies are the combination of people's activities and choices (including productive activities, investment strategies, reproductive choices, etc.) in attempting to achieve their *Livelihood Outcomes*, which are their objectives[120].

Originally, the SLA approach was developed specifically for the analysis of a wide range of agrarian policies. None the less, it can be of great use in disaster theory since the occurrence of a disaster or a "shock" implies non-sustainability of the affected livelihoods. The decrease in the vulnerability context depends on people's capacity to anticipate, cope with, resist and recover from hazard impacts by formulating coping strategies. People's capacities can be increased through collective action within a favorable institutional environment (local, national and international) to establish societal resilience[121]. From the above description, it is evident that the SLA places much emphasis on two key DRR terms, which are vulnerability and capacity. SLA provides good opportunities for incorporating strong DRR component in development

[119] Ibid.
[120] Ibid.
[121] DFID, (2005), 2.

programmes in order to properly assess risk, vulnerabilities and capacities[122]. A focus on livelihoods has broadened the scope of disaster mitigation policy to include questions of social structure and social agency. Given the positive attributes of DRR to sustainable livelihoods in specific and sustainable human development in general, the question that should be raised is: why DRR tend to be overlooked in development planning?

There are several barriers to mainstreaming DRR in development planning. First there is inaccurate assumption that development efforts, which aim to reduce poverty, will automatically address vulnerability in a given society. However, several scholars argue that development efforts is still not leading to sustainable livelihood outcomes, and this limited progress can partly be explained by its failure to take proper account of disaster risk, which requires systematic assessment of exposure to "shocks" for different groups of people, and explicit attention to options for reducing this vulnerability, to be part of the process of designing development interventions.[123] The second factor has to do with the lack of commitment among policy makers. Ben Wisner points out that there is a broad gap between the declarations that accompany disasters about reforming institutions and regulatory frameworks and the political will and capacity to implement these reforms[124]. For politicians, progress on risk reduction is much less visible than emergency response[125]. In addition, policy makers tend to be reluctant to address disaster risk reduction due to the limited resources, and they believe that donors will be more willing to give emergency aid than prevention/ mitigation aid. The third constrain was the

[122] Trocaire, "Disaster Risk Reduction: Learning for Livelihoods Series No. 1", Available at: http://www.trocaire.org/uploads/pdfs/policy/trocaire_DRR_paper.pdf
[123] DFID, (2005), 5.
[124] Wisner, Ben, (2001).
[125] Ibid, 36.

separation of donors' humanitarian assistance and development assistance which complicates funding for DRR, since it is a cross-cutting issue between the two sections.

CRITIQUE OF DISASTER RESEARCH

After reviewing the literature on DRR, it is very crucial to address the theoretical critiques attributed to disaster theory. Due to the novelty of the DRR approach, there were limited scholarly critiques with respect to the DRR approach since the "risk reduction" literature in it of itself emerged as a critique to the "dominant modernist" disaster theory. DRR theory surfaced as a response to "disaster imperialism", in which international interventions in the aftermath of a disaster is justified[126]. The critiques of the disaster paradigm are "distributed along a continuum of epistemological positions"[127], according to Stallings (1997).

At one end of the continuum there is the "dominant modernist approach" that regards risk as solely an object of hazard that can be measured independently of social and cultural processes. Theories associated with the modernist approach are techno-scientific, statistical and engineered based. Kenneth Hewitt's *Interpretations of Calamity* (1983) was one of the early critiques of the "dominant disaster paradigm" affiliated with the classical modernist view. Hewitt described how societies developed "citadels of expertise to quarantine disaster as an archipelago of isolated misfortunes" distinct from the lives of ordinary people rather than a consequence of social and economic relations[128]. The modernization theory, which was represented in the "dominant paradigm", was rejected by the Structuralists in favor of reliance of local knowledge in

[126] Lewis, James, *Development in Disaster-Prone Places: Studies of Vulnerability*,146.
[127] Wisner, Ben et al., (2004), 18.
[128] Gunewardena, Nandini and Mark Schuller (eds.), *Capitalizing on Catastrophe: Neoliberal Strategies in Disaster Reconstruction, (*UK: AltaMira Press, 2008), xi.

reducing disasters risks and not "imported technology"[129]. The "modernist approach" to disasters, risk and vulnerability is criticized for being a historically constructed "neo-colonial discourse", which denigrates large regions of the worlds as tropical, poverty stricken and disaster prone[130].

At the other extreme end of the continuum is the "strong constructionist approach", where nothing is a risk in itself but is a product of historically, and socially and politically created "ways of seeing". Bankoff's (2001) article "Rendering the World Unsafe: Vulnerability as Western Discourse" is an extreme critique of the "dominant disaster paradigm". Bankoff argues that disaster risk and vulnerability are historically constructed in "neo-colonial discourses" [131]. He continues to state that the concept of "natural disasters" is part of a wider historical and cultural geography of risk that depicts large parts of the world as "dangerous places" through which the West inflict its control over most nations of the globe. Bankoff portrays the notion of "vulnerability" in the late 20th century like the notion of "tropicality" in the 17th-19th century and the notion of "development" in Post WW2, which denigrates large regions of the world as "disaster-prone", "poverty-stricken", and "tropical others" respectively[132]. In addition, the "vulnerability approach" has been under severe criticism since it is regarded to be from "a knowledge system formed within a dominant Western liberal consciousness and greatly reflects the values of this culture"[133]. Modernist proponent's criticizes the social constructionist approach because it does not lead to improvement in disaster prevention practice. Moving across the continuum, there are what could be termed the "weak

[129] Blaikie et al., (1994).
[130] Bankoff, Gregory, "Rendering the World Unsafe", 27.
[131] Ibid, 28.
[132] Ibid, 29.
[133] Ibid, 29.

constructionist" approaches, where disaster risk is an objective hazard but is always mediated through social and cultural processes, according to Oliver Smith and Hoffman (1999).

In the middle of the continuum lies the "Structuralist" critique, also known as the "constructionist paradigm", which is one of the most moderate criticisms of disasters theories; it emerged as a result of the slow progress in reducing disaster losses[134]. Structuralists argue that disasters in the developing world are a result of global forces and pressures and marginalization of the poor and not solely a direct result of the hazardous events[135]. The structural critique is a radical interpretation of disasters, contrary to the behavioral approach to disasters, in which it doesn't pay much attention to the hazard itself and focuses on the limitations imposed by global forces on individual action[136]. The Structuralist critique is based on the notion that disasters stems from Third World countries dependency on developed nations[137]. However, the Structuralist approach is criticized for the lack of practical risk reduction measures. In addition, there is the "Post-structural critique" that argues that notions such as "disaster management cycle"; i.e. prevention, mitigation and preparedness ate "technical constructs" imposed on different cultures, economic political and gender realities[138].

In addition, Allan Lavell introduced several critiques in his article *The Impact of Disasters on Development Gains: Clarity or Controversy* regarding disaster-development relationship. He argued that any serious analysis of the disaster-development relation

---

[134] Smith, Keith, *Environmental Hazards: Assessing Risk and Reducing Disaster*, (London: Routledge, 2004), 6.
[135] Ibid.
[136] Ibid.
[137] Smith, Keith, *Environmental Hazards*, 6.
[138] Wisner et al., (2004), 28.

must use a temporal framework that examine the full "life cycle" of a disaster and not just the short-term impact after disaster occurs[139]. He also argued that the focus on the impacts of disasters on development divert our attention from a fundamental concern, which is the impact of development on disasters. Another criticism of the DRR discourse is the use of economic criteria and cost-benefit analysis for attempting to justify risk prevention and mitigation. Critics argued that the "attainment of securer living conditions for the poor and a substantial reduction in their vulnerability is more a case of ethics, equity and social justice, than economic rationale and efficiency."[140]

Another critique to the field of disaster research was its lack of gender dimensions. Feminists argue that a gender-bias exists in disaster research and that women's roles, experiences, and perspectives need to be further investigated and affiliated with DRR. Maureen Fordham's article "Gender, Disaster and Development" in *Natural Disasters and Development in a Globalizing World* revealed that despite the fact the gender is a key dimension of social difference, it has been absent as an analytical variable in disaster research[141]. Disaster research was criticized for being gender-insensitive since many books on hazards and disasters failed to include gender in their indexes and even in the text as a whole due to the dominance of men in the field of disaster management.[142] A considerable amount of literature published over the past decade emphasized the extent to which gender inequalities often result in women bearing a disproportionate burden of the costs of disasters (Byrne and Baden 1995; Delaney and Shrader 2000; Enarson 2001b; Twigg 2004). An "alternative perspective" was introduced

[139] Lavell, Allan, "The Impact of Disasters on Development Gains: Clarity or Controversy", Paper Presented at the IDNDR Programme Forum, Geneva, 5-9th July 1999, 2.
[140] Ibid.
[141] Fordham, Maureen, "Gender, Disaster and Development", 63.
[142] Ibid, 65.

in 1997 by Ariyabandu[143], which suggests that the differential impact of disasters on women is a manifestation of the failure of disaster mitigation policies to grasp that gender power relations in the society is the primary reason for increasing women's vulnerability to disasters[144].

[143] Ariyabandu, M.M., “Preface” in P. Fernando, *South Asian Women: Facing Disasters, Securing Life*, Sri Lanka, (1997).
[144] Fordham, Maureen, "Gender, disaster and development", 66.

CHAPTER 3

DISASTERS IN EGYPT

INTRODUCTION

The objective of this chapter is to examine whether there is an interconnection between disaster risks, vulnerabilities, and livelihoods in the Egyptian context. The first section will explore recent disasters that occurred in Egypt in the last two decades classified according to the three types of disasters, which are natural, human made and hybrid disasters. The scope, consequences and causes of each disaster will be examined. This chapter will also explore the ramifications of recent disasters that occurred in Egypt on sustainable development by revealing how disasters' impacts pose a challenge towards achieving the MDGs through the disruption of livelihood assets, which thus lead to the failure of attaining vulnerable group's livelihood outcomes.

The reason why this study devoted an entire section on exploring the recent disasters that occurred in Egypt is to examine the overall disaster situation in Egypt, to reveal their interrelation with people's vulnerabilities, to explore the impact of different types of disasters on population's livelihoods, and to reveal the negative socio-economic effects of disasters on the development process in the Egyptian context. An observation of all different disasters in Egypt will shed light on various trends and patterns in Egypt by, first, identifying certain risk patterns prior to the disaster. Second, it gives us an indication of the concentration and distribution of vulnerability within the Egyptian society and, third, provides us with patterns of lack of government responsiveness before, during and after crisis and explains the major drivers of these patterns.

OVERVIEW OF RECENT DISASTERS IN EGYPT

According to Dr. Samir Riad in a report submitted to the UNDP, "Egypt is a country that is relatively free from catastrophic natural disasters… but their socio-economic impacts are more serious." [1] The researcher doesn't agree with this statement and finds it somehow misleading since Egypt is not "relatively free from natural disasters". While relative to other countries, Egypt may not be the lowest on the list, nevertheless Egypt is susceptible to several natural hazards and is characterized by a large number of human-made and hybrid disasters, as will be revealed in the following sections. This alleged claim that Egypt is "relatively free from disasters" often justify why the GOE is not committed and concerned with DRR issues and why government officials lack the political will to reduce disaster risks, a claim that will be further investigated in chapter four.

This section will explore recent disasters that occurred in Egypt between 1990 and 2008, classified according to the three types of disasters, which are natural (earthquakes and floods), human-made (road, maritime, train, and fire accidents) and hybrid disasters (Avian and Human Influenza and Landslides). During the past decades, Egypt has experienced a number of major crises which has resulted in many economic, social, environmental and human losses. Egypt is among 28 developing countries who have suffered direct losses of more than 1 billion USD from only "sudden-onset" extreme natural disasters in the past 20 years, according to the *Munich Re*, one of the largest reinsurance companies that compile international statistics on disasters[2]. This figure is just an indication of the situation; the prevalence of "slow

[1] Riad, Samir, "Report on Disaster Risk Management in Egypt", Submitted to UNDP, Cairo Office, February 2007, 26.
[2] Munich Reinsurance Company (Munich Re), "Annual Review of Natural Disasters 2000", (Munich: Munich Reinsurance Group, 2001).

onset" disasters is even greater in scale and has more damaging effects than the "sudden-onset" disasters, as will be revealed in the following sections.

It is worth noting that during the research process, specifically for this chapter, the researcher has encountered serious obstruction in data collection due to the scarcity of primary resources on disasters and potential hazards in Egypt due to the sensitivity of the topic. The researcher was denied access to IDSC documents due to their confidentiality that would have been of great use to this chapter, which are *The National Plan to Manage Disasters of Earthquakes in Egypt, The National Plan to Manage Disasters of Flash Floods in Egypt,* and *Emergency Plan to Address Major Fires in Egypt.* The researcher tried to overcome this by relying on a variety of other published primary and secondary sources tackling specific hazards and disasters in Egypt.

Natural Disasters

Natural disasters are "catastrophic events resulting from natural hazards, such as volcanic eruptions, tornados, earthquakes, floods… etc., over which man has no control".[3] In the previous definition of natural disasters, the researcher refutes the latter part of the definition since the statement "over which man has no control" indirectly advocates for a culture of response rather than a culture of prevention, supports humanitarian relief rather than risk-sensitive development agenda, and is not gender-sensitive; the researcher prefers to replace it with this phrase "over which humans have limited control". Despite the fact that the numbers of natural hazards events has not increased in recent decades in Egypt, the numbers of natural disasters, in terms of losses, have increased rapidly in Egypt. Natural disaster risks is a combination of the factors that determine the potential for people to be exposed to

[3] Shaluf, Ibrahim M. ,"Disaster Types", *Disaster Prevention and Management*, Vol. 16, Issue 5 , 2007, 688.

particular types of natural hazards; it depends primarily on how social systems and their associated power relations impact on different social groups (through their class, gender, ethnicity, etc.)[4]. In other words, to understand disasters we must not only examine the natural hazardous events that might affect people, but also explore the different levels of vulnerability of different groups of people, which is determined by social systems and power and not solely by natural forces[5]. The question is what are the "dynamic pressures" that increase society's vulnerabilities to natural hazards in Egypt?

There are a number of pressures that contribute to increased vulnerability to natural hazards, one of which is rapid urbanization. There is a wide consensus in the literature that rapid urbanization is a major factor in the growth of vulnerability, particularly of low-income families living within squatter settlements[6]. It is argued that rapid urbanization has been a major driver for the expansion of megacities and for the proliferation of informal housing quarters in hazardous places, which are highly vulnerable to disaster.[7] This movement of large numbers of people to urban cities is particularly critical in the case of mega-cities since the urbanization process results in land pressure as migrants from rural areas move into already overcrowded cities and these new arrivals have no alternative other than occupying unsafe land, constructing unsafe houses, and working in unsafe environments[8]. According to Blaikie et al. (1994), "there is a consensus that urbanization has contributed considerably to the severe losses of certain urban earthquakes for recent years."[9]

---

[4] Wisner, Ben et al., (2004), 7.
[5] Ibid.
[6] Ibid.
[7] World Bank, (2003), "Building Safer Cities: The Future of Disaster Risk", 152.
[8] Wisner et al. (2004), 70.
[9] Blaikie, Piers et al., (1994), *At Risk*, 30.

With regard to Egypt, rapid urbanization might be attributed to the increase in population's vulnerabilities. According to the UN Department of Economic and Social Affairs Population Division, Cairo-Giza is a "mega city" and among the twenty largest cities in the world located in hazard prone areas with a population of around 10 million in 1996 and a projected population of around 15 million in 2015[10]. In 1950, the urbanization rate in North Africa was the highest in Egypt at 31.9 % and it will continue to increase to reach an expected 54.4 % by 2030[11]. Among the 30 largest urban agglomerations in 1950, the city of Cairo was one of them at number 25 with 2.410 million. Cairo grew by 5-folds in 2000 and was number 20 with 9.462 million, and by 2015 Cairo will be number 18 with 11.531 million[12]. This rapid urbanization increases Cairo's vulnerability to natural hazards such as earthquakes, floods, and storms. Another example is *Shubra el Kheima* in Egypt, which grew by 25-fold; it had 0.04 million in 1950, grew to 0.94 million in 2000, and is estimated to reach 1.23 million in 2015[13].

The following tables summarize natural disasters that occurred in Egypt in the past ten years. Despite the low level natural hazards in Egypt, natural disasters' impacts are tremendously increasing. It should be noted that this study do not classify landslides and epidemics as "natural disasters" but as "hybrid disasters" as will be shown in subsequent sections. The two main natural disasters in Egypt in the past two decades were the 1992 earthquakes and the 1994 flash floods that resulted in severe livelihoods losses of the affected populations. The following sections will examine the scope, causes and consequences of these two main natural disasters in order to identify vulnerability trends and government risk intensifying patterns.

---

[10] Ibid.
[11] World Bank ,(2003), "Building Safer Cities: The Future of Disaster Risk", 154.
[12] Ibid, 155.
[13] Ibid.

Table 1: Top 10 Natural Disasters in Egypt (1999- 2008)

Disaster	Date	No Killed
Mass movement dry	6/9/2008	98
Epidemic	1/1/2006	15
Flood	20/12/2002	14
Storm	22/01/2004	13
Flood	3/3/2002	4
Extreme temperature	Jan-2000	3

Source: EM-DAT. Available at: http://www.em-dat.net. Accessed on 15/11/2008

Table 2: Top 10 Natural Disasters in Egypt (1999-2008) by numbers of affected people

Disaster	Date	Total Affected
Flood	3/3/2002	800
Mass movement dry	6/9/2008	697
Earthquake	24/08/2002	250
Epidemic	10/6/2004	120
Extreme temperature	Jan-2000	105
Flood	20/12/2002	70
Storm	22/01/2004	42
Epidemic	1/1/2006	23

Source: EM-DAT: The OFDA/CRED International Disaster Database. Available at: http://www.em-dat.net. Accessed on 15/11/2008

Table 3: Natural Disasters in Egypt (1975 - 2001) by numbers of affected people

Total		Earthquakes		Floods		Windstorms	
Killed	Affected	Killed	Affected	Killed	Affected	Killed	Affected
1,386	280,342	571	34,998	673	229,868	51	15,071

Source: EM-DAT: The OFDA/CRED International Disaster Database. Available at: http://www.em-dat.net

a. Earthquakes

Scope

Despite the fact the Egypt is not a highly seismic country; earthquakes are potential hazards in Egypt. Earthquakes history extends back to 2800 BC, since Egypt is located near a number of major plate tectonic boundaries that generate significant seismic activity.[14] The most active plates are concentrated in the North of Egypt, which makes the vulnerability to earthquake hazard the most at the North-East and the

[14] Degg M., "The 1992 'Cairo earthquake': Cause, Effect and Response", *Disasters*, Volume 17, Issue 3, (1993), 227.

least in the South-West.[15] An IDSC report revealed an increase in the total number of earthquakes over the past years; the report uncovered that the number of earthquakes rapidly increased from 240 earthquakes (1900 – 1980) to 2718 earthquakes (1981-1997), and again a rapid increase to 8588 earthquakes (1998- 2004)[16]. This reveals an alarming increase in the frequency of seismic hazard and if magnified by increased vulnerabilities, a catastrophe would eventually occur. The October 1992 earthquake at Dahshur, 45 kms to the Southwest of Cairo, has affected Cairo, El Fayoum, Beni Suef, Giza and Qalyubiya and was the second biggest[17] natural disaster in Egypt.

Consequences

Although the magnitude of the earthquake was relatively weak, there were a large number of human losses and damages due to the increase in vulnerability of affected populations. With regard to the 1992 earthquake impact, it had resulted in an estimated 561 deaths, 9,929 injuries and 40,000 homeless[18]. The government stated that around 5,000 houses collapsed and 11,540 damaged and estimated that total damage to be around 500 million LE.[19] However, *Munich Re*, one of the largest reinsurance companies that compile international statistics on disasters, estimated that the socio-economic damage amounted to US$1,200 billion[20]. The earthquake had severly affected Cairo, Bulaq one of Cairo's most densely populated districts was among the worst part affected by the earthquake, resulting in high number of people left homeless[21]. In addition, the earthquake resulted in the disruption of livelihoods. For example, a nationwide survey reveled that 1,087 schools were damaged, 3,569

[15] Ibid.
[16]IDSC, "Annual Report of Major Disasters in Egypt during 2007", (in Arabic), Crisis and Disaster Management Department, January 2008, 75.
[17] The first being the 1994 flash floods in Upper Egypt, see the following sub-section in page 74.
[18] The Government of Egypt, "National Report and Information on Disaster Reduction", The World Conference on Disaster Reduction in Kobe-Hyogo, Japan, 18-22 January 2005.
[19] Riad, Samir, "Report on Disaster Risk Management in Egypt", 30.
[20] Munich Reinsurance Company (Munich Re), "World Map of Natural Hazards", (Munich: Munich Reinsurance Group, 1998).
[21] Degg, M., "The 1992 'Cairo earthquake': Cause, Effect and Response", 229.

require intensive reconstruction, and 2,301 were in need of restoration.[22] If the government had invested in educational infrastructure in the first place, school buildings would not have been so vulnerable to earthquakes (i.e. physical vulnerability).

Causes

A study formulated, after the 1992 earthquake, revealed that the level of seismic hazards is relatively high in densely populated areas in Egypt, which can directly affect the socio-economic development of Egypt[23]. This increase in seismic risks is attributed to an increase in people's vulnerabilities. One of the factors that increase the society's vulnerability to seismic hazards is rapid urbanization. Hewitt examined the literature on earthquake impacts and found that urbanization was closely related to damage to once-new multi-storey buildings and to the concentrated illegal poor housing of squatter settlements. This situation was typified in the 1992 earthquake in Egypt, in which two high-rise buildings collapsed in Cairo, as well as the destruction of Islamic monuments, and entire rural villages in Fayoum governorate, near to the damages. In addition, a study compared the 1992 earthquake in Egypt with an earthquake in Japan with same magnitude, it was found out that the Egyptian earthquake far exceeded the Japanese one in terms of human losses, injuries and livelihoods destruction[24]. The Japanese earthquake did not result in any casualties, which is mainly attributed to the low level of vulnerability among the Japanese population with respect to seismic hazards compared to the high vulnerabilities of the affected population in Egypt[25]. In epicenter of the earthquake, suffered severe Egypt, the high costs of the 1992 earthquakes were mainly attributed

[22] Ibid, 231.
[23] A. El-Sayed, Vaccari, F. and G. F. Panza,"Deterministic Seismic Hazard in Egypt", *Geophysical Journal International*, Volume 144 , Issue 3, (2001), 555.
[24] Degg, M., "The 1992 'Cairo earthquake': Cause, Effect and Response", 230.
[25] Ibid.

to rapid urbanization with respect to the damage of houses in shanty settlements and to corruption with respect to the destruction of multi-story buildings.

Another factor that increases the physical vulnerabilities to earthquakes is the poor land use and inadequate enforcement of planning, design and building standards.[26]For example, according to the Housing Committee at the Parliament, there are 850,000 units in Egypt that there life spam has ended, 102,000 unimplemented demolition decisions, and 2 million buildings that are likely to fall[27]. Natural disasters are the monitors of development; the 1992 earthquake disaster exposed the shortcomings of preceding development failures. What the development process has done or failed to achieve in previous decades was exposed in the 1992 disaster aftermath as the "debt of development… disasters are the unpaid bills"[28], in which the affected populations is placed in a vicious cycle of underdevelopment.

In addition, cultural factors play a major role in shaping vulnerabilities. A case study was carried out by Jacqueline Homan in 2001 to understand the socio-cultural contextualization of earthquakes in Egypt by interviewing 136 community members close to the earthquake epicenter[29]. The field work was conducted in five communities in Gerza, Barnasht, EL Gamaleyya, central Cairo and El Kattamia. The survey aim was to come up with a bottom-up mitigation approach that is culturally sensitive by reviewing people's perceptions. The study revealed a science - religion interface by detecting people's concerns toward the 1992 earthquake. The respondents were asked to discuss their general experiences, give explanations on the reason

---

[26] Buckle, Philip, "Building Partnerships for Disaster Risk Reduction and Natural Hazard Risk Management", Preliminary Regional Stocktaking of Natural Hazard Risk and Disaster Management Capacity in the Middle East and North Africa, World Bank and UN/ISDR, 14 April 2007, 5.
[27] IDSC, "Annual Report of Major Disasters in Egypt during 2007", (in Arabic), Crisis and Disaster Management Department, (January 2008), 76.
[28] Lewis, James, *Development in Disaster-Prone Places*, 146.
[29] Homan, Jacqueline, "Social Construction of Natural Disaster: Egypt and the UK", in Mark Pelling (ed.) *Natural Disasters and Development in a Globalizing World*, 146.

behind the occurrence of the earthquake, explain the reason behind high impact of the earthquake in terms of damage and disruption, and discuss how scientist can play a role in limiting the effects of such disasters[30]. The dominant perception of interviewees, 116 out of 136 respondents, revealed that the 1992 earthquake is an "act of God", "everything comes from God", and is "due to the anger of God due to the behavior of people"[31]. Another respondent from Kattamia argued that "the earthquake was related to God; I heard that it is in the nature of the ground to crack and lead to earthquakes in the Fayoum region, but I don't believe this myself."[32] The study attributes the reluctance of vulnerable populations in the Egyptian society to accept scientific explanation is that indigenous population are denied access to scientific information on the basis that they will violate local culture, which lead to their marginalization and disempowerment[33]. The author argues that the origins of cultural vulnerabilities must be studied carefully before attempting to implement any mitigation efforts in order to ensure that they are culturally sensitive.

b. Floods

Scope

According to the Crises and Disaster Department (CMDR) at IDSC[34], floods are regarded as the only potential natural hazard that can lead to a catastrophe in Egypt. Flash floods occur in Egypt every couple of years. The most vulnerable governorates to floods risks are the governorates of North and South Sinai and Upper Egypt governorates (Beni Suef, Minya, Assiut, Sohag, Qena, Aswan, and City of Luxor). Flash floods occurred in Egypt in 1972, 1979, 1991, 1994, 1995, 1996, 1998

[30] Homan, Jacqueline, "A Culturally Sensitive Approach to Risk? 'Natural' Hazard Perception in Egypt and the UK", *Australian Journal of Emergency Management*, Vol. 16, No. 2, (2001): 15.
[31] Homan, Jacqueline, "Social Construction of Natural Disaster: Egypt and the UK", 145.
[32] Homan, Jacqueline, "A Culturally Sensitive Approach to Risk?", 15.
[33] Ibid, 16.
[34] CMDR. Available at: http://www.crisismanagement.idsc.gov.eg/Crisis/default.aspx

and 2008. In addition to the current floods hazards in Egypt, the 2008 UNDP HDR entitled *Fighting Climate Change: Human Solidarity in a Divided World* revealed that six million Egyptians could be affected by flooding as a result of global warming in the coming decades.

Consequences

Most of the flash floods that occurred in Egypt had led to massive losses in lives, houses, lands, livelihood resources, livestock, and damage in infrastructure. The worst natural disaster during the past fifteen years was the November 1994 flash floods in Upper Egypt. The 1994 flash floods affected 134 villages[35] in Assiut, Sohag, Qena and Luxor where 600 killed, 302 injured, 140,000[36] became homeless, 11,148 houses destroyed and 11,085 buildings damaged.[37] In Asyut and Sohag, 31 schools have been completely destroyed.[38] In addition, 24,000 feddans of agricultural land were destroyed and thousands of livestock were dead, which severely affected the livelihoods of affected population. It was estimated that 160,000 persons were affected from the 1994 floods, and the total economic losses were estimated to be 140,000 US$[39]. Most of the deaths were not a direct result of the floods but the consequence of an electrical fire that ignited a fuel depot (eight fuel tanks) in Drunka in Assiut governorate, in which ignited fuel swept through Drunka on the flood waters. The flood situation was compounded at Drunka by leakage of fuel as a result of explosion in depot tanks; the burning oil gushed through the village on top of the floodwaters igniting timber houses along its path. A lot of people were trapped inside

[35] United Nations Department of Humanitarian Affairs, "Egypt - Floods November 1994", UN DHA Situation Reports, ReliefWeb, November 1994.
[36] Ibid.
[37] Riad, Samir, "Report on Disaster Risk Management in Egypt", 32.
[38] United Nations Department of Humanitarian Affairs, "Egypt - Floods November 1994".
[39] IDSC, "Annual Report of Major Disasters in Egypt during 2007", (in Arabic), Crisis and Disaster Management Department. (January 2008): 50.

their burning houses while others ran out into a burning river. This incidence alone results in 475 deaths[40], 200 injuries[41], and around 20,000[42] became homeless.

Causes

There are several risks that increase vulnerability to floods in Egypt. The primary factor is that the GoE still perceives floods risks from a "physical hazard agent" perspective, in which they are "natural" hazardous events that are dealt with through "structural technical" solutions such as early warning systems and the construction of drainage basins. According to the IDSC "Annual Report of Major Disasters in Egypt during 2008", the primary cause of flash floods in Egypt is heavy rain, which result in the assembly of huge amounts of rain waters in small valleys that gather force and momentum during its journey to the main valley[43].

The GoE does not tackle the underlying socio-economic processes which create conditions of risks when dealing with the causation of flash floods since, for example, vulnerable communities in Upper Egypt settle in illegal flash flood prone areas without government intervention. Dr. Mahmoud Abu Zeid, revealed in *Al Dostour* news paper that governorates North of Assiut in Upper Egypt is at very high risk of flood disasters due to the increase in the rain levels on one side and the prevalence of high vulnerabilities on the other side; he adds that most of the flood drainage basins were transformed to agriculture land and were inhabited by large populations in shanty settlements[44]. The CMDR stated in the "Interim National Progress Report on the Implementation of the Hyogo Framework for Action that "one of the lessons learnt from the 1994 flash floods was to prevent construction of

[40] Ibid.
[41] Ibid.
[42] Riad, Samir, "Report on Disaster Risk Management in Egypt", 26.
[43] IDSC, "Annual Report of Major Disasters in Egypt during 2008", (in Arabic), Crisis and Disaster Management Department, (December 2008): 47.
[44] Al Dostour, "Specialist Warns from the Dangers of Floods in Egypt", (14 September 2008):4.

settlements in hazard prone areas most affected by flash floods"[45]. However, this did not take place 15 years after the devastating 1994 floods.

The issue of flash floods in normally high on the political agenda shortly after the disaster takes place and then gradually its importance fade away and the issue is ignored until the same disaster occurs after couple of years, which put it again on the government's agenda[46]. Moreover, the government often redistributes the allocated funds for floods prevention to perform engineering structural measures (such as the construction of drainage basins, sand dunes, and dams) and non-structural measures (such as raising awareness among vulnerable populations) to other overriding development priorities since floods are not perceived by decision makers as a priority issue except when the disaster takes place[47]. Another factor is the lack of flood experts at the local level; most of flood expertise and technical knowledge are concentrated at the central level[48]. An IDSC report acknowledged the failure of the Ministry of Water Resources and Irrigation to engage the local communities in their efforts to disseminate important technical information on for example underground water to local communities[49]. In addition, the lack of coordination between weather monitoring agencies, early warning authorities and vulnerable populations is also lacking[50]. All these factors contribute to the high costs of floods and the increased disruption of livelihoods. This increased vulnerability to floods have affected the development process in Egypt, however there is no official data available on this regard. The researcher will attempt to link these impacts with attaining the MDGs in the following sections.

---

[45] The Government of Egypt, "Interim National Progress Report on the Implementation of the Hyogo Framework for Action".
[46]IDSC, "Annual Report of Major Disasters in Egypt during 2007", 53.
[47] Ibid.
[48] Ibid.
[49] Ibid, 55.
[50] Ibid.

Human-made Disasters

Human made hazards, also known as technological hazards, are the negative consequence of human innovation that can result in harm or the destruction of life, property, and the environment[51]. Technological hazards differ from natural hazards in the sense that societies have chosen to assume technology's associated risks in exchange for some realized benefits[52]. Egypt has witnessed an increase in the number of human-made disasters such as transportation accidents (Traffic accidents, Maritime accidents and Trains), and fire disasters as a result of human-induced practices during the past fifteen years. This section will examine transportation accidents due to its intensity and huge losses as well as fire accidents due its socio-economic impacts.

a. Road Accidents

Scope

With regard to traffic accidents, according to the IDSC *Annual Report of Major Disasters in Egypt*, road accidents are ranked the first in the list of human-made disasters that occurred in 2008 in terms of human losses.[53] There is an alarming increase in the number of people killed, number of injured and number of accidents from 1990 till 2007. IDSC affirms the seriousness and intensity of traffic accidents in Egypt since it result in enormous human losses as well as material damages. According to an IDSC report entitled *Road Accidents in Egypt*, there were around 22,000 road accidents in Egypt in 2007 compared to 19,000 accidents in Egypt in 2006, which amounts to an increase of 16.7%[54]. According to the IDSC 2008 Disasters Report, it estimate the number of traffic accidents to be 18,701 in 2008, however this decrease in the numbers of traffic accidents might not reflect an accurate

[51] Coppola, Damon P., *Introduction to International Disaster Management, (*UK: Elsevier, 2007), 80.
[52] Ibid.
[53] IDSC, "Annual Report of Major Disasters in Egypt During 2007", 5.
[54] IDSC, "Road Accidents in Egypt", (September 2008), 4.

picture since these figures only reflect the numbers of accidents IDSC received from the different operation rooms at the governorate level.

Consequences

According to official figures, the number of people killed in road accidents in 2008 and 2007 are 4,651 and 4,244 respectively.[55] What is even more alarming is that the percentage of people killed increased by 36.7% from 1990 till 2007[56]. According to the IDSC, the number of injuries from traffic accidents is 43,616 in 2008 alone[57]; this figure might be a modest estimate since it only reflects the reports received from the governorates' operation rooms. Moreover, it is also interesting to notice that some of the government official figures are not consistent with each other, which is an indicator of lack of transparency, which downplays an important dimension of good governance. Ironically, the same entity, which is the IDSC, published two reports in 2008 with different figures of the number of injured in road accidents in 2007. One report revealed that there was a 13.2% increase in injured people in 2007 (around 30,000 in 2007 compared with 26,000 in 2006).[58] While the other report stated that the number of injured people was 43,382 in 2007[59], which means that there is an alarming 66.8 % increase and not a mere 13.2%. With regard to the loss in assets, around 20,000 cars had fatal damages in 2007 compared with 9,000 cars in 1990, which is an increase of 106%.[60] These official figures are just an indicator to reveal the intensity of the situation and are not accurate figures. The IDSC in its *Annual Report of Major Disasters in Egypt in 2007* acknowledged that number are not the exact figures since the IDSC publishes these figures based on the notifications it

[55] IDSC, "Annual Report of Major Disasters in Egypt during 2007": 5 and IDSC, "Annual Report of Major Disasters in Egypt during 2008": 17.
[56] IDSC, "Road Accidents in Egypt", 4.
[57] IDSC, "Annual Report of Major Disasters in Egypt during 2008", 17.
[58] Ibid.
[59] IDSC, "Annual Report of Major Disasters in Egypt during 2007", 5.
[60] IDSC, "Road Accidents in Egypt", 4.

receives at the central emergency room at IDSC; IDSC continues to declare that figures might be higher since there is no binding mechanism the oblige emergency rooms at the governorates to report the accidents to the IDSC emergency room[61].

Causes

The GoE is also dealing with traffic accidents as "events beyond its control". Road accidents are still considered by government officials as a matter of "fate", "act of God", "unavoidable consequence of modern life", and/or "unavoidable-cost-of development". The primary cause behind the increase in road accidents can be attributed to the physical vulnerability of transportation infrastructure in Egypt caused by rapid increase in the number of vehicles that is not matched by adequate transportation infrastructure (roads, high ways, bridges…etc). According to the IDSC Annual Disasters Report for 2008, the "indirect causes of road accidents can be attributed to the rapid increase in the number of vehicles and the lack of development of the road infrastructures that have the enough capacity to match this increase"[62]. In addition, the report revealed that most of the roads do not abide by international safety regulations and standards[63]. Poor urban planning and poorly maintained roads lead to congestion, speeding, and dangerous "black spots" that are characterized by frequent accidents. In addition, the physical vulnerability of transportation infrastructure can be attributed to failure of good governance manifested in the prevalence of corruption. For example, a license can be bought with bribes without undergoing a driving test; what is even more alarming is that when a license is ceased it is easily returned for a bribe. In addition, many vehicles are not functional and not properly maintained and still get licensed. Moreover, there is overcrowding on public transportation and especially on minibuses, which are often packed to the brim with passengers

[61] IDSC, "Annual Report of Major Disasters in Egypt during 2007", 38.
[62] IDSC, "Annual Report of Major Disasters in Egypt during 2008", 24.
[63] Ibid.

(sometimes coming out of windows and doors) and driven by young inexperienced drivers without driver's license. All these conditions increase the risks for road accidents, and can be attributed to "failed development".

b. Maritime Accidents

Scope

With regard to maritime accidents, the sinking of Al-Salam Ferry in the Red Sea in February 2006 during a tip from Saudi Arabia to the Egyptian port of Safaga was one of the most catastrophic crises in the past decade in Egypt. According to a study conducted by *Swiss Re,* the world's second largest reinsurance company that publish reports on disasters , the sinking of the Egyptian ferry "Al-Salam 98" off the coast is ranked the fifth worst catastrophe around the world in 2006 in terms of the number of victims[64]. The ship had 1,312 passengers on board and 96 crew members.

Consequences

According to the IFRC, around 400 people were rescued and around 1,069 lost their lives.[65] Most of those killed were poor seasonal workers and peasants who were returning from Saudi Arabia where they were employed as "guest workers," mostly in the low-paid service and construction industries[66]. With an unemployment rate of more than 20 percent, large numbers of Egyptians are forced to support their families by working in Saudi Arabia and other Gulf states. The passengers on the ferry were mostly Egyptian migrant workers, "some of whom were bringing months', if not years', worth of savings to their families back home"[67]. This can reveal the extent of losses in human capital as well as the livelihood disruption of hundreds of

[64] Swiss Re, "Natural catastrophes and man-made disasters in 2006", Sigma Study, 2006.
[65] IFRC, "Egypt Ferry Disaster, " DREF Operational Final Report, ReliefWeb, (2 January 2008).
[66] Ibid.
[67] El Sayyid, Emad, "Egypt Sentences Ferry Owner over 2006 Disaster", *Middle East Times*, (11 March 2009).

Egyptian families as well as the psychological stress endured by families and children, who lost their loved ones.

Causes

According to the IFRC, shortly after the ship's departure, an electrical fire broke out which the crew tried to extinguish with water[68]. The crew used pipes to spray water on the fire; however the fire spread and the crew sprayed more and more water to put the fire out[69]. Gradually the water collected inside Al Salam and flooded the ship [70] . According to the Egyptian special parliamentary commission investigations, the ferry's drains were blocked, causing an accumulation of water which led to the sinking of the ferry; they found out that the ferry's drains had not been inspected by the Maritime Safety Board, the fire extinguisher was not working, and that there was shortage in lifejackets and safety rafts.[71] The 36-year-old vessel was routinely overloaded with passengers and despite being originally licensed in Italy to carry 1,187 people, was permitted to carry up to 2,890 passengers by Egyptian authorities.[72] The overloading of Al Salam ferry, to maximize financial returns, was one of the primary causes of the disasters since it accelerated the tipping of the ferry when passengers panicked and ran to one side of the boat. In addition, the failure of maritime authorities to carry out routine inspections and the inadequate security procedures is an indication of high level of corruption within maritime authorities. This was also verified when the owner of Al Salam, a former member of parliament's upper house, was sentenced in March 2009 to seven years in jail over the sinking of the ferry back in 2006.

---

[68] IFRC, "Egypt Ferry Disaster".
[69] Woods, Michael, *Disasters at Sea*, (USA: Lerner Publications, 2008): 4.
[70] Ibid.
[71] IFRC, "Egypt Ferry Disaster".
[72] Ibid.

c. Train Accidents

Scope

In the 1990s and early 2000s, Egypt has witnessed a large number of train accidents that lead to significant number of people killed and injured. According to an IDSC report, Egypt witnessed 1,203 train accidents only in the year 2000[73]. The report also stated that the numbers of train accidents have decreased by 19% in the year 2004 with 975 accidents compared with 2000, and then increased again to reach 1,231 accidents in 2007 with an increase of 26.3% compared to 2004[74]. The most recent train accident was the July 2008 train accident when a train from Marsa Matruh to Alexandria ran into three vehicles at a rail junction. This is not the first accident of its kind; as shown below train accidents are common phenomena in Egypt rail road accidents. The following is a time line of major train disasters that occurred in Egypt from 1992 till 2008, according to an IDSC Information report[75]:

- **July 2008:** A train from Marsa Matruh to Alexandria smashed into three vehicles at an intersection, killing at least 44 people and injuring 50.
- **August 2006:** Two trains collided (a commuter train with a freight train) in Qalyoub Governorate, where 58 passengers were killed and 140 were injured[76].
- **February 2002:** A train from Cairo to Upper Egypt was set on fire from a passenger stove, killing 373.

- **November 1999:** Train between Cairo and Alexandria hits truck and runs off track, killing 10 and injuring 7.
- **April 1999:** At least 10 people die and nearly 50 are injured in northern Egypt after collision between trains.
- **October 1998:** About 50 people are killed and more than 80 injured when train failed to stop at buffers and ran into a busy market square. Reports suggested that passengers travelling on the roof of the train may have tampered with an air pipe, disabling the brakes.
- **February 1997:** At least 11 people die and 75 wounded after two trains collided.
- **February 1996:** Train hits truck at an intersection killing 11 people.

---

[73] IDSC,"Road Accidents in Egypt", 10.
[74] Ibid.
[75]Ibid, 11.
[76] Associated Press, "Egypt train collision kills at least 58: Commuter trains were headed toward Cairo, more than 140 injured", MSNBC, (21, August 2006), Available at: http://www.msnbc.msn.com/id/14446414/

- **December 1995:** In thick fog a train rams into the back of another, 75 people die. Driver was blamed after findings that the train was travelling well above the speed limit
- **May 1995:** Nine die after train hits a barrier just north of Cairo and derails.
- **April 1995:** A train and a bus collide on a level crossing in Nile Delta, killing 49.
- **December 1993:** At least 12 people die and 60 are injured when two trains collided.
- **February 1992:** Two trains crashed, killing 43 people.

Analysis of major train disasters in Egypt from the above timeline revealed that around 755 passengers have been dead and around 500 have been injured. These figures are a modest indication since they are a rough estimate that only covers the above major train accidents. Train accidents entail a lot of causalities due to the high numbers of passengers as well as the huge magnitude of train accidents, which differ completely from road accidents. Most of the accidents occur as a result of two trains colliding or as a result of a collision of a train and buses and/or cars at intersections. The exact causes behind these collisions will be addressed in following sections.

Consequences

One of the worst train accidents in the history of Egypt was the 2002 Upper Egypt train accident, in which a fire caught up in the train near Al Ayat district. This resulted in 386 deaths and 136 injuries in the year 2002. Moreover, in 2006, there were 278 injuries as a result of the collision of two trains near Qaliub North of Cairo. There are no published data on the accumulated costs in terms of human and financial losses for all train accidents in Egypt in the past decades.

Causes

The previous timeline reveals that many train accidents occur due to collisions at intersections. The *Qatar Raya* news paper published an article entitled *Fifty-Nine Train Accidents in Six Years Killing and Injuring more than 6,000 Egyptians* in August 2006 which states that, according to surveys, road/rail junctions is the primary reason behind 40% of train accidents in Egypt, to the extent that it is named “death

intersections"[77]. Surveys revealed that there are 1,264 road/rail intersections in Egypt with very poor conditions, which constantly lead to disasters. This article was published after the 2006 train accident, when a commuter train collided with a freight train at an intersection. The 2008 train accident also occurred in an intersection, which reflects the lack of preventive measures at the central level, specifically within the concerned sectoral ministry, which is the Ministry of Transportation. In a parliament session after the 2008 train accident, the Minister of Transportation pointed out that "replacing Egypt's 1,261 road/rail junctions with bridges and flyovers would cost at least LE36 billion, far beyond the ministry's budget"[78]. This reflects the lack of financial resources allocated for disaster prevention, which will be explored in depth in chapter 4.

Another reason behind train accidents is the outbreak of fire on board the trains, which gets out of control due to the speeding train that ignites the fire; poor passengers packed into cramped compartments in old crumbling trains on long journeys to Upper Egypt often carry large amounts of baggage, take small animals and prepare their own meals on board the trains using portable gas cookers. This creates conditions of high risk on board trains, which was exactly the case in the 2002 train disaster to Upper Egypt that lead to 373 deaths.

d. Fire Accidents

Scope

Fire accidents are regarded as one of the common and recurrent human-made disasters in Egypt. In March 2009, several large fires swept across the entire nation

[77] Raya News, "59 Train Accidents in Six Years Killing and Injuring more than 6,000 Egyptians", (August 2006), Available at: http://www.raya.com/site/topics/article.asp?cu_no=2&item_no=173008&version=1&template_id=45&parent_id=42

[78] Al Ahram Weekly, "Ministers Deny Responsibility: Deficiencies in National Transport are Again in the Spotlight Following Yet Another Tragic Accident", Issue No. 907, (24-30 July 2008), Available at: http://weekly.ahram.org.eg/2008/907/eg4.htm

leaving a lot of destruction and damages in *El Salalmlek* Hotel in Alexandria, Ezbet Bilal in Al-Sharabeya area, Gaziret El-Ward Hotel in Mansoura, the Tunsi Bridge in the Khalifa area in Cairo, in Helwan in *Al Tawheed and Nour* store, and the Tama Elementary school in Sohag also caught fire. The total number of fires that occurred in Egypt in 2008 is an alarming 8,298, according to official figures, compared to only 374 fires in 2007[79]. Some independent sources estimate the number of fires to be 30,000 annually in Egypt. A study conducted by the Centre for Nuclear Security showed that Egypt suffers around 20,000 fires every year if not more. Among the popular fires that occurred in 2008 are the Upper House of Parliament fire and the Balloon Theater fire. Previous years have also witnessed several devastating fires such as the Beni Sweif Theatre fire that left more than 30 dead and more than 35 injured[80].

Consequences

The 2008 fires led to 136 deaths and 1,459 injuries, according to official estimates[81]. The costs of these fires are estimated to reach 400 million Egyptian pounds in 2008, according to a report published by the Nuclear Security Department[82]. The socio-economic impact of disasters is immense since it disrupts population livelihoods since fires can destroy one's shelter or work place. In addition, fires destroy public buildings, government entities, historic buildings, hotels and factories have a direct effect on the national economy due to the huge human and financial losses. Among the fires that took place in 2008, one of them stands out due to its socio-economic, cultural and political significance. The fire of the Upper House of Parliament occurred on the 22nd of August 2008, which lasted for 16 hours. This

[79] IDSC, "Annual Report of Major Disasters in Egypt during 2008", 8.
[80] El-Bey Doaa, "Fires Too Many", *Al Ahram Weekly Online*, 19-25 March 2009, Issue No. 939.
[81] IDSC, "Annual Report of Major Disasters in Egypt during 2008", 8.
[82] Ibid.

disaster not only has a socio-economic dimension, but also has political and cultural dimensions. This disaster resulted in one death, 6 injuries, and the destruction of a 19th century palace, in which the estimated damages are worth 6 million and 800 thousand pounds[83]. With respect to the cultural dimension, this 150 years old building is a loss to Cairo's architectural heritage.

Causes

There is a very dramatic increase in the numbers of fires and their devastating effects; the question is to what these fires can be attributed. The Parliament fire has revealed the lack of the GOE to prevent and reduce the risk of fires in its own strategic premises. The lack of a culture of prevention is one of the primary factors that increase the numbers and the impacts of fires in Egypt, which was clearly revealed during the course of the Upper House of Parliament crisis. "God protect us!" stated Fathi Sorour, the Chair of the People's Assembly, commenting on the reduced number of losses in lives, said in a live interview on *Nile News* television[84]. The reason why the parliament fire did not result in looses in lives is because it took place in the afternoon after employees have left the buildings. Moreover, due to increased corruption among government officials, opposition groups claimed that this fire was carried out deliberately by state security officials to destroy critical documents at the parliament library, where documents for several corruption cases were kept. A former high-ranking state security official, General Fouad Alam, has "suggested that only arson could have been the cause of this fire"[85]. A member of the parliament affiliated with the Muslim Brotherhoods stated "arson is a safe way in

[83] Ibid.
[84] ABC News, "Fire guts Egypt's parliament, injures 10", Reuters, (August 20**,** 2008), Available at: http://www.abc.net.au/news/stories/2008/08/20/2340736.htm
[85] Shenker, Jack, "Conspiracy Claims after Egypt Parliament Fire", *Times Online*, (August 2008) Available at: http://www.timesonline.co.uk/tol/news/world/middle_east/article4602458.ece

Egypt for corrupt officials to get rid of important documents and files"[86]. Headlines of the banned *El Badeel* edition said the fire had destroyed files on recent controversial cases, such as "Al-Salam ferry, contaminated blood case, cancerous pesticides issue and Upper Egypt train accident"[87]. It is interesting to realize that all the documents claimed to be destroyed were all related to recent disasters in Egypt, which reveals that the prevalence of corruption is among disasters-related trends and patterns in Egypt.

With regard to reducing disaster risks, the Parliament fire revealed that the GOE did not carry out structural preventive measures and also failed to implement non-structural measures to prevent and mitigate the impacts of fires. With regard to the structural measures, the daily newspaper *el-Badeel* claimed that the building had no adequate fire-protection systems[88]. In addition, the IDSC argues in a report that the disaster management policies were not adhered to during the course of the crisis. For example, according to the *General Procedures for Crises and Disaster Management Guide,* an inter-ministerial steering committee chaired by the Ministry of Interior was supposed to be formulated in theory , which did not take place[89]. In addition, the *National Plan for Fires Preparedness and Response*, formulated by IDSC and endorsed by the Cabinet on the 7th of February 2008, was not implemented in practice[90]. Also, there was lack of communication; for example, a government spokesman should have been appointed to disseminate necessary information to the public, which lead to the spread of inaccurate information and rumors.

[86] Ibid.
[87] Ibid.
[88] Ibid.
[89] IDSC, "Annual Report of Major Disasters in Egypt during 2008", 13.
[90] Ibid.

Hybrid Disasters

A hybrid disaster is a combination of a natural hazard, human decisions and human-made actions[91]. This category of disasters is somehow subjective since for example some experts regard Avian and Human Influenza as a natural hazard while others perceive it as a human induced hazard. The researcher will argue that AHI is a hybrid disaster, since the origin of the H5N1 virus is natural but improper human practices and behavior is what causes the disaster. In addition, a landslide is categorized by many disaster experts as a natural phenomenon. Despite the fact that the fall of the rock is a natural phenomena, this study will regard it as a hybrid disaster since this natural hazard was magnified by human practices such as the spread of illegal urban settlements in high risks zones close to hazardous places, high population density and crowded living conditions, and the construction of illegal drainage system that affects the soil.

Some specialists argue that almost all of the natural disasters have a human-made causal element in them, however the researcher believes that the primary difference lies in the "rapid onset" character of natural disasters versus the "slow onset" frequent nature of hybrid disasters. Small scale and frequent hazards create conditions of vulnerability, which lead to larger disasters[92]. Hybrid disasters are characterized by a "slow onset nature"; i.e. they start off as small frequent incidents that pass unnoticed and then transform to fully fledged disasters. The recurrence of small scale frequent events known as "slow-onset" disasters is caused by rising vulnerability of affected populations as a result of "failed development", and at the same time these small scale disasters dramatically increases society's vulnerabilities, which result in a vicious cycle that eventually halt sustainable development.

---

[91] Shaluf, Ibrahim M., "Disaster Types", *Disaster Prevention and Management*, 16 (5), (2007): 706.
[92] Lewis, James, *Development in Disaster-Prone Places*, 145.

Attending to frequent slow onset disasters is a preventive strategy for reducing disaster risks and their impacts.

a. Avian and Human Influenza

Scope

The GOE confirmed its first H5N1 outbreak in domestic poultry on 17 February 2006. The first case of the H5N1 human infection was discovered on 15 March 2006.[93] Egypt was the ninth country to report laboratory-confirmed human cases in the current outbreak.[94] According to the WHO, from 15 March 2006 till 20 May 2009, 74 cases were confirmed positive and there have been 27 fatalities.[95] It is interesting to note that out-side Asia, Egypt has had the highest number of human infections and deaths due to the H5N1 virus.[96] More alarming is that between January 2009 and May 2009, Egypt had 23 confirmed cases of H5N1 virus, 4 of which died, which makes Egypt the first on the world in terms of confirmed cases in 2009.[97]

Consequences

According to several reports and studies, it was found out that the socio-economic impact of the Avian and Human Influenza disaster is immense. The following is a brief overview of the AHI impacts that will be deeply examined in my case study. It is estimated that Egypt's total losses due to the deadly strain of H5N1 to be at LE862 million since the disease appeared in Egypt until February 2008 due to the slaughtering 36.8 million birds[98]. Since the first outbreak of bird flu in Egypt

---

[93] Ministry of Health, Government of Egypt, "Comprehensive Approach to Addressing Avian and Human Influenza in Egypt", Submitted to the Fourth International Conference on Avian Influenza Bamako, Mali, (6 to 8 December 2006), 4.
[94] Ibid.
[95] WHO, (Accessed May 2009), Available at:
[96] FAO, "Highly Pathogenic Avian Influenza: A Rapid Assessment of the Socio-Economic Impact on Vulnerable Households in Egypt", 23.
[97] WHO, "Cumulative Number of Confirmed Human Cases of AI", (May 2008), Available at: http://www.who.int/csr/disease/avian_influenza/country/cases_table_2009_05_22/en/index.html
[98] Ministry of Health, Government of Egypt, "Comprehensive Approach to Addressing Avian and Human Influenza in Egypt",4.

in 2006 until the end of 2007, the Ministry of Health and Population has spent LE238 million to provide vaccines for the Avian Influenza virus and launch various types of campaigns to increase people's awareness of the dangers of the deadly strain[99]. The Health Ministry will further allocate an extra LE300 million to combat bird flu in the coming period[100].

Causes

It is worth noting that most positive cases occurred due to direct contact with dead or infected household birds. This reveals that cultural factors play a crucial role in people's vulnerabilities to AHI as a hazard. According to *the Supreme National Committee to Combat Avian Flu,* the primary factor behind the continuous spread of AI is the traditional poultry keeping, i.e. poultry keeping in a household setting, in backyards, or in rooftops. According to a poll conducted by IDSC, in which a sample of 1,102 was surveyed, it revealed that 28% of Egyptians surveyed still raised birds at home[101]. In addition, three-quarters of respondents reported to eat freshly slaughtered poultry.[102] Moreover, 47% of respondents have relatives who raise poultry at home[103]. This reveals that cultural habits can increase people's vulnerability and put them at increased risk of AHI. This cultural issue will be addressed in depth in the case study.

[99] Ibid.
[100] Ibid.
[101] IDSC, "Poll on Citizen's Awareness about Bird Flu in Egypt", *Public Opinion Poll Center*, February 2008.
[102] Ibid.
[103] Ibid, 2.

b. Landslides/Rockslides

Scope

Landslides involve the movement of material (such as rock, mud, soil and sometimes even rubbish) that may vary considerably in its nature[104]. On the 6th of September 2008, a rock slide had took place when at least eight massive rocks fell onto the impoverished Manshiyet Nasser shantytown on the outskirts of Cairo, which lead to 107 deaths[105] , 72 injuries[106], and 100 to150 families lost their houses[107]. This disaster is not the first of its kind; there were two similar events in 1993 and 1994 in the same area, which led to 30 and 70 deaths respectively[108]. In 1993 a 4,000-ton block of limestone rock slide fell on 14 workshops in a slum area of Al-Moqattam, North Cairo[109]. This shows that landslides disasters are recurrent events. Many residents of Manshiyet Nasser revealed that they have reported small rocks falling to the authorities several weeks before the disasters but no one responded. This shows how landslides are "slow onset" hazards that if ignored would turn into a full blown catastrophe.

Consequences

The reoccurrence of such types of frequent slow onset disasters over the years reveals that the culture of prevention is totally lacking within the government. The idea of blaming "nature" and "fate" is still prevailing within decision makers in Egypt. The Minister of Housing responded to numerous acquisitions at the people's assembly by wondering why people do not believe in fate. He stated that these

[104] Blaikie et al., 182.
[105] IDSC, "Annual Report of Major Disasters in Egypt during 2007", 77.
[106] IFRC, "Egypt: Cairo Rockslides", ReliefWeb, (25 September 2008).
[107] Ibid.
[108] IDSC , "Annual Report of Major Disasters in Egypt during 2007", 77.
[109] Riad, Samir, "Report on Disaster Risk Management in Egypt", 26.

families whom their houses were destroyed were supposed to move to Suzane Mubarak housing project in a week times but “fate did not give them the chance”.

Causes

When trying to examine the vulnerabilities associated with landslides, we need to move beyond the immediate physical hazard and inquire about human activities that act as triggers for the physical event[110]. The spread of slums that are characterized by high disasters risks are primarily a result of rapid urbanization associated with the rapid influx of poor rural migrant looking for jobs[111]. It is widely recognized in the literature that slum residents often incur greater risks from hazards, especially landslides or mudslides, as a result of having to live in very closely-built structures, which can disturb natural land drainage patterns and watercourses[112]. Manshiyet Nasser is described as "the largest squatter area" in Cairo, in which 350,000 people live in the area on about 850 acres, a density of more than 400 persons per acre, according to a survey carried out by UN Habitat. The 2008 rockslide in the case of Egypt was the result of human induced practices, which is the spread of illegal urban settlements characterized by increased vulnerabilities such as poverty, high population density, and crowded living conditions close to hazardous industry or in places exposed to natural hazards.[113] The UN Habitat report stated that "the area is suffering from poor living qualities, inadequate services, and lack of infrastructure and deteriorated environmental conditions".

To conclude, it is apparent how deep rooted vulnerabilities in the Egyptian society magnify hazardous events and lead to increased disasters; it is also evident that poor policy initiatives such as allowing high density population concentrations in

[110] Blaikie et al., 182.
[111] UN HABITAT, “ The Challenge of Slums”, (London: Earthscan, 2003): 64.
[112] Ibid, 38.
[113] Pelling, Mark, “Urbanization and Disaster Risk.” Cyber Seminar on Population and Natural Hazards, Panel contribution to the Population-Environment Research Network, (November 2007), 1.

flood plains and in landslide hazardous zones, having unenforced earthquakes building codes, providing inadequate floods warnings, having poor transportation infrastructure, and not addressing the vulnerabilities associated with poultry raising in household settings are far more important than dealing with the hazard agent itself. The following section will deal with the relation between the prevalence of disasters and livelihoods sustainability.

DISASTERS AND LIVELIHOODS IN EGYPT

This section will provide an analysis of the impact of disasters on communities' livelihoods. However, this goal was met with several challenges given the scarcity of data and resources on the impact of disasters on the development process in Egypt. First, there is a lack of primary data that link the socio-economic impacts of disasters to the stagnation of the development process in Egypt. Another constraint was the limited secondary studies and reports on the relation between disasters and livelihoods in Egypt. This section is a modest attempt to examine the impact of recent disasters on vulnerable communities' livelihoods and on sustainable human development in Egypt, based on the available resources.

In Egypt, disasters can disrupt the functioning of a community causing extensive human, social, material, economic and environmental losses which exceed the capacity of the affected people to cope using their own resources. Disasters in Egypt destroy livelihood assets and thus lead to the failure of attainment of livelihood outcomes. For example, all sorts of disasters examined earlier can destroy or disrupt livelihood assets such as homes, land, crops, live stocks …etc. Disasters interrupt the income of poor people by affecting their daily food production, which is self-consumed and/or sold for income. This was the case with the AHI crisis, in which the crisis drastically affected the food production of poor households that rely on

domestic poultry as a source for cheap protein, as will be shown in my case study. Also, disasters can affect the micro-income generating projects of the poor as with the case of CRS project discussed later in chapter 5. Moreover, public facilitates and services are also vulnerable to the damaging effects of natural disasters. This often affects vulnerable populations since the destruction of essential infrastructure such as roads, schools and heath facilities (physical capital) result in poor human capabilities on the long term. After the 1992 earthquake, the education process was disrupted in Egypt due to the destruction of schools; this disruption lasted for years.

Disasters exert an enormous challenge on achieving sustainable livelihoods and thus would pose a significant threat to the prospects of achieving the Millennium Development Goals (MDGs). The UNDP emphasized in 2004 in its report entitled *Reducing Disaster Risk: a Challenge for Development* that: "Meeting the MDGs is extremely challenged in many communities and countries by losses from disasters triggered by natural hazards."[114] Not only do disasters affect MDG1, disasters hinder achieving all other MDG targets. The two *MDGs Midpoint Assessment Reports* (2004 and 2008) formulated by the Ministry of Economic Development did not refer to disaster risk in the reports. The two reports failed to address any disaster impact that occurred in Egypt and link it to sustainable livelihoods; the reports did not even recognize the risk of disasters as one of the challenges faced by government in its progress towards achieving the MDGs. The question is: can disasters set back the progress towards achieving the eight Millennium Development Goals in Egypt?

With respect to MDG1 (eradicating extreme poverty and hunger), the direct impact of disaster would be income and capability deprivation. According to an IDSC report, flash floods, the most serious natural hazard in Egypt, affects mainly Upper

[114] UNDP, "A Global Report: Reducing Disaster Risk: a Challenge for Development", (Geneva: UNDP Bureau for Crisis Prevention and Recovery, 2004): 9.

Egypt and Red Sea governorates almost every year with varying scale and intensity[115], which raise questions about the linkage between the recurrence of floods disasters and the human development status of these governorates. It is also interesting to link this to a report published by the World Bank and formulated by the Ministry of Economic Development, which reveals that poverty is concentrated in Upper Egypt Governorates; there is a particular concentration of poor in the rural Upper Egypt region, which accounts for 66 % of the extreme poor in the country, 51 % of its poor, and for 31 % of the near poor, far exceeding its 25 % population share[116]. The direct correlation between the huge impacts and devastation of floods and the increased incidence of poverty in Upper Egyptian governorates should be further investigated.

With regard to MDG2 (achieve universal primary education), the direct impact of disasters would be that educational infrastructure will be damaged and destroyed, and thus the indirect impact would be the disruption of the education process for students. L. Herrera argues that natural disasters have contributed to the problem of deterioration of school facilities, in which a number of schools suffered structural damage in Greater Cairo in the wake of the 1992 earthquake[117]. She also adds that flooding in Upper Egypt in recent years has also taken its toll on schools[118]. A nationwide survey reveled that 1,087 schools were damaged, 3,569 require intensive reconstruction, and 2,301 were in need of restoration.[119] After the 1992 earthquake, the total destruction and damage of schools have lead to a shortage in safe school buildings, in which many of them are used for multiple shifts up till now resulting in

[115] IDSC, "Annual Report of Major Disasters in Egypt during 2008", 49.
[116] Ministry of Economic Development, Government of the Arab Republic of Egypt, “Arab Republic of Egypt: Poverty Assessment Update”, The World Bank, Volume 1, (September 2007).
[117] Herrera, L., “Participation in School Upgrading: Gender, Class and (In)action in Egypt”, *International Journal of Educational Development,* Volume 23, Issue 2, (March 2003): 187.
[118] Ibid.
[119] Ibid, 231.

further reduction of the daily school schedule. This disruption of the education process and the overcrowding of students in classes will jeopardize the quality of education, which will directly affect the human capital of future generations.

With regard to empowering women (MDG3), women are one of the most vulnerable groups in the Egyptian society with respect to disasters risks. More women have died and have been injured than men in the 1992 earthquake[120]. In addition, most of the AHI fatalities are among women. It is interesting to note that among the 74 confirmed cases of AHI, there are around 20 positive female cases (above 18 years old), 16 of which died. In addition, AHI is a major challenge that would hinder Egypt's efforts to meet MDG4 (reducing child mortality) since 50 out of 74 cases are children (under 18 years old); this is attributed this to their unawareness of the danger of playing with infected birds at their back yards. In addition, AHI increased the financial burden of the Ministry of Health by providing stocks of tummy flu vaccination, which will affect its capacity when combating HIV/AIDS and other diseases (MDG 6). With regard to MDG 7(ensuring environmental sustainability), the unsustainable land-use patterns such as settlement in hazardous areas, the over-exploitation of natural resources, and deforestation can trigger disasters like landslides or floods, which was the case in landslide that took place in Manshiyet Nasser.

To conclude, the exploration of all these diverse disasters in Egypt reveals that there are certain patterns that take place during and after disasters. In almost all disasters, the poor are the ones who are mostly affected by disasters. Moreover, another pattern observed was the lack of government responsiveness before, during and after crisis. The following chapter will be examining the ineffective institutional arrangements and legal framework that deal with disasters in Egypt.

---

[120]Malilay, J. et al., "Mortality and Morbidity Patterns Associated with the October 12, 1992 Egypt Earthquake", *Earthquake Spectra*, 11(3)1995:457- 476.

CHAPTER 4

ANALYSIS OF CURRENT DISASTER ARRANGMENTS IN EGYPT

INTRODUCTION

This chapter will examine the legal framework and the institutional arrangements within the GOE at the strategic, central, and local levels that deal with disasters in order to examine whether these mechanisms are capable of reducing disaster risks, by managing hazards risks and addressing related vulnerabilities. This chapter will tackle the following questions: what are the current laws dealing with disaster management in Egypt? How do they relate to DRR? What are the governmental bodies that are mandated to deal with pre-disaster planning? What are their functions? Are they efficient? This chapter will particularly examine the mandate of the Crisis and Disaster Management Department (CMDR) at the Egyptian Cabinet Information and Decision Support Center (IDSC), since it is the focal point for DRR in Egypt on the national level. The main postulation, for this chapter, is that institutional vulnerability is prevailing within the GOE since there is no entity in the national government legally responsible for orchestrating DRR policies and programmes and integrating it into development planning in Egypt. The lack of adequate legislation and institutions, mechanisms, and processes for DRR in the GoE is an indicator for the lack of political will.

According to a *Preliminary Regional Stocktaking of Natural Hazard Risk and Disaster Management Capacity in the Middle East and North Africa* by the World Bank and UN/ISDR, it was observed that “arrangements within most MENA countries exist for emergency management and are organized and coordinated at a national level, either

through a specially constituted agency or through the office of the Prime Minister or President"[1]. The report added that "these are typically arrangements for dealing with response activities, that is actions directed at containing and controlling the hazard event, immediate protecting life and critical property and with the short term aftermath of humanitarian aid, and maintaining public safety."[2] This observation totally corresponds to the Egyptian case since all the current laws, policies and processes only deal with the "physical hazard" creating disasters risks and neglect the causal vulnerabilities that magnify these hazardous events.

The governmental entities dealing with disasters in Egypt only perform unsystematic short-term post disaster emergency management. In practice, the way in which the GoE is presently managing a crisis is to assign a *Supreme Inter-Ministerial Disaster Committee* headed by the Minister of the directly involved ministry and number of relevant ministries as members to handle the disaster after it takes place. This approach was applied in the case of Avian and Human Influenza crisis, Al Salam Ferry disaster, Train accidents, and recently in the Swine Flu disaster (Influenza A/H1N1). However, in *Magles El Shaab* (Parliament) Fire, this committee was not even formulated, which reveals the lack of consistency and that the government deals with disasters on an *ad-hoc* basis without conforming to the guidelines laid out in the IDSC's Manuel entitled *General Procedures for Crisis and Disaster Management*. This Manuel explains that the Prime Minister should be notified when a disaster reaches the "red/very high level", which means that there are more than 20 deaths and 50 injures, more than 5 million LE in losses and/or the occurrence of extraordinary disasters that are not frequent in strategic or

[1] Buckle, Philip, "Building Partnerships for Disaster Risk Reduction and Natural Hazard Risk Management", 15.
[2] Ibid.

public locations and the PM would then form the *Supreme Inter-Ministerial Disaster Committee* to handle the situation.[3] The following section will examine all the relevant regulations with respect to disasters, and whether they lay the foundation for a DRR strategy or not.

LEGAL FRAMEWORK

Legislation provides the framework around which DRR strategies can be incorporated into the design of development projects and activities. The Hyogo Framework for Action (HFA), a 10-year global blue print for DRR, identified legislation as an essential component in moving towards a comprehensive and mainstreamed DRR approach. Unfortunately, the legal framework that currently exists in Egypt deals with post-disaster arrangements (disaster response and relief). These laws and decrees have been inaccurately affiliated with disaster risk reduction due to the novelty of the term among policy makers in Egypt. The following are laws and decrees that regulate disasters in Egypt, according to a report submitted to the UN World Conference on Disaster Reduction(WCDR) in Hyogo in 2005[4]:

[3] IDSC, "Manuel: General Procedures for Crisis and Disaster Management", (in Arabic), Crisis and Disaster Management Department, (August 2006): 15-16.
[4] The Government of Egypt, "National Report and Information on Disaster Reduction".

Table 4: Current Crisis and Disaster Management Laws in Egypt

Laws	Main objective
Law 148/1959	• Defined the mandates of the Civil Defense Administration (CDA) • CDA is the implementing agency for laws dealing with crisis management (Article 3). • Set the measures to be taken for early warning system, fire brigades, and carrying out evacuation plans, and search and rescue operations as well. • Freed all financial transactions in times of disaster from all fiscal regulations (Article 9).
Presidential Decree No. 1651/1971	• Established the Supreme Council of Civil defense (SCCD).
Law 30/1977	• Regulated the civil defense procedures inside industrial establishments to minimize human-induced risks and protect workers.
Ministerial Decree No. 11/1966	• Formulated the Civil Defense Committees in the Governorates.
Ministerial Decree No. 382/1970	• Detailed the membership of these committees, chaired by the Governor.
Ministerial Decree No. 1182/1981	• Established Civil Defense Units in different sectors
Ministerial Decree No. 107/1982:	• Amended Law 148/1959 by adding the protection of civilian population from both human-induced and natural disasters in peace and wartime to the mandates of CDA.
Joint Ministerial Decree No. 63/1983	• Organized the co-operation between the CDA (Ministry of Interior) and the Armed Forces (Ministry of Defense) in specific cases such as relief work in natural disasters.
Ministerial Decree No. 349/1986:	• Regulated voluntary work in civil defense
Presidential Decree No. 132/1992	• Re-formulated the SCCD to be chaired by the Prime Minister to lay down the general policy for Civil Defense.
Prime Ministerial Decree No. 746/2000	• Established the Crisis and Emergency Management Affairs (CEMA) to be the centralized structure that will receives information, make decisions and mobilize the response resources appropriate to any form of wide scale disaster. • Planed and developed strategies and policies that strengthen the protection of Egyptian society from potential disasters.
Prime Ministerial Decree No.746/2006	• Issued for the establishment of the National Committee for Crisis and Disaster Management (NCCDM).

These laws and decrees spelled out by the GOE in a report submitted to the UN WCDR, Hyogo, 2005, only deals with post-crisis emergency management. Thus, there is

no legal framework for reducing disaster risks. The main legislation that revolves around it all others laws and decrees is the 1959 law that was developed in the outdated 1950s political and war-time context, which is irrelevant to the natural, human-made and hybrid disasters of the 21st century. It should not be assumed that an obsolete national legislation for crisis management should necessarily include a disaster risk reduction component. The above mentioned laws only dealt with the post-disaster management (rescue, relief and recovery) and did not deal with pre-disaster planning (prevention and mitigation) aspect of crisis and disaster management in Egypt. The current laws for disasters are not clearly defined and the roles of different entities are not clear. This reveals that "predictability", a dimension of good governance, which is concerned with clearly defined laws and policies regulating DRR and their consistent implementation, is not reflected in the current disaster legislation. Moreover, until recently the primary body authorized to deal with disasters, according to the laws, is the CDA. Egyptian legislation dealing with disasters was not amended to reflect the shift from the civil defense approach to the crisis management approach in the 1990s.

The Egyptian Civil Defense Administration (CDA) was founded in 1953, within the Ministry of the Interior. The CDA is the implementing body for laws dealing with crisis and disaster management as set out in Law No. 148/ 1959 and amendments by Ministerial Decrees No. 10 (1965), 175 (1981) and 107 (1982). According to Law 148/1959, the Civil Defense Authority (CDA) is the primary body responsible for disaster prevention and the protection of civilians, protection of the infrastructure (such as the safeguarding of transportation, communications and the functions of the public utilities), and the protection of the cultural and historical heritage and public

establishments (such as national museums). Initially, the main role of the CDA was the protection of civilians during external military assaults. After the signing of peace accords, the 1982 Ministerial Decree introduced protection of the civilian population from both human-made and natural disasters in peace and wartime into the CDA's objectives. The CDA was renamed Civil Protection Authority (CPA) and its mission, in theory, is to mitigate the consequences of disasters on people and properties, undertake preventive action by ensuring the necessary measures for a better handling of emergencies, sensitize the population so that they are less vulnerable when catastrophes occur, train executives and provide the necessary practice opportunities for civil defense staff, administrate available resources (national or foreign) and coordinate their best possible use. "Civil protection systems already play an essential role in coordinating rescue and relief aid, but they can play a bigger role in proactively addressing the root causes of disasters to reduce disaster impact", stated the Director of the UN/ISDR secretariat[5]. Thus, the CPA in Egypt should undergo a genuine shift from crisis management towards disaster risk reduction.

There is wide-spread government rhetoric about reducing disaster impacts, however the most genuine indicator of the GoE political commitment for DRR is the launching of a reform process that formulate legislation on risk reduction. In order for the GOE to be committed to DRR, it should initiate a national process for legislative reform to be the foundation of a national strategy for DRR. According to the HFA, countries should "adopt, or modify where necessary, legislation to support disaster risk reduction, including regulations and mechanisms that encourage compliance and that promote

[5] UN/ISDR, "Civil Protection Must Play Bigger Role in Preventing Disasters", Press Release, 24 June 2008, Available at: http://www.preventionweb.net/english/professional/news/v.php?id=284

incentives for undertaking risk reduction and mitigation activities"[6]. Legislation for DRR is a first step in mainstreaming disaster risk reduction into development.[7] A Presidential Decree must be formulated, as a proof of political will, to set up a National Council or Platform for Disaster Risk Reduction in Egypt, with accordance to the UN/ISDR guidelines[8]. This platform needs to be established by a Presidential Decree to give it executive power and political weight and should be established within either the Prime Minister's Office or the Office of the Presidency to ensure its implementation. This decree should clearly state the role, structure, and responsibilities of this new entity and its legal parameters in order to ensure accountability and transparency. In addition, this decree must be accompanied by a law to set the chain of command between this platform/council, ministries and governorates. Despite the fact that Egypt does not have DRR legislation, it can build on the positive current sectoral legislation dealing with disasters since any reform process must take account of the existing sectoral legislation. The failure to acknowledge pre-existing sectoral policies with a DRR component can lead to further alienation of these sectors, resulting in resource competition that can hinder progress.

Moreover, during this reform process, the Egyptian Government should look at international experiences and best practices in legislative reform with regard to DRR. For example, South Africa's *Disaster Management Act* passed in 2003 was applauded internationally as a path-breaking example of national legislation that promotes disaster

[6] The Hyogo Framework for Action (2005–2015), Available at: www.unisdr.org/eng/hfa/hfa.htm
[7] Pelling, Mark and Ailsa Holloway, "Legislation for Mainstreaming Disaster Risk Reduction", TearFund, 2006: 7.
[8] UN-ISDR, "Guidelines for National Platforms for Disaster Risk Reduction".

risk reduction.[9] In the South African (SA) experience, there was a shift from civil defense to civil protection in 1970s then a shift to disaster management in 1994 and finally a shift to disaster risk reduction in 2003. Up until 1994, civil protection was the norm in SA until the government realized its shortcomings after the inadequate government response in the 1994 *Cape Flats* floods[10]. The occurrence of the devastating *Cape Flats* floods and the emergence of a new democracy were both the catalysts for SA move from civil protection to disaster management, which culminated in the publication of the Green Paper on Disaster Management in 1998[11]. The Green Paper was soon flowed by a White Paper on Disaster Management in 1999, which indicated that "priority is given in this new approach to prevention. Preparedness measures for more efficient rescue operations will remain necessary but much greater attention must be directed to the introduction of preventive strategies aimed at saving lives and protecting assets before they are lost."[12]

On 15 January 2003, the Disaster Management Act was promulgated that ensured a disaster risk management comprehensive approach to development, which marked a new era in the way in which South African government perceived disaster risk, hazards and vulnerability[13]. In 2005, a National Disaster Risk Management Framework (NDRMF), the legal instrument specified by the Act that provides "a coherent, transparent and inclusive policy on disaster risk management", was finalized[14]. The South

[9] Pelling, Mark and Ailsa Holloway, "Legislation for Mainstreaming Disaster Risk Reduction", 4.
[10] Van Niekerk, Dewald, "A Comprehensive Framework for Multi-sphere Disaster Risk Reduction in South Africa", A Doctoral Thesis, School of Social and Government Sciences, NorthWest University, May 2005, 109.
[11] Ibid,110.
[12] Van Niekerk, Dewald, "A Comprehensive Framework for Multi-sphere Disaster Risk Reduction in South Africa", 116.
[13] Ibid, 110.
[14] Republic of South Africa, Department: Provincial and Local Government, "Introduction: A policy framework for disaster risk management in South Africa"*:* 1, in *National Disaster Management Framework*, Available at: http://sandmc.pwv.gov.za/comp/Framework.htm

African NDRMF recognizes a diversity of risks and disasters that occur in SA, and gives priority to developmental measures that reduce the vulnerability of disaster-prone areas, communities and households[15].

INSTITUTIONAL FRAMEWORK

This section will explore the institutional arrangements within the GOE that deal with pre-disaster planning, which is to manage hazards, vulnerability, and disaster risks by focusing on the capacity of the government both at the central and local levels to perform risk analysis. The development of disaster management bodies, the structure and functions of different entities at each level of government both in theory and practice will be examined. In addition, this section will look at existing instruments, processes, and policies, on all government spheres and the politics around there formulation.

The GOE submitted a report to the WCDR in 2005 to report on their current progress in the area of disaster risk reduction[16]. The report showed that DRR concepts is not even understood by government officials since all the responses where dealing with crisis management and not risk reduction, which revealed the lack of culture of prevention. The GOE asserts in the report that “all institutions are committed to elevating disaster risk reduction as a policy priority”[17], a claim that is completely incorrect. The GoE is by no means “committed" to DRR with respect to the existence of adequate legislation in line with DRR international standards. All bodies working on disaster management in Egypt deal with it on an *ad hoc* basis in their own capacity without legal grounds. The report continued to argue that “public agencies, both central and local,

[15] Ibid.
[16] The Government of Egypt, "National Report and Information on Disaster Reduction".
[17] Ibid, ii.

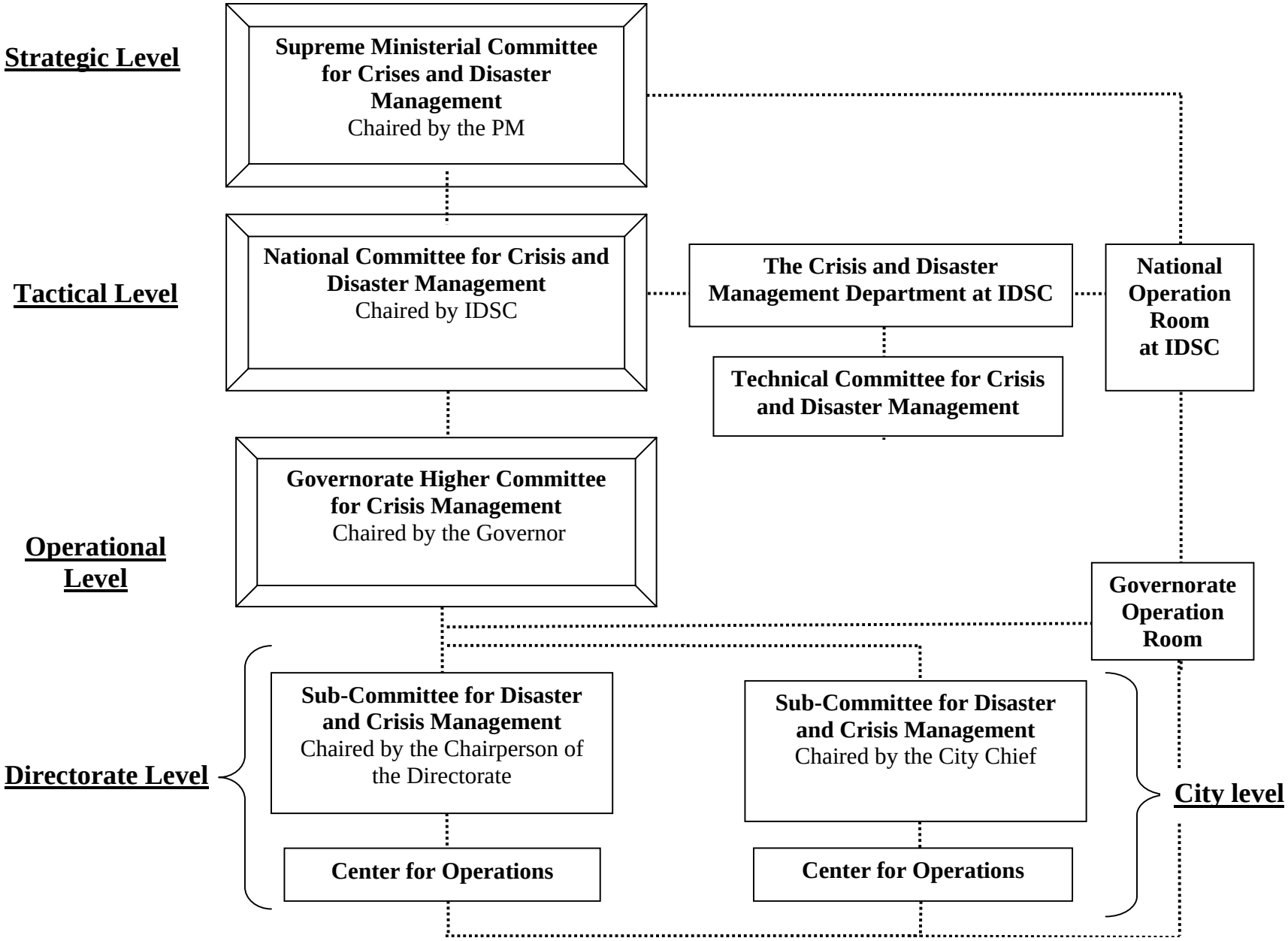
allocate necessary resources for preparedness"[18]. This claim to an extent is valid, but the GOE is not aware that preparedness is only one component of disaster risk management and does not equate with disaster risk reduction. There is no formal funding mechanism for prevention and mitigation initiatives, the two components of DRR, at the national and local levels, as will be revealed in the upcoming sections.

In addition, during field interviews at IDSC whenever the researcher interviewed a government official to discuss disasters prevention and mitigation initiatives, they diverted the researcher's discussions to post-disaster efforts; i.e. they only refer to preparedness and emergency responses since these are the current areas the government is engaged in. This revealed that new DRR concepts, terminologies, policies and processes discussed in depth in the literature review are not yet understood by policy makers in the Egyptian government.

The *Institutional Structure of DRR in Egypt*[19], as shown in figure 4, divides the institutional structure into three levels. The following section will examine the roles and responsibilities, functions, activities of the three levels. The strategic level, which is highly political, is represented by the *Supreme Ministerial Committee for Crisis and Disaster Management*. In addition, the second tactical level will be examined, which consist of the *National Inter-Ministerial Committee*, the *Crisis and Disaster Management Department*, and sectoral Ministries. The third level that will be explored is the local operational arm, which is responsible on implementing disaster strategies and policies.

[18] Ibid.
[19] Ibid, 10.

Figure 4: Institutional Structure of Crisis and Disaster Management in Egypt



Source: Ministry of Local Development, The Government of Egypt, National Report and Information on Disaster Reduction, WCDR 2005, p.10.

THE SRATEGIC LEVEL

The *Supreme Ministerial Committee for Crises and Disaster Management* (SMCDM) is the highest political executive authority dealing with disasters, in which it is headed by the Prime Minister and consist of the following members: the Minister of Defense and Military Production, the Minister of Interior Affairs, the Minister of Information, the Minister of Foreign Affairs, the Minister of Health and Population, concerned Minister / Governor (according to the type of the Crisis/Disaster), representative of National Security Council, and Specialized Experts (according to the need). The SMCDM functions, according to the IDSC "Manuel on General Procedures for Crisis and Disaster Management" are to[20]:

1) manage a disaster when the danger level reaches "very high";
2) delegate responsibilities to different entities to manage the disaster;
3) adopt a plan to deal with the disaster;
4) initiate necessary recommendations and decisions on how to deal with the disaster on the executive level, how to control it, and how to mitigate the negative impacts of disasters;
5) coordinate between all stakeholders to unit all efforts to control the disaster and mitigate its impact;
6) decide on the media mechanisms that will deal with the disaster and the public spokesman for the disaster;
7) dissolve obstacles that would challenge the quick and efficient implementation of policies;
8) formulate a political report for the highest executive level on the nature of the disaster, giving a general evaluation of the situation and explaining the initiated policies to deal with the disaster.

The analysis of the above mentioned functions reveals that the SMCDM is involved in the disaster after it has taken place, which contradicts with the basic foundations of DRR. The concept and practice of reducing disaster risks is achieved through the "systematic efforts to analyze and manage the causal factors of disasters

[20] IDSC, "Manuel: General Procedures for Crisis and Disaster Management", 23.

through reduced exposure to hazards and lessened vulnerability of people and property"[21]. The mandate of the SMCDM does not include laying down any strategies for analyzing and managing the causes of disasters.

In addition, there are no legal grounds for this strategic committee per say; it is most likely that the SMCDM is the evolution of the Supreme Council of Civil Defense (SCCD) formulated by a Presidential Decree in 1971 since both entities have the same objectives and strategic framework. The researcher believes that when the government decided to shift from civil defense to crisis management in the early 1990s, in conformity with international trends, they just changed the names of all bodies from "civil defense" to "crisis management" without really changing its roles and functions. Thus, the Supreme Council of Civil Defense was renamed the Supreme Committee for Crisis Management. This means that the 1992 Presidential Decree No. 132, which reformulated the SCCD to be chaired by the Prime Minister, might be regarded as the legal basis that regulates SMCDM. The vague procedures and mechanisms associated with these committees and the unclear functions, roles, and responsibilities reveal that still notions of predictability are still not adhered to in practice. Moreover, when the SMCDM legal basis and mandates with regard to DRR are not clear, this means that members of this committee cannot be held accountable if failed to achieve their goals.

The issue of disaster management started to gain weight in the Egyptian arena after the WCDR in Japan in 2005. In April 2006, the Prime Minster, as the head of the SMCDM, has issued a decree to form *the National Committee for Crisis and Disaster Management*. Also, the IDSC was also instructed by the PM to establish crisis

[21] UN/ISDR, "UNISDR Terminology on Disaster Risk Reduction (2009)".

management units at all ministries and governorates, providing them with necessary support and capacity in terms of knowledge, training and technical expertise[22]. In addition, the Prime Minister issued instructions to several ministries, including the IDSC to finalize the preparation of *National Plan for Disaster and Crisis Management* with identification of the role of all ministries, governorates, and other stakeholders, and to prepare a *National Training Plan for Disaster and Crisis Management* to build the capacity of personnel at all levels. It is worth noting that all these instructions have no legal basis since they are not based on any legislation nor decrees, thus there implementation cannot be ensured. Moreover, the failure of the government to put the SMCDM , its strategies and recommendations in a legal framework reveals the lack of political commitment with respect to DRR.

THE CENTRAL LEVEL

This section will examine the central level, where all disaster plans are initiated and disaster related policies formulated and where coordination takes place. During the field work, the researcher found out that in practice the GOE does not have an entity that carry out risk analysis on the national level. In theory, the central government should assume the main responsibility to ensure that hazard and vulnerability reduction policies are cross-sectoral and integrated in development planning, policies and programming[23]. However, in the Egyptian experience, hazard mapping is carried out on a sectoral basis in a limited scale and the government does not perform vulnerability assessment in practice. The following section will provide an in-depth discussion on the functions and responsibilities of the *National Committee for Crisis and Disaster Management*, the

[22] Riad, Samir, "Report on Disaster Risk Management in Egypt", 19.
[23] Lewis, Dan, and Jaana Mioch, “Urban Vulnerability and Good Governance”, *Journal of Contingencies and Crisis Management*, Volume 13 Number 2, (June 2005):51.

Crisis and Disaster Management Department, and the sectoral ministries, which will reveal their degree of political commitment to reducing disaster risks.

The National Committee for Crisis and Disaster Management

In 2006, the Prime Minster has issued a Decree, No.746/2006, to formulate *The National Committee for Crisis and Disaster Management* (NCCDM); the PM has instructed the IDSC in cooperation with the Department for Crisis Management at the Military Forces to chair the NCCDM, which consists of representatives of the 31 Ministries, representatives of 26 Governorates, and some specialized governments agencies such as the Suez Canal Authority, EEAA and Security Agencies at the Ministry of Interior in addition to the IDSC, and specialized experts. The politics behind the formulation of the NCCDM was increased criticisms in the wake of the sinking of the Al-Salam Ferry disaster in the Red Sea in February 2006. According to Blaikie et al. (1994), it is highly common that political will is most likely to originate from a major failure to deal with a disaster.[24]The formulation of the NCCDM was a reactionary decision as a result of the failure of the government to manage Al Salam Ferry disaster, in which there was heightened political will in the wake of the ferry catastrophe which resulted in the establishment of the NCCDM within a legal framework.

Despite the fact that the NCCDM was established by a Prime Ministerial Decree, there is no clearly defined institutional and legal framework that governs it roles, responsibilities and mandates and its relation with other entities on the strategic and tactical levels. It is unclear whether the NCCDM, according to the decree, has executive

[24] Blaikie, Piers et al., 232.

functions or if it is only a coordination mechanism. With respect to the mandate of the NCCDM in theory in the pre-disaster phase, it should[25]:

1) transform the decisions and recommendations of the SMCDM on the strategic level to executive procedures and supervise their implementation;
2) follow up on all decisions and procedures initiated to control the disaster and mitigate its negative impact;
3) supervise all search, rescue and evacuation operations and follow up on them;
4) coordinate between involved sectoral and local entities;
5) ensure media follow up of the event;
6) formulate a comprehensive evaluation of the situation at hand, decide on the needed procedures and suggest solutions and recommendations in order to control the disaster and mitigate its negative impact;
7) formulate necessary reports to be submitted to the SMCDM.

These mandates are typical of disaster and crisis management techniques and do not tackle any DRR components since they are only covering preparedness efforts, rescue, and relief efforts. This problem exists due to the prevalence of older militaristic disaster response arrangements ("command and control" based civil defence) since only rescue and relief operations are the ones understand and is the ordinary mode of activity[26]. The only attempt that was made to try and give the illusion that these objectives are in line with DRR principals is by adding the phrase "mitigate its negative impact" in the second and sixth objective; this phrase does not fit in the overall rationale of these objectives. What further proof this point is that a high level key informant interviewed revealed that the *National Committee for Crisis and Disaster Management* was renamed to *National Committee for Crisis and Disaster Management and Reducing its Risks* in the wake of international DRR trends and increased UN/ISDR pressure to "obtain commitment from public authorities to implement disaster reduction policies and

[25] IDSC, "Manuel: General Procedures for Crisis and Disaster Management", 27.
[26] Wisner, Ben, "Vulnerability in Disaster Theory and Practice: From Soup to Taxonomy, then to Analysis and finally Tool", International Work-Conference, Disaster Studies of Wageningen University and Research Centre, 29-30 June, 2001.

actions"[27] and that this modification in the name of the committee did not result in any substantive amendments in its mandates. This reveals that there is still not enough political will to make a genuine move from disaster management to disaster risk reduction, and the government is trying to give a false impression that they are adopting DRR mechanisms by merely amending the names of different committees.

The Crisis and Disaster Management Department at IDSC

The *Crisis and Disaster Management Department* (CMDR) at IDSC is the operational arm of the NCCDM and is the main body responsible for, supposedly, mainstreaming DRR in development planning in Egypt. The CMDR has been assigned, in April 2008, to be the official HFA Focal Point in Egypt[28]. The CMDR was established in 2000 under the umbrella of IDSC by a Prime Ministerial recommendation, which is an informal decision, and not with the same legal power as a decree. Thus, there is no legal basis for the establishment of CMDR and governs the relationship between the CMDR, different ministries and governorates, which makes it a weak department with no legal executive powers. Thus in practice, the CMDR's instructions and recommendations are not binding and might not be implemented by relevant ministries and governorates. With regard to the CMDR's mandates in the pre-disaster phase in theory is the following[29]:

1) to develop contingency plans;
2) review national strategies and policies for crisis and disaster management on the national level;
3) review and evaluate plans of ministries and governorates for crisis and disaster management, evaluate them and provide recommendations for further improvement;

---

[27] UN/ISDR WANA, "International Strategy for Disaster Reduction**,** West Asia and North Africa Objective", Available at: http://www.unisdr-wana.org/eng/about-wana/mission.html

[28] Dr. Mostafa Mohaghegh, Head of Regional Office for West Asia and North Africa (WANA), United Nations International Strategy for Disaster Reduction (UN/ISDR), interview by author, 15 May 2008.

[29] CMDR, Available at: http://www.crisismanagement.idsc.gov.eg/Crisis/default.aspx

4) supervise different ministries, governorates and other agencies while performing simulation exercises in the realm of disaster management;
5) coordinate between all stakeholders and provide support in formulating disaster plans before the disaster takes place by taking into account international best practices;
6) revise and evaluate crisis management training plans for ministries and governorates;
7) spread cultural awareness on disaster management;
8) conduct training workshops for ministries' and governorates' officials to upgrade their capacity in the disaster management field;
9) develop early warning systems for disaster management.

However, most of these mandates are not implemented in practice. During an interview with a CMDR official, it was mentioned that most of the mandates of the department are still not implemented. Despite the fact that risk analysis is the core of disaster risk reduction and entails the analysis of both hazards and vulnerabilities, the CMDR revealed in the HFA interim progress report that "there is no detailed or integrated studies, reports, nor atlases on multi-hazard analysis exist in the country for the national and local levels."[30] Although that the basis for reducing disaster risk "lies in the knowledge of the hazards and the physical, social, economic and environmental vulnerabilities to disasters", according to the HFA[31], it was evident during the field interviews at CMDR that the department is not engaged in systematic hazard mapping and vulnerability assessment. In a nutshell, hazard and vulnerability analysis are simply not carried out by CMDR although they are among its mandates. The CMDR has undergone some random initiatives in the field of hazard mapping for some hazards such as floods and earthquakes.

[30] The Government of Egypt, "Interim National Progress Report on the Implementation of the Hyogo Framework for Action", Cabinet Information and Decision Support Center, (November 2008): 19.
[31] "Hyogo Framework for Action (2005-2015), Building the Resilience of Nations and Communities to Disasters".

The lack of systematic risk analysis is attributed to first budget constraints and second to the lack of technical capacity, each will be discussed consecutively. “We do not have the necessary financial resources nor the human resources to carry out hazard, vulnerability, and cost-benefit analysis”, stated a CMDR official. The CMDR lack financial resources to enable it to conduct pre-disaster planning, coordinate, and build the capacity of other ministerial units. In addition, Ms. Heba Ibrahim, Senior Researcher at CMDR stated “IDSC distributes its financial resources among its departments equally; i.e. the CMDR has a set budget like its sister departments at IDSC regardless of its objectives and activities”. With regard to the technical capacity, “the IDSC's department should be upgraded to be able to deal with the chain of hazard assessment, risk reduction, intervention and recovery”, according to Dr. Samir Riad.[32] The IDSC revealed in the HFA interim national progress report that the CMDR lack the human capacity in order to manage disaster risks[33]. Moreover, a key informant at CMDR mentioned to the researcher that the CMDR is facing challenges with respect to the limited resources; she revealed that “both financial and human resources are not adequate at national and local levels.” She continued to say that “although human capital is widely available at all levels but not well trained to implement disaster risk reduction initiatives.” Unlike hazard mapping, which can be computerized using geographic information systems (GIS) or even satellite images, vulnerability cannot be seen from above. CMDR ignored vulnerability analysis since they lack the needed human resources and financial capacity to constantly engage in a bottom-up analysis of the prevailing social, economic, cultural and political circumstances for every hazard in different communities.

[32] Riad, Samir, "Report on Disaster Risk Management in Egypt".
[33] The Government of Egypt, “Interim National Progress Report on the Implementation of the Hyogo Framework for Action”, 4.

Not only there is lack of resources and technical capacities that hinder the systematic implementation of risk analysis, but also there is no political will to perform such uniform hazard and vulnerability analysis. It was apparent through observation during field interviews that there is an embedded lack of political will. The researcher believes that the GoE does not have the political will to prevent disasters because they can have political benefits from disasters. Disasters divert attention from the underlying development failures and weakness of development strategies[34]. Even if the opposition criticizes the GoE on handling of disaster relief and recovery, the government has the advantage of implementing "emergency law" at a time of political instability. In addition, in Egypt shortly after the disaster occurs and after heightened criticisms from the opposition, they quickly tend to forget about it. Disasters also mean the channeling of foreign humanitarian aid to the government in millions of pounds. Several scholars argue that "aid-dependent and corrupt state can, in fact, actually welcome disasters"[35]. Moreover, the GoE will adopt DRR since this issue is highly politicized. Although, hazard analysis is an important step in communities' resilience, it can turn extremely political when for example it is accompanied by calls to relocate people from hazardous places. Moreover, vulnerability analysis can reveal the deep rooted development failures of the GoE, as reveled in chapter 3. The question is does the CMDR adhere to measures of good governance if they are not performing risk analysis, supposedly one of its main mandates?

[34] Wisner, Ben, "Sustainable Suffering? Reflections on Development and Disaster Vulnerability in the Post-Johannesburg World", *Regional Development Dialogue* , Vol. 24 Issue 1, (2003): 4.
[35] Ibid.

Accountability, participation, predictability and transparency are identified as the key features of good governance that supports risk reduction[36]. “Transparency”, one of the dimensions of effective governance structure, is a crucial element for reducing disaster risks since it reduces opportunities for corrupt behavior by informing the public especially vulnerable population of its policies[37]. “Transparency”, which is the dissemination of information through the publication of reliable information to other actors in a timely manner, is not adequately carried out by the CMDR. As mentioned before, the CMDR does not have the essential technical capacity to formulate hazards databases and GIS maps due to their lack of human capital, financial resources and political will. In addition, the CMDR claims that the crisis management website “will enable the accessibility on relevant information on disasters at all levels, to all stakeholders”, however this claim is inaccurate in practice[38]. Despite the fact the CMDR has its own website for awareness raising through the dissemination of information, most of the documents are not accessible and require a password to access them. Most of the essential disaster management documents are “classified” since these documents “involve the role and responsibilities of sensitive agencies and entities within the government”, stated a CMDR official who refused to disclose his name, which reveals that the “culture of possession” is still prevailing within the CMDR. For example, the CMDR “National Plan for Floods”, “National Plan for Earthquakes” and “National Plan for Fires”, are not published on the CMDR website and even when the researcher requested to obtain a copy

[36] Ahrens, Joachim and Rudolph, Patrick M., "The Importance of Governance in Risk Reduction and Disaster Management", *Journal of Contingencies and Crisis Management* , Vol. 14 No. 4, December 2006: 207.
[37] Riad, Samir, "Report on Disaster Risk Management in Egypt".
[38] The Government of Egypt, “Interim National Progress Report on the Implementation of the Hyogo Framework for Action”.

of them from the department but they refused explaining that they are “top secret” since these documents uncover the capacities of such “sensitive entities”, such as the Ministry of Interior and Ministry of Defense, in times of disasters. The researcher attributes the unwillingness of officials to publish these documents is to avoid being held “accountable” by the public and legislative authorities if they failed to carry out the laid out plan. In addition, disaster figures that are published by IDSC on several disasters are not accurate and inconsistent with other reports also published by IDSC on the same disaster, as reveled in the conflicting figures on road accidents in chapter 3. The researcher is not quite sure whether the CMDR does not have the accurate figures due to lack of resources and statistical capacity or due to their unwillingness to disseminate the “real and accurate” information.

Central Ministries

This section will critically examine the role of several ministries in prevention and mitigation efforts. The reason why the researcher is examining the general role of several sectoral ministries is that some form of hazard mapping and analysis is carried out in some sectors. During field work, it was found out that each Ministry has its own crisis and disaster unit and its own budget line for it. Disaster units in ministries do not have a uniform structure and functions; each ministry has its own unit based on its capacity. For example, both the Ministry of Transportation and the Ministry of Tourism have sophisticated disaster centers with huge budgets, while other ministries have weak centers with very limited budgets. Some ministries do not even have crisis centers; they created virtual centers with one official as the disaster and crisis focal point. For example, the Ministry of Local Development does not have a center but appointed an official from its

information center to be the crisis and disaster focal point. The variation in Ministries' capacities with respect to disasters resulted in huge inconsistencies between ministries and is reflected in their DRR efforts. This can also be attributed to the lack of a national DRR legal framework that would unify all DRR-related structures in all ministries and create parallel uniform structures in all ministries. Despite the fact that CMDR is the government entity that is mandated to coordinate between all ministries in theory, however the CMDR in practice does not even have records of the structure and composition of the disaster units at each ministry, their work nor their capacities, as reveled during the field work at CMDR.

In practice, each sectoral ministry is responsible for mapping its own related hazards depending on its capacities. Some ministries take hazard mapping seriously while other ministries have other contesting priorities on their agendas. For example, The Ministry of Health (MoH) conducts vulnerability and capacity assessments for various epidemics according to studies of "black points of recurrent disasters and red spots of prone disaster all over Egypt"[39]. While the Ministry of Water Resources and Irrigation (MWRI) prepared mapping system for the possible locations of flash floods and their spillways for all governorates. In addition, MWRI is trying to carry out structural measures such as the removal of buildings from flash floods spillways to reduce the impacts of these hazards. The Academy for Scientific Research ad Technology (ASRT) has developed two hazard maps, one for the seismic risk and the other for flash floods risk. The Egyptian Environmental affairs Agency (EEAA) carry out hazard mapping and assessment for environmental risks and hazards. The GOE also claim in the report submitted to the WCDR in Kobe- Hyogo, Japan 2005 that the Ministry of Planning has

[39] The Government of Egypt, "National Report and Information on Disaster Reduction", 16.

"established an integrated hazard mapping system to project all the possible hazards, according to their type". However, this claim is not based on any solid evidence. According to a key informant, "until now, there is no hazard mapping system or hazard guide for Egypt".[40] This reveals that there are no systematic hazard mapping, which result in giving attention to a certain hazards while totally ignoring others.

With regard to the budget, each ministry allocates a budget for its crisis center; the allocation severely varies from one ministry to the other. Some ministries dedicate limited resources for disaster management. For example, the Environmental Protection Fund (EPF) allocated for the Egyptian Environmental affairs Agency (EEAA) to enhance, among other activities, strategies for environmental disaster management and risk reduction[41]. While others do not have certain funds for DRR; the GOE explains in the report submitted to the WCDR that although there should be specific line budget in every government agency for DRR, other pressing development priorities often compete for the limited funds available to these agencies. [42] This reflects the politics surrounding the channeling of funds, in which politicians want to focus on development priorities that will lead to quick and visible gains to their constituents rather than invest in long-term risk reduction initiatives.

THE LOCAL LEVELS

This section will examine the role of the local government in managing disasters in the pre-disaster phase in Egypt. The study will examine how the lack of legal

[40] ---------, IDSC, interview by author, personal interview, 14 January 2009.
[41] The Government of Egypt, "Interim National Progress Report on the Implementation of the Hyogo Framework for Action", 18.
[42] The Government of Egypt, "National Report and Information on Disaster Reduction".

framework, the limited available financial and human resources hinders the application of DRR initiatives on the local levels. While the researcher did not engage in governorate level field research, the researcher relied on the interviews conducted with officials at the central level and the field work carried out in Fayoum governorate; further research at the local levels can be carried out in future studies. For the purpose of this study, the researcher wants to clarify that the term "local government" refers to the governorate level.

According to figure 4, in theory each governorate should have a *Governorate Higher Committee for Crisis Management*, which consists of the governor, heads of Directorates, head of Security Department, and representatives of districts, cities, towns, and villages. The *General Procedures for Crises and Disaster Management Manuel* spells out the role and responsibilities of the governorates in the pre-disaster phase, which is to[43]:

1) forecast disaster related hazards;
2) establish an operation room in the governorate;
3) review the existing resources in the governorate for disaster management;
4) formulate action plans for emergency situations (sectoral plans for electricity, water and irrigation, transportation, communication, and health);
5) organize coordination plans with other nearby governorates;
6) coordinate volunteer efforts and formulate teams of volunteers on the city level;
7) select a spokesman on behalf of the disaster management team;
8) train rescue and search staff;
9) relocate populations from risk areas;
10) develop different scenarios for hazards and conduct simulation exercises;
11) store food and medical supplies as a preparedness measure;
12) conduct awareness raising and formulate a communication strategy.

During interviews with government officials, it was revealed that most of these roles and responsibilities are not implemented in practice. For example, each governorate does not perform its systematic hazard analysis, detect disaster risks, and analyze

[43] IDSC, "Manuel: General Procedures for Crisis and Disaster Management" , 74.

vulnerabilities generating these risks since some governorates does not even have a functional disaster committee. Formulating a *Governorate Higher Committee for Crisis Management* has not yet been enforced on the governorate level in practice. According to the GoE HFA interim progress report, "there are crisis management entities established in all governorates at the local level"[44], however this claim is not true. During the field work conducted at Fayoum governorate, there was no sub-committee for disaster and crisis management at the governorate level. The researcher attributes the failure to formulate this committee on the local level to the lack of a legal framework that clearly spells out the role of this entity, its functions, and objectives. In addition, another impediment for the formulation of this committee is that governorates do not have the financial and the technical capacity to carry out delegated mandates. This process is referred to in the literature as the "de-politicization of vulnerability"[45] by "placing much of the responsibility for local vulnerability reduction to local officials who lack the jurisdiction or political power to address wider factor and processes that contribute to vulnerability".[46]

The GoE claims that "training is offered to the institutions at local level; however, research, data collection and dissemination activities remain at central level."[47] However even these trainings that the government is referring to is not disaster risk reduction training. Despite the fact that the Civil Protection Authority (CPA) and the Centre for Crisis Management of the Military Forces have training centers in

[44] The Government of Egypt, "Interim National Progress Report on the Implementation of the Hyogo Framework for Action", 23.
[45] Allen, K., "Vulnerability Reduction and the Community-based Approach: A Philippines Study", in Mark Pelling (ed*.), Natural Disasters and Development in a Globalizing World*, (New York: Routledge, 2003): 180.
[46] Allen, Katrina M., "Community-based Disaster Preparedness and Climate Adaptation: Local Capacity-Building in the Philippines", *Disasters*, Vol. 30 No. 1, (2006): 97.
[47] Ibid.

governorates[48], the training they provide is on disaster management and not disaster risk reduction.

In practice, these mandates can be implemented if there is a genuine political will. For example, one of the above mentioned objectives was partially carried out in practice, which is the "development of scenarios for hazards and conduct simulation exercises". In the wake of mounting international pressure on the GoE with regard the Avian and Human Influenza crisis and the calls for the formulation of vital preparedness measures, the IDSC assisted the Menofiyah governorate to develop *Pandemic Influenza Preparedness and Response Plan*. This plan was verified by *Simulation Training Exercises* in Menofiyah in order to test and revise the procedures placed to encounter the Pandemic Influenza, test the reporting track, check the soundness of the procedures, test different roles of the directorates, and ensure comprehensiveness of the plan. This success story was a unique case of Menofiyah and at no point there was uniform formualtion of pandemic preparedness plans and application of simulation exercises among all governorates. The government replicated this success story in a three additional governorates which are Al Sharqeya, Al Garbeya and Al Qalubiya; each governorate formulated their "Plan for Pandemic Influenza", however simulation exercises are still not performed. Moreover, the formulation of preparedness plans for each potential disaster and the execution of simulation exercises is not a systematic approach that is carried out by each governorate. These initiatives are haphazard and are based on the availability of funding matched with political will.

[48] Ibid, 4.

Despite the fact that the central government in Egypt plays the primary role in formulating disasters-related plans and policies, disaster risks are first and foremost the result of dynamic local processes that affect individuals, households, communities and local governments, as will be closely revealed in the case study, and thus pre-disaster risk analysis and planning must take place at the local levels. The GoE claim that "the decentralization of authority is ensured through the representation of all governorates in the NCCDM"[49]. However, it was apparent from the field work that the government is not implementing decentralization, which is "a transfer of decision-making authority from central to local governments"[50], but is carrying out "de-concentration", which is the "transfer of authority within central administrative structures (e.g., from the central ministry to its directorates offices)[51]. Moreover, the government failed to the build the technical and human resource capacity at the directorates and units at the local levels with respect to reducing disaster risks and concentrated all technical expertise at the central level, as will be revealed in the case study chapter.

Moreover, some officials claim that the government's reluctance to decentralize risk reduction efforts and delegate responsibilities to the local levels is due to the fact that the local levels do not have necessary financial resources, skills, legal and political powers to carry out preparedness and mitigation activities. This claim is true to a certain extent since currently all financial and human resources are still decentralized at the central level but the question is: what are the politics that are hindering the channeling of funds and human resources from central to local levels with respect to disaster risk

[49] The Government of Egypt,"Interim National Progress Report on the Implementation of the Hyogo Framework for Action", 7.
[50] Ahrens, Joachim and Rudolph, Patrick M., "The Importance of Governance in Risk Reduction and Disaster Management", 215.
[51] Ibid, pp. 215.

reduction? The GoE is currently not committed to put in place a legal framework that would politically and financially empower the local levels.

Although it was revealed during interviews that officials at the CMDR are convinced that there should be legally decentralizing responsibilities and financial resources to governorates, the IDSC revealed that "although the government is implementing decentralization in order to implement a bottom-up approach to ensure the community participation, funding for DRR will remain centralized since authorities at the local level have long lived dependant on the central government"[52], according to the HFA report. This contradictory statement reveals that the lack of political will among decision makers at the central level to undergo financial decentralization due to their unwillingness to let go of their financial powers. Decentralization of financial resources to governorates in practice means that the funds will be channeled from sectoral ministries and their directorates at the local levels to the governorates, districts, cities and villages. For example, currently foreign in-kind contributions in the aftermath of a disaster are channeled though the Ministry of Local Development, its directorates and its units to the affected populations, while the Ministry of Social Solidarity receives all financial contributions from within Egypt and from abroad for disaster relief and administers the distribution of funds to local levels[53]. This reveals that financial decentralization in Egypt is a highly political matter that could be opposed by the central government.

[52] Ibid, 7.
[53] The Government of Egypt, "National Report and Information on Disaster Reduction", 15.

CHAPTER 5

CASE STUDY: THE IMPACT OF AVIAN AND HUMAN INFLUENZA CRISIS ON TRADITIONAL POLUTRY KEEPERS' LIVELIHOODS IN FAYOUM

INTRODUCTION

This chapter will examine the Avian and Human Influenza (AHI) crisis from February 2006 until April 2009 in Egypt, as an example of a hybrid hazard. This case study will utilize the basic elements of the *Sustainable Livelihoods Framework*, previously examined in the literature review, in order to closely examine the outbreak of the AHI in Fayoum governorate and explore how the AHI crisis affected traditional poultry keepers in Fayoum from a livelihoods lens. The first section will examine the most vulnerable groups to AHI in Fayoum. Second, the cultural dimensions, traditional practices and behavioral patterns that played a vital role in increasing the vulnerability of traditional poultry keepers, their children and their poultry to AHI will also be examined. Third, this study will assess the impact of the AHI crisis on traditional poultry keepers' *Livelihood Assets* in Fayoum through the destruction of physical, financial, human, and social assets, and how it affected women's *Livelihood Strategies* and examining their coping mechanisms employed to resist the AHI crisis.

The final section of the case study will deal with the government policies in reducing the risk of AHI from the perception of poultry keepers. The questions that will be raised are the following: what are the mechanisms mandated to deal with the AHI crisis on the three levels of government? How did the local arm of the government deal with the AHI crisis in Fayoum in particular? Not only it is crucial to examine the government's *Transforming Structures and Processes* in the AHI crisis, but also it is vital to observe poultry keepers' experiences with NGOs in the wake of the AHI crisis. That is why the following section will deal with the Catholic Relief

Services (CRS) Avian Influenza mitigation project. The following questions will be raised: Did the CRS employ bottom-up approaches in its design and implementation of business development services? Did the CRS project alter the behavioral pattern of the poultry keepers? How did the project help women cope with the AHI crisis*?*

OVERVIEW OF THE AHI OUTBREAK

One of the recent and ongoing disasters that occurred in Egypt is the outbreak of the Highly Pathogenic Avian Influenza, type A virus strain, subtype H5N1 (HPAI H5N1), commonly known as Avian Influenza or Bird Flu. Avian influenza is an infectious disease; while all birds are thought to be susceptible to infection with avian influenza viruses; many wild bird species carry these viruses with no apparent signs of harm. However, domestic poultry when infected with HPAI H5N1 develops sudden onset symptoms of severe disease, rapid infection, and its mortality rate can approach 100% within 48 hours since the HPAI virus affects the respiratory tract and also invades multiple organs and tissues[1]. The GOE confirmed its first HPAI H5N1 outbreak in domestic poultry on 17 February 2006. A report conducted by the IDSC estimated Egypt's total losses due to the deadly strain of H5N1 to be around 863 million EGP since the disease appeared in Egypt until February 2008 due to the slaughtering 36.8 million birds[2].

With regard to H5N1 human cases in Egypt, the first case in humans was discovered on 15 March 2006.[3] Egypt was the ninth country to report laboratory-confirmed human cases to the WHO.[4] Egypt is in WHO phase 3, which means that infection occur from animal-to-animal with a new influenza virus subtype is causing

[1] WHO, “Avian Influenza Bird Flu Fact Sheets”, Available at: http://www.who.int/mediacentre/factsheets/avian_influenza/en/
[2]IDSC, "Annual Report of Major Disasters in Egypt during 2007", 5.
[3] Ministry of Health, Government of Egypt, "Comprehensive Approach to Addressing Avian and Human Influenza in Egypt", 4.
[4] Ibid.

disease in humans, but is not yet spreading from human-to-human. According to the WHO, between 15 March 2006 and 20 May 2009, 74 cases were confirmed positive and there have been 27 fatalities, ranking the third on the world in terms of confirmed human cases (after Indonesia and Vietnam) since the beginning of the crisis[5]. Out-side Asia, Egypt has had the highest number of human infections and deaths due to the H5N1 virus.[6] What is even more alarming is that since 1st of January 2008 till May 2009, Egypt had 23 confirmed cases of H5N1 virus, 4 of which died, which makes Egypt the first on the world in terms of confirmed cases in 2009[7]. Then the question is: what are the Egyptian governorates most vulnerable to AHI?

AHI VULNERABILITY CONTEXT

According to the *Sustainable Livelihoods Framework*, a range of assets is required to achieve positive *Livelihood Outcomes*; access to assets and the strategies people employ are influenced by the *Vulnerability Context*. This section will attempt to examine the vulnerability of governorates with respect to AHI, according to confirmed human cases. Afterwards, the most vulnerable groups in these governorates to AHI will also be explored.

With regard to geographic vulnerability, there is no official data with regard to the governorates most vulnerable to AHI. Although the government is taking a more transparent stance in the AHI crisis compared with previous disasters, it still should inform the public with up to date information with regard to the most affected governorates by the AHI crisis. During an interview with a key informant at the

[5] WHO, Accessed February 10, 2009, Available at: http://www.who.int/csr/don/2009_02_09/en/index.html and Global Health Facts, Available at http://www.globalhealthfacts.org/topic.jsp?i=27

[6] FAO, Ellen Geerlings (ed.), "Highly Pathogenic Avian Influenza: A Rapid Assessment of the Socio-Economic Impact on Vulnerable Households in Egypt", A Joint Study by the FAO and the WFP, Cairo, Egypt, 23.

[7] WHO, "Cumulative Number of Confirmed Human Cases of Avian Influenza A/H5N1 Reported to WHO", Updated 22 May 2009, Available at: http://www.who.int/csr/disease/avian_influenza/country/cases_table_2009_05_22/en/index.html

CMDR, the researcher inquired about the most vulnerable governorates to AHI, however the informant refused to give a clear cut answer. When the researcher further questioned the reason behind the execution of pandemic preparedness simulation exercises in Al Monofeya, Al Sharqeya, Al Garbeya and Al Qalubiya as pilot governorates to verify each governorate "Plan for Pandemic Influenza", the respondent responded with a mysterious smile. That is why the researcher in the coming section will attempt to identify the most vulnerable governorates.

With regard to the vulnerability to AHI according to governorate, it is very difficult to detect the numbers of poultry dead and/or culled according to governorates, especially in the traditional poultry sector. In the current situation it is almost impossible for the government or any other civil society organization to accurately estimate the real numbers of H5N1 infected household poultry per governorate. During the field work in Fayoum, the researcher discovered that almost all women interviewed tend to get rid of dead or sick birds by throwing them in *Ter'a*, i.e. water canals, burying them, or burning them and then throwing them in garbage areas in streets as will be revealed in the following sections. According to table 5 that is compiled by the researcher, the governorate with highest number of positive cases is Monofeya with 8 confirmed human cases followed, in the second place, by Fayoum and Gharbiya each with 7 confirmed cases. In the third place is Qena with 6 positive cases.

TABLE 5: H5N1 HPAI Confirmed Human Cases by Governorates (15 March 2006 – 22 May 2009)

Governorates	2006		2007		2008		2009*		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
1) Alexandria	---	---	---	---	---	---	1	---	1	---
2) Assiut	---	---	---	---	1	1	1	---	2	1
3) Aswan	---	---	3	---	---	---	---	---	3	---
4) Behera	---	---	---	---	1	1	2	---	3	1
5) Beni-Suef	---	---	2	2	---	---	---	---	2	2
6) Cairo	---	---	1	1	1	1	1	1	3	3
7) Dakahleya	---	---	3	1	---	---	2	1	5	2
8) Damyetta	---	---	2	1	---	---	---	---	2	1
9) Fayoum	2	---	2	2	2	1	1	---	7	3
10) Kafr EL Shiekh	3	---	---	---	---	---	2	1	5	1
11) Gharbiya	5	4	---	---	---	---	2	---	7	4
12) Menya	1	1	2	---	1	---	1	---	5	1
13) Monofeya	3	3	2	1	1	---	2	---	8	4
14) Qalubiya	3	2	1	---	---	---	1	1	5	3
15) Qena	---	---	5	1	---	---	1	---	6	1
16) Sharqeya	---	---	1	---	1	---	1	---	3	---
17) Sohag	1	---	1	---	---	---	3	---	5	---
18) Suez	---	---	---	---	---	---	1	---	1	---
19) 6th of October	---	---	---	---	---	---	1	---	1	---
Total	**18**	**10**	**25**	**9**	**8**	**4**	**23**	**4**	**74**	**27**

Source: Compiled by the author from WHO Situation Updates for Egypt. Available at: http://www.who.int/csr/don/archive/country/egy/

* Data for 2009 only covers between January and May 2009.

With respect to the most vulnerable group, there are no official data that spells out the most vulnerable groups in these governorates. That is why the researcher has compiled table 6, which classify confirmed human cases according to gender. A disproportionate number of H5N1 confirmed cases have been poultry keepers and their families; 72 out of the 74 confirmed cases had direct contact with domestic poultry with the exception of two farm workers. According to table 6, children and women respectively are the most vulnerable groups with regards to AHI since they are in close contact with backyard and rooftop poultry. Among the 74 confirmed human cases, 50 cases were children under the age of 18 years old, which accounts for 67.5% from the total number of positive human cases. In addition, among the 27 fatalities, 16 women died, which accounts for around 60% from total number of deaths. Thus, the most vulnerable groups are women who keep poultry in household settings and their children, whom are at very high risk of contracting the H5N1 virus as a result of being unaware of the dangers associated with being in close proximity to the birds. Children often play with household poultry which can be sick or even dead. In just five months, between January 2009 and May 2009, 19 children around the age of two years old were confirmed H5N1 positive in Egypt.

TABLE 6: H5N1 Confirmed Cases by Gender (March 2006 – May 2009)

DATE	WOMEN (>18 years)		CHILDREN (up to 18 years)		MEN (>18 years)		**TOTAL**	
	CASES	DEATH	CASES	DEATH	CASES	DEATH	CASES	DEATH
2006	**6**	**6**	**9**	**3**	**3**	**1**	**18**	**10**
2007	**8**	**6**	**17**	**3**	**---**	**---**	**25**	**9**
2008	**2**	**2**	**5**	**1**	**1**	**1**	**8**	**4**
2009*	**4**	**2**	**19****	**2**	**---**	**---**	**23**	**4**
TOTAL	**20**	**16**	**50**	**9**	**4**	**2**	**74**	**27**

Source: Compiled by author from WHO Situation Updates for Egypt.
* Data for 2009 only covers until 22 May 2009.
** All 19 cases are children around 2-4 years old.

VULNERABILITY OF TRADITIONAL POLUTRY KEEPERS IN FAYOUM

Egypt is located along the main wild birds' migratory route between Asia and Europe; millions of birds migrate all year round searching for warm weather and foods. Scientists are increasingly convinced that at least some migratory water birds are now carrying the HPAI H5N1 virus, sometimes over long distances, and introducing the virus to poultry flocks in areas that lie along their migratory routes[8]. Fayoum is located at the western desert 90 kms south west of Cairo. It is surrounded by desert from three sides and by Beni Suef governorate from its south east. The Fayoum population is 2,575,740 million, according to 2007 census, divided among 6 districts and 163 villages. Fayoum is a hot spot for AHI in Egypt since it is characterized by moderate weather all year round and has two important natural attractions for migratory water birds, which are Qarun Lake and Wadi El Rayan Lake. The location of Fayoum, with its natural attractions, is an important factor that increases its vulnerability to HPAI.

"Egypt remains at high risk of continuing outbreaks of Avian Influenza, despite the recent contraction of the poultry industry and reduction in the density of poultry farms."[9], according to the MoH. This is primarily due to the prevalence of domestic poultry in most of rural households in Egypt, in which the government has almost no control on this traditional poultry sector. Poultry is a very important source of income and an important livelihood strategy for many rural households in Egypt. Official figures estimate that around 30% of the population own poultry in Egypt.

[8] WHO, "Avian Influenza Bird Flu Fact Sheets".
[9] Ministry of Health, Government of Egypt, "Comprehensive Approach to Addressing Avian and Human Influenza in Egypt", 4.

According to the government, 4-5million households currently keep poultry[10]. According to Mrs. Manal Ibrahim, officer at Business Enterprise Support Tools Foundation (BEST) in Fayoum, "before the AHI outbreak almost every household in Fayoum raised poultry." The reason why women, in many rural households, are typically the main owners of backyard and rooftop poultry is because poultry production is one of the most suitable livelihood strategies for poor women since their mobility, income earning opportunities and access to formal markets are restricted. Poultry keepers' duties include: feeding; watering; cleaning; detecting sickness; seeking veterinary care; buying feed and medicine; making decisions about selling; and managing poultry-derived income[11].

Traditional poultry keeping, which is the upbringing of poultry within a household setting, i.e. in backyards and/or rooftops, with flocks of less than 50 birds is the primary factor behind the continuous spread of AHI in Egypt since most positive cases occurred due to direct contact with sick and/or dead household birds. The proximity observed between poultry and humans in traditional rearing systems present a high risk of virus dissemination[12]. Traditional poultry keepers are one of the most vulnerable communities in the Egyptian society. Among the 74 confirmed human cases in Egypt, seven of which are traditional poultry keepers and their children from Fayoum, whom got infected as a result of direct contact with domestic poultry. An informant in Fayoum even believes that real figures are much higher in Fayoum. She continues to argue that, "I know a woman who used to raise poultry her household and was hospitalized for flu-like symptoms and shortage of breath and died; the hospital attributed her death to a respiratory attack." Children under two years old are

[10] The Government of Egypt, "Integrated National Plan for Avian and Human Influenza 2007 – 2008" , Final Draft, May 2007, 5.
[11] Miers, H., "Poverty, Livelihoods and HPAI- A Review", Mekong Team Working Paper No.1, Rome, June 2008.
[12] Ibid.

also a highly vulnerable group in Fayoum. During the field work, it was common to observe children playing in front of their houses with live poultry, which make them at high risk of catching H5N1 virus. On the 2nd of March 2009, the MoH has reported a new two-year old boy confirmed case of avian influenza from Yousef el seddik district of Fayoum Governorate whose symptoms began on 25 February due to direct contact with sick poultry[13].

POLUTRY KEEPING CULTURAL DIMENSIONS IN FAYOUM

Cultural factors have been a crucial element in the way people assess, respond and cope with hazard risk differently. The primary reason behind the spread of AHI is wrong traditional practices associated with poultry bearing at home[14]. Cultural and traditional factors played a crucial role in increasing the vulnerability of poultry keepers' to HPAI as a hazard in Fayoum. This section will examine the cultural dimensions that played a vital role in increasing the vulnerability context of women, their children and their poultry to contract the HPAI H5N1 virus. This section will focus on women poultry keepers' practices and behavioral patterns associated with poultry raising in a household setting in several villages in Fayoum. In addition, traditional slaughtering practices will also be explored. The question is: how can cultural norms and traditional customs of poultry keepers in Fayoum increase the risk of HAPI in poultry and humans?

During my field work in Fayoum, it was observed that poultry bearing at home is a traditional norm among rural households. Almost all the women interviewed raised poultry inside their households even after the AHI outbreaks, with a flock size of 50 birds on average. Having poultry run in front of households and on

[13] WHO, "Avian Influenza Situation in Egypt- Update 5", Available at: http://www.who.int/csr/don/2009_03_02/en/index.html
[14] IDSC, "Poll on Citizen's Awareness about Bird Flu in Egypt".

the streets without being caged is a traditional habit in Fayoum, which is based on certain cultural beliefs. “Poultry keepers have several places to put their poultry in; women can restrict their poultry to rooftops or backyards but they don’t, and this is a traditional habit”, said Mrs. Iman Mohamed, extension officer at Zawyet Al Karatsa CDA in Fayoum district. Leaving poultry in streets and on water banks is a cultural practice in Fayoum villages and has nothing to do with the limited household space. Many women in Fayoum believe that caging their birds will make them lose weight, become unhealthy, and get sick. “Women in Fayoum believe that ducks should swim in canals to be healthy”, stated Mr. Ahmed Mahmoud Abdel Alim, AHI Project Coordinator. During the field research, several women also confirmed this during personal interviews. “Ducks, specifically *Bikini Ducks*, must swim in the canal”, stated Soad Ragab at Zawyet Al Karatsa village in Fayoum district. In addition, Mrs. Iman Mohamed affirmed that there is a wide spread misconception among women in Fayoum that poultry should not be kept in coops for its well-being. She said that “traditional poultry keepers believe that the more the chicken runs here and there, the bigger its size and the better its health.”

Some women claimed that after the AHI outbreak, they altered their practices and confined their birds to rooftops and backyards. However, during transect walks with extension officers, it was apparent that the majority of poultry keepers still did not change their embedded practices of keeping their poultry loose. It was very common to observe chicken in front of the houses in the streets and to view ducks running on stream banks and swimming in canals. Upon entering different households, the researcher smelled poultry all over the place although women claimed that poultry are restricted to rooftops and backyards, and in some instances the researcher even saw feathers lying on the floor. When questioned the reason why

some women still release their poultry in households and on the streets after the AHI outbreaks, the researcher was informed that this was a cultural habit that women are accustomed to. In addition, during one of my focus group discussions at Al Mandara Village in Fayoum District, ironically, a pigeon flew inside the discussion room, and the researcher was told that it belonged to one of the neighbors. The women participating in the discussions were familiar to this incident since they believe that pigeons specifically should not be locked up for its wellbeing. “Pigeons fly anyways; we do not put pigeons in coops because they will die if we cage them”, confessed Manal Attiya. The problem with this practice is that it increases the risk of poultry getting infected with HPAI since there is a high probability that poultry left on streets and on water banks would infect each other. Also, this custom increases the vulnerability of local communities from become infected with H5N1, especially children playing in the streets.

Even the women that confine their poultry to rooftops or backyards confessed to release all kind of poultry from their coops for the entire day. “During the day, I get all of my poultry out of the cages and put them in the sun on the rooftop to eat and run so they can get bigger”, stated Magda Ibrahim in Al Zawyat in Fayoum District. Having the poultry stay for the entire day loose on rooftops or backyards make it at high risk of getting infected from other H5N1 infected wild and migratory birds, which land on rooftops to eat and drink with them and hence can infect domestic poultry. What is even more alarming is that some women revealed that they spend their spare time sitting with their poultry on rooftops. “I go up to the roof and sit with my poultry; I enjoy their company”, stated Doniya Ramdan.

The prevalence of domestic poultry keeping in rural households in Fayoum is widely prevailing due to cultural preference for eating freshly slaughtered *Balady*

birds. All of the women interviewed in Fayoum confessed to like the taste of *Balady* chickens and dislike frozen poultry, what poultry keepers refer to as “white” chicken. "I continue to raise poultry because we like the taste of *Balady* meat that are freshly slaughtered”, according to Sabah Rabie’ in the Fayoum district. She continued to reveal that the “soup that is made out of the *Balady* chicken has a beautiful taste unlike the frozen chicken”. While other women confessed that they dislike the taste and smell of frozen chicken. “Frozen poultry stinks; I get disgusted from the frozen poultry”, stated Sokareya Abdullah. Women in Fayoum argued that they don’t even trust frozen poultry, especially after the AHI outbreaks. “I do not trust the frozen chicken since it might have been sick before slaughtering and freezing it. I would not even know but I am sure that my freshly slaughtered poultry is healthy and that the feed is of good quality”, stated Hayam Aly. From the previous discussions, it is apparent that one of women’s traditional practices is to keep poultry loose all day in streets, rooftops and open yards, which put their domestic poultry at very high risks of getting infected with the H5N1 virus. Thus, women cannot be sure that even there domestic poultry that are fed “home-made feed” are healthy and are not infected with H5N1 until they develop bird flu related symptoms.

Not only do women raise their poultry in household settings, but also several traditional poultry feeding and slaughtering practices are not biosecure. “Bio” refers to “life” and “secure” means “protection”; what the researcher means by biosecurity with regard to traditional poultry keeping is that they adopt clean and hygienic measures. During one of the focus groups, it came to my knowledge that women still feed ducks with their bare hands, commonly known as *tazgeet*. Another alarming practice is mouth-to-mouth feeding of baby pigeons in Fayoum. “I put water in my mouth and spit it inside the pigeons’ mouth so I make sure that they drink after they

are fed since baby pigeons cannot drink alone;", stated Sharbat Mohamed in Al Mandara Village in Fayoum District. Moreover, most women stated that before the appearance of bird flu, they used to slaughter their birds with their bare hands without following any biosecure measures such as wearing gloves, masks, and using disinfectants. "I slaughter my poultry like I am used to by just using my hands and a knife", stated Kawkab Abdel Mawgood.

While other women claimed that after the AHI outbreak they changed their poultry feeding practices and slaughtering methods. In the beginning of any focus group discussion, women alleged that they wear something plastic bags in their hands, put a scarf on their face, wear old clothes, and put on a specific slipper when dealing with poultry; i.e. they claim that they abide by the hygienic procedures advertised on national television. "I have an old *gallabiya* and an old flip-flop specifically for feeding and cleaning under my poultry", stated Karima Abdo. However, usually at the end of the discussions they confess that most of the time they "leave it to God" and feed and clean for their poultry without any preventive measures since they are sure that it is not sick. "Some women claim that they wear a scarf on their face and plastic bags in their hands when slaughtering chicken, but the majority of my family and neighbors do not wear anything in reality", revealed Manal Attiya. The only thing that all women interviewed agreed on doing, in the wake of the AI crisis, was using a big bucket to slaughter the poultry in so that the blood and the feather do not spread on the floor in the house. "I slaughter my chicken in a bucket , then clean the chicken from the feathers inside the bucket, then throw *chlor, i.e.* detergent, on the chicken remainings, and then dispose of it in a plastic bag", said Gamal Eid Ahmed. This procedure was not traditionally followed by the women before the AHI crisis. The

reason behind the alteration in some of the women's behavior and attitudes will be further elaborated in subsequent sections.

Traditional believes affect women's perception to risk and how they will respond to it, thus affecting their vulnerability. Due to certain cultural beliefs, traditional poultry keepers in Fayoum short after the AHI outbreak started restocking without taking adequate preventive measures since they didn't believe that the bird flu is a new event that would threaten their lives. There was a frequent argument brought forward by several women in Fayoum, which is that women believed that the bird flu phenomena is not something new in rural communities; poultry keepers revealed that for ages long before the appearance of avian influenza in Egypt, it was ordinary among poultry keepers to wake up and find their poultry dead. Women didn't have an explanation for it; most women refer to this event as *Al hool,* while some call it *Al hafa;* whereas few women call it *Al fira*. "Our grandparents and parents used to wake up in the morning and find all their poultry dead; we refer to this incident as *Al hool*", stated Mona Nasr El Dine. This statement was repeated eight times during my field work. Mona adds that "nowadays they discovered that it is influenza". Other women stated that "*Al hafa* used to come and take our poultry". This reveals that some cultural beliefs dominate women's perception of avian influenza as a hazard; women attribute the death of their poultry to a cultural construct. These beliefs provide women with a false sense of security and a feeling of resilience against AHI, since "*Al hool* is not something new; we are accustomed to such events", according to one of the women.

In addition, traditional poultry keepers in Fayoum are reluctant to undergo surveillance to their poultry due to certain embedded cultural and religious beliefs. Most of the women interviewed would not even allow a veterinary to servile their

poultry, regardless of being a government employee or a private doctor. The main factor behind their refusal is there fear from evil eyes, commonly known as *hasad.* In addition, during one of the focus groups at Al Mandara Village, women confessed that in the case they were approached by government veterinaries to servile their poultry they will not allow the doctor to see all their flock because they are afraid of *hasad*. During a focus group discussion, women agreed that strangers are not allowed to inspect their poultry since "*hasad* is mentioned in Quran". Karima Abdo stated, "I don't let veterinaries in my *3'esha* because I don't want them to see my poultry as not harm them with his eyes (*hasad*); especially *el roomy* chicken, it can easily get harmed from a stranger's eyes." She continued to say, "If I have a sick chicken I will only show it to the doctor or take it to the veterinary unit to have a medication for it." Moreover, during the field work, it was very obvious that women in Fayoum tend either to lie about their flock size or refuse to give a precise number of their poultry all together because they are afraid of *hasad*. During home visits, women did not allow the researcher to check out the poultry on the rooftops and backyards; the researcher would only observe poultry by coincidence.

AHI IMPACT ON LIVELIHOODS ASSETS OF TRADITIONALPOULTRY KEEPERS IN FAYOUM

Raising poultry at home represents an essential livelihood strategy for poor rural women in Fayoum since it is a domestic low-cost activity that contributes towards household protein consumption and provides a quick source of income. HPAI had a strong negative socio-economic impact on the livelihoods of rural female headed households since poultry "contributed to the economic, nutritional, social and cultural well-being of households"[15], according to a FAO/ WFP rapid socio-economic

[15] FAO, "Highly Pathogenic Avian Influenza: A Rapid Assessment of the Socio-Economic Impact on Vulnerable Households in Egypt", 3.

impact assessment of four governorates in Egypt, one of which is Fayoum. In Egypt, the estimated share of income from poultry is 114 EGP, which is around 45% of household income[16]. Vulnerable households that depends the most on poultry have moved from the "poor" to the "very poor" socio-economic classification and from the "medium" to the "poor" classification[17]. The spread of HPAI have led to massive culling of birds which resulted in decrease in flock sizes. During my field work, it was almost impossible to quantify the numbers of poultry dead as a result of the AHI outbreaks per household since women did not reveal exact numbers. Out of 25 women interviewed, 21 revealed that "most of my poultry got sick and died" while the rest of the women said "some of them died". The FAO/WFP study gives us a quantification of mortality rates among domestic poultry. The "very poor" suffered the most in the AHI crisis since they witnessed a reduction of 92% in absolute bird numbers, while the "poor" and "medium" suffered a reduction of 82% and 72% respectively[18]. The following section will examine the impact of AHI on traditional poultry keepers' assets.

a. Financial Capital

Amongst very poor producers in Egypt, especially female headed households, poultry-derived income from the sale of poultry and eggs as a share of overall income could be as high as 100%, although on average amongst the poor and very poor it was 44%[19]. According an interview with a key informant at BEST, "almost all rural households in Fayoum totally rely on poultry as a livelihood asset". The culling of domestic poultry, in Fayoum, had negative financial consequences since traditional

[16] Ibid, 40.
[17] Ibid, 26.
[18] FAO, "Highly Pathogenic Avian Influenza: A Rapid Assessment of the Socio-Economic Impact on Vulnerable Households in Egypt", 32.
[19] Miers, H., "Poverty, Livelihoods and HPAI- A Review", 8.

poultry keepers relied on their polutry for quick cash. “I used to sell the eggs to feed my children and my poultry; when most my poultry was culled, I had no money to feed my children”, stated Madiha Ragab. In addition, some women also had difficulties repaying their loans since all poultry was dead or culled. “As a result of the AHI crisis, I could not repay the loan I took and I was indebted”, stated Sabah Rabea. Moreover, a common element that was mentioned a lot during the focus group discussions and personal interviews is that some women slaughtered all their healthy poultry when they heard about the outbreak in the news due their fear of getting infected, which badly affected their income levels. This meant that one of the coping strategies of poultry keepers in Fayoum was to destroy one of their vital livelihood assets as a result of the AHI shock.

Consumer fear to eat poultry and eggs had devastating effects on women micro-entrepreneurs in Fayoum. Despite the fragility of the H5N1 virus, destroyed at 75°C, most consumers halted their intake of poultry and eggs leading to a sharp decrease in poultry consumption, which badly affected poultry keepers. As a result, women micro-entrepreneurs in Fayoum were forced to sell their poultry for very low prices to get rid of them, which did not even cover their initial expenses. All poultry was sold with a fraction of their original costs with huge losses; the *Balady* chicken that used to be sold with 15 LE was sold for 1 LE and the *deek roomy* (a rooster), which was originally sold for 200 LE was sold for 20 LE. “The chicken that was usually sold for 15 LE was hardly sold for 5 LE during the initial months of the crisis”, stated Sabah Rabeea owner of a small farm on her rooftop in Zawyet El Karatsa Village in Fayoum District. She continued to add that “I used to buy the one day old chick for 5 LE, which means that during the crisis I did not even cover the initial costs of these chicks such as the feed, water, worker salary…etc”. This abrupt

66 % drop in chicken prices coupled with a prolonged period of consumer fear severely devastated the livelihoods of women micro-entrepreneurs, who relied on poultry and/or eggs for income. Fear from the H5N1 virus was so intense in Fayoum to the extent that an owner of a small *roomy* farm in Fayoum district had released all his flocks in the streets because of fear from the H5N1 virus, according to Mrs. Iman Mohamed, an extension officer. This meant that traditional poultry keepers' primary source of income had disappeared over night.

One of the extension officers in Fayoum district revealed that "during the course of my work with the CRS project, I experienced psychological problems as a result of my close interaction with the women on a daily basis. I was engaged with their livelihoods problems and their inability to repay loans and debts as a result of the AHI outbreaks and the death of their poultry." She explained that "in some instances due to emotional pressure and the knowledge of the inability of some poultry keepers to pay the fines on their loans, I would pay it for them." This stressful work environment drove the extension officer to quit her job at the CDA and her primary source of income; the officer choose to stay at home and resigned from her community job to avoid engaging with women and hearing their sad and stressful stories on a daily basis. She continued to reveal that "I once went home and kept crying after I saw one of the project's clients sit in the sun for hours trying to sell her poultry to be able to repay her debt until she got sun-burned, and when my husband saw me depressed and how my work with poultry keepers affected my psychological status he asked me to quit my job and I instantly did."

During the field work, it was stated that two types of coping strategies were employed by women in Fayoum to resist the AHI shock. First, some women were unable to give up their main source of income and continued raising poultry secretly,

as a coping strategy and took the risk of being infected. However, several women voiced that restocking of poultry just after the AHI outbreaks was very difficult due to several factors. The primary reason behind their inability to restock was the decrease in demand for poultry. Another factor was the lack of initial capital to buy chicks; women were unable to pay even a small deposit to purchase chicks and feed.[20] To overcome these challenges, women would utilize several coping strategies such as borrowing money from their relatives and marketing their products to their neighbors since altering their business was impossible for several women. “My family could not take the risk of entering into other business; we also did not have any money; we were indebt”, revealed Sabah Rabea. The second coping strategy was that some women started diversifying their household income due to the high financial and health risks associated with poultry raising. A huge portion of the women interviewed who altered their income-generating activities changed from poultry to cattle since these two businesses have somewhat similar conditions. Both of them can take place inside the household without having women leave her house and both of them generates products that can be sold for quick cash (such as eggs in poultry and milk in cattle). “I do no raise poultry any more in my household; I shifted to raising sheep, goats and cows, which is a much safer buisness”, stated Rida Ramadan.

b. Human Capital

Human capital is a livelihood asset, which is a mean of achieving livelihood outcomes. Human capital represents the skills, knowledge, ability to labour and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives[21]. Its accumulation can also be an end in itself. Many people regard ill-health or lack of education as core dimensions of poverty and thus

[20] Catholic Relief Services, "Business Development Services to mitigate the AI Risks of Women Micro-entrepreneurs in Egypt", Project Proposal Submitted to UNDP, (July 2006), 2.
[21] DFID, “Sustainable Livelihoods Guidance Sheets”.

overcoming these conditions may be one of their primary livelihood objectives. In the wake of the AHI outbreaks, the premature reduction in the numbers of domestic poultry and sometimes the lack of poultry all together had lead to the reduction in animal protein consumption (poultry meat and eggs) per household, which affected the health of the entire family in general and specifically had a direct impact on children's nutritional value. In Fayoum, most of the women interviewed reveled that they eliminated poultry from their diets for around 4-5 months after the 2006 outbreaks. Most women interviewed (23 out of 25 women) revealed that they reduced their consumption of animal proteins (eggs and poultry meat) and shifted to cheaper sources of protein such as beans, lentils, and chick peas, as a coping strategy. Only one woman stated that her family switched from poultry consumption to occasional meat consumption, which did not affect her families' protein intake. "We did not eat poultry and bought meat, when the outbreak occurred", stated Hayat Abdel Maboud Zayed. In addition, during a focus group discussion one of the participants stated that "we used to boil eggs to put in our children's sandwiches to take to school but there are no eggs anymore."[22] This meant that children's diet was affected on a daily basis as well.

Another manifestation of ill-health was the increased stress and depression among poultry keepers as a result of the AHI outbreaks. Women had experienced severe stress because they started to feel bored and restless since they used to spend plenty of their time in taking care of their birds, feeding, cleaning, preparing feed and selling eggs. "My old mum underwent psychological depression when her poultry died since she was used to their company; they filled the house on her", stated Karima Abdo. That is why the loss of these chicks has generated feelings of worthlessness

[22] Catholic Relief Services, "Business Development Services to mitigate the AI Risks of Women Micro-entrepreneurs in Egypt", 16.

and tediousness. During my field work, one of the things the researcher detected was that poultry keepers regarded their poultry as their babies; it was mentioned several times during personal interviews that “chicks are like babies that should be taken care of”. Sokarya Abdallah revealed that “when I see that my chicks have grown up, I feel thrilled and delighted.” Moreover, some women regarded poultry as a domestic pet and like having them around their house. During one of my personal interviews at a poultry keeper household, the poultry were running and jumping everywhere, the old women was throwing pieces of bread to the chicken while talking with me; she treated here poultry as a house pet. Many women revealed that they missed the company of their poultry during the AHI outbreaks. Another reason behind women’s feeling of anxiety and stress was the fear that they and/or their children get infected with HPAI; women mentioned that they panic when ever their children show any flu like symptoms.

Moreover, children’s education was also affected since income from poultry was used to pay school tuition, private lessons, and school books and materials. “Raising poultry enabled me to secure money for private lessons for my son and daughter”, stated Howayda Mohamed from Snoras district. However after the AHI outbreaks, Howayda stopped giving private lessons to her children in all subjects, as a livelihood coping strategy. Private lessons is an integral element in primary, secondary, and university education in Egypt since failing to take private lessons with school professors might put the children at risk of failing in their examinations. This reveals that the AHI outbreaks had indirect effects on educational achievements.

c. Social Capital

Social capital does not exist in isolation from other livelihood assets; it is regarded as a cross-cutting asset, in which the lack of financial capital and human

capital would definitely affect the livelihood status of individuals thus acting as a barrier to involvement in social activities outside the household[23]. As a household's resources declines (including savings), it becomes harder to spend time and resources on social obligations. "Last week, my cousin got married but I did not go to the wedding because now with no poultry business I cannot afford getting her a gift", stated Nagah Mohamed at Kafr Mahfouz at Tamia District. Even simple neighborly ties based on reciprocity can become difficult to sustain. Most women stated that they no longer invite their neighbors over for lunch or dinner because there is no longer poultry. "I used to invite my neighbor to come and have a breakfast with me after the children goes to school but now I am embarrassed to do so because there are no eggs to serve her", stated Noha Ramadan at Tamia district. When there is a lack of poultry, gifts cannot be bought and even common hospitality may be a burden, leading to increased social isolation for poor women, who are already depressed from the death of their poultry. One of AHI dimension on women's social capital is that poultry keepers in Fayoum revealed that they no longer can make *gam'ia*, i.e. rotating saving schemes, which they were accustomed to as a form of mutual support and assistance. "One of my friends wanted me to make a *gam'ia* with her to buy stuff for her daughter for her wedding (*gehaz*), but I could not afford it", revealed um Ahmed.

[23] Pelling, Mark, *The Vulnerability of Cities: Natural Disaster and Social Resilience*, (London: Earthscan Publications, 2003):165.

BOX 1: HOWAYDA CASE STUDY
26 February 2008. Fayoum Governorate, Snoras District, Al Adel Village.

Howayda's family is composed of three sons and a daughter, attending university, primary and preparatory schools. Her husband is unemployed and Howayda does not have a degree; she dropped out of school in the preparatory stage. Howayda's work is the main source of income to the household. Her Husband asks her to buy him cigarettes without even worrying about the money. The family can be regarded as "very poor". Howayda's household can be considered an extremely vulnerable household since four children and one husband depend entirely on her income.

Howayda went through very tough times in her life, where she didn't have any income. Howayda only had 10 chicks in her house for home consumption. A lot of people encouraged her to raise poultry for a living but she was afraid they would die. After being convinced to raise poultry, she started buying poultry on behalf of women in her village. Since she didn't have enough capital to start her poultry business, she made a *gam'ia* (rotating saving scheme) and collected the initial capital from a group of ten women in order to buy chicks (initially 500 chick) and their feed. She then raised the chicks for 30 days in a room inside her household and sold them. Howayda's business flourished and enlarged immensely from 2000 till 2006. She used to buy and sell thousands of chicks per month. Poultry was the main source of livelihood without any other alternative source; her monthly income was 400 EGP on average.

One day, before the AI was officially announced in Egypt, Howayda discovered that her chicken look sick and that their color turned blue. She went to the village veterinary unit and told them about the symptoms of her poultry but they didn't take her comment seriously. While she didn't know what to do with her dead poultry, she buried them.

As a result of the AI crisis, Howayda lost almost all of her flock. In the beginning, it was very difficult to restock since there was no demand for poultry and she was also afraid to buy chicks and they die. Howayda was forced to close her business for two years (February 2006- February 2008). Just before the AI outbreak, she used to cook three times per week but again she returned to cook only once per week. In addition, she stopped giving private lessons to her children in several subjects because she could not afford them due to the lack of money. She also felt very depressed and sad because suddenly her household was empty from poultry. She used to be very busy feeding, cleaning and managing her small business, and after they have gone she would cry herself to sleep every day.

Howayda could not shift to other business since poultry raising is regarded as a "family friendly" and "quick business"; only after 15 days she can sell her chicks and get quick cash. Any other business will take a long time to generate income. After two years, Howayda started restocking. Howayda's behavior has changed drastically after the AI outbreak; she got a coop on her rooftop for the poultry and keeps every species in a separate coop. She also wears plastic bags in her hands and put on her *neqab* (veil) when dealing with her poultry. She also buy her chicks from a secure source, which is the *Integrated Project for Poultry Production*, known as *Al Azab* project that produces different hybrids of vaccinated and properly raised chicks. She taught herself how to vaccinate her chicks from her regular visits to the *IPPP* and how to prepare hygienic feed. She also checks on her chicks regularly and if they get sick she buys for them medicine from private veterinary pharmacies that can cost her up to 10 EGP per chick because she cannot afford losing them again. Nowadays Howayda's poultry are in good health and her micro business started improving once again due to the increase in demand for poultry and eggs.

AHI TRANSFORMING STRUCTURES AND PROCESSES

Access to *Livelihood Assets* and the formulation of Livelihood Strategies are influenced by the prevailing institutional structures and processes [24] . The *Transforming Structures and Processes* are the levels of governments, institutions, organizations, policies, and legislation, and the civil society that shape livelihoods, which can affect the creation of assets, determine access to assets, and influence rates of asset accumulation. Women's access to livelihood assets is affected by the *Transforming Structures and Processes* determining access to various types of livelihoods strategies. This section will, first, examine the government institutional structure and processes that are mandated to deal with AHI at the strategic, central and local levels in theory. Afterwards, the impact of the government's preventive and mitigation measures on the livelihoods of vulnerable groups in Fayoum will be explored in practice from the perception of traditional poultry keepers. In addition, the role of various local government entities such us veterinary directorate, department and units, will be examined in theory and in practice, also from the perception of traditional poultry keepers in Fayoum that raise poultry as a livelihoods strategy. The final section will deal with the Catholic Relief Services AHI mitigation project and how did it affect the livelihoods strategies of traditional poultry keepers in Fayoum.

GOVERNMENT ROLE IN AHI CRISIS

The GoE, in theory, should play a major role in the AHI crisis by controlling HPAI in poultry through preventive and mitigation measures and reducing the risks of human infections. The institutional structure that is employed to deal with the AHI disaster is formulated along the same there institutional levels of the overall

[24] DFID, "Sustainable Livelihoods Guidance Sheets" .

disaster management framework in Egypt, examined in chapter four, but are made specific to AHI. The; the first level is the strategic level, which is the *Higher Ministerial Committee for Avian Influenza*. This committee is headed by the Prime Minister and involved ministers. The second level consist of *the Supreme National Committee to Combat Avian Flu*, which was convened after the discovery of the first H5N1 virus in birds under the chairmanship of the Minister of Health (MoH) with the participation of the Minister of Agriculture, the Minister of Environment, representatives from the Ministries of Interior, the Army and the Police, concerned governors, and representatives of WHO, FAO and NAMRU-3, in order to monitor and review HPAI development. Ironically, the CMDR is not a member of this committee nor acting as an observer nor giving it any technical support[25].

A lot of the politics take place on the level of these committees. During 2006 and 2007, the MoH has spent 238 million EGP to provide vaccines for human cases and launch various types of campaigns to increase people's awareness of the dangers of HPAI, according to the IDSC[26]. However, after the Minister of Agriculture became the chair of the *Supreme National Committee*, Dr. Talaat Khatib, a professor of food hygiene at Assiut University claimed that there was slowdown in the vaccination of poultry and awareness campaigns during the summer months of 2007, which leading to the spread and growth of the deadly virus in the following winter,[27]. That is why a more ad hoc *AHI Communication Committee* has been also formed to coordinate media and social communication interventions. The chair of the committee is MoH with the membership of USAID, WHO, WB and UNICEF. Dr. Nasr El Sayyed, the spokes person of the *Supreme Committee to Combat Avian*

[25] Dr. Mohamed Fawzy, Head, Department of Crises and Disaster Management (CMDR) at IDSC, Interview by author, 22 June 2008, Cairo, Egypt.
[26] IDSC, "Annual Report of Major Disasters in Egypt during 2007".
[27] Leila, Reem, “Fowl Reaction”, *Al Ahram Weekly Online*, 3 - 9 January 2008, Issue No. 878.

Influenza, announced during a round table discussion at the Ministry of Foreign Affairs on 6 June 2007 with UN agencies and the donor community that AHI in Egypt has a large negative impact on the household poultry sector. He continued to say that one of the main challenges facing the government is the communication and awareness raising component that is supposed to promote behavioural change and address habits which have been existing for thousands of years.

Prevention: Theory vs. Practice

The third local level is the operational arm, which is responsible on implementing central AHI policies and strategies. The primary responsibility for the progressive control of HPAI H5N1 in domestic poultry lies in the General Organization for Veterinary Services at the central level, an entity affiliated to the MoALR. The Veterinary Directorates, Veterinary Departments, and Veterinary Units are its operational braches at the three local levels. In theory, each governorate should have a *Governorate Higher Committee for Crisis Management* headed by the governor and the secretary general of the governorate to combat AHI with representatives from the veterinary and health directorates. In practice this committee does not exist in Fayoum governorate. According to a key informant, "there is no committee to combat AI in Al Faoyum." In addition, according to Dr. Nasr El Sayyed, the spokes person of the *Supreme Committee to Combat Avian Influenza*, "in theory the *Integrated National Plan for Avian and Human Influenza* should be implemented at the village level; however this did not take place in practice"[28]. In theory, the objectives of the *National Plan for Avian and Human Influenza* is to, first, increase resistance of poultry to HPAI, limit the spread of the virus in poultry through early detection and implement measures to contain the spread of the virus through

[28] "Government of Egypt Technical Round Table on Avian and Human Influenza", Minutes of Meeting, Ministry of Foreign Affairs, 6 June 2007.

vaccinations, and second minimize the likelihood of human exposure to infected poultry. However, since the 2006 outbreaks until May 2009, the government fell short of containing HPAI H5N1 in domestic poultry and preventing new outbreaks. During the initial outbreaks in poultry, it was noted that the GOE tends to react rather than act by focusing on short-term emergency response rather than long-term risk reduction. The GoE is facing substantial challenges in achieving effective control of HPAI in poultry. After an eight month interval (from April 2008 till December 2008), positive cases have started to reappear in Egypt since mid December 2008 with very short intervals all had direct contact with domestic poultry. Reducing the vulnerability to HPAI will not be possible unless the incidence of H5N1 virus infection in poultry is reduced. After almost three years of the initial outbreak in poultry, the GoE fell short of being able to prevent future outbreaks in poultry. The case study will first explore the governorate of Fayoum preventive measures in theory and in practice. What are the roles of the various government entities in Fayoum (veterinary directorates, health directorates, agriculture directorates …etc) to decrease the incidence of H5N1 infections in poultry and prevent future outbreaks?

The AHI prevention measures that the veterinary directorate in Fayoum should carry out include ongoing surveillance, sustainable vaccination campaigns, movement control, slaughtering restrictions, import bans, and imposition of biosecure measures. According to a key informant at BEST in Fayoum, “government response to AHI is very weak”; the informant continues to explain, “some women when first discovered their dead poultry, they went to report the cases to the veterinary units in their villages, however they did not get any adequate response.” In Fayoum, during an interview with a doctor at the directorate of veterinary services in Fayoum, it was revealed that there is no clear vertical chain of command between the directorate of

veterinary services at the governorate level, the veterinary departments at the district level, and the veterinary units at the village level. There is no follow up to ensure that the AHI instructions received from the veterinary directorate had reached the poultry keepers. “We are sure that AHI instructions reach the veterinary departments at the district level but we do not know whether it reach the veterinary units at the village level or not”, stated Dr. Soraya Ramadan at Veterinary Directorate in Fayoum Governorate. She continues to say that “there is no monitoring procedure that we follow to make sure that AHI required information reached the units at the villages, except in the case of a confirmed human case.” There are no formal communication channels between the veterinary units in the villages in Fayoum and the poultry keepers.

It was also revealed during interviews that in practice the doctor at the veterinary unit at the village level does not report back to the veterinary department on the district level nor the veterinary directorate at the governorate level in case of outbreak in poultry. In theory, when poultry keepers inform the veterinary of an outbreak in poultry, he should report to the veterinary unit that in turn should inform the veterinary department at the district level, which reports directly to the Directorate of Veterinary Services at the governorate level. In addition, the veterinary at the village level should take samples from infected poultry and send it directly to the veterinary directorate, which will send the sample to the NAMRU labs in Abbasiya, Cairo that would report the results in three days. In the case of confirmed infection, sick poultry should be culled, the household should be disinfected, and the poultry with 500 meters in proximity should be vaccinated. However, a veterinary revealed that, in practice, they don’t report suspected poultry infection o the veterinary department but handle it on the village level. “We do not report sick and dead poultry

to the veterinary department; we show women how to burn their infected poultry", stated Mr. Abdel Wanees Attiya Gibriel, *Me'awen* at Ezbet Gibriel Rashwan veterinary unit at Mansha'et Bany Etman Village in Snoras District. This action is justified on the ground that the veterinaries "are afraid that women would release their sick poultry in the streets as result of being fearful of government culling committees." This reveals that poultry keepers believe that one of the government policies to combat AHI is to cull all suspected poultry.

The initial reaction of local governmental bodies in the wake of the 2006 outbreak was top-down aggressive policies. This created a lack of trust between veterinaries and traditional poultry keepers, which forced women not to report their infected poultry to government officials; they tended to burn, bury, or threw them in waterways. There was a general fear among women from the government since there were rumors that the government is culling all the poultry whether her poultry are sick or not. "We heard that in other villages the culling committee would go into the houses and take all the poultry despite of the poultry keepers' pleas that they are not sick." In addition, the government did not employ any incentive mechanism to encourage poultry keepers to examine their poultry against H5N1 virus. When the researcher discussed, during focus groups the reason behind the reluctance of women to report the death of their poultry, it was evident that there is no incentive for women to report suspicious cases of Avian Influenza. On the contrary, they are extremely fearful of the government to cull their remaining poultry. Furthermore, none reported given any compensation as a result of the losses in their backyard poultry in Fayoum.

Another factor is the lack of trust between traditional poultry keeper from one side and the government from the other side. "We heard that veterinaries go into houses and cull all birds whether infected or not, which is immoral", stated a female

headed household in El Zawyat district. The initial emergency mass culling of birds in Fayoum have scared poultry keepers from dealing with government officials in any way. “Poultry keepers do not trust the government anymore because they told poor people that it is illegal to raise poultry in a household setting and ordered them not to raise poultry in their houses”, revealed Mr. Mohamed Ashraf. He continued to reveal that “whenever there is a surveillance campaign in the area, women hide the birds and pretend that they have no birds out of fear they would be taken or slaughtered without appropriate compensation.”

This lack of trust among poultry keepers and their unresponsiveness to the government vaccination campaigns was mainly due to the wrong practices employed by government veterinaries. In the beginning of the crisis, “the veterinary unit announces in the microphones of the mosque that there will be vaccination in a specified day, and asks the poultry keepers who are willing to vaccinate their poultry to bring them in front of the unit at a certain time”, stated Dr. Ashraf Lutfy EL Sayed, veterinary unit at Mansha’et Bany Etman Village in Snoras District. The veterinary department would send the vaccines and one of the workers at the veterinary unit would vaccinate the poultry. These vaccination campaigns are not obligatory; “only the poultry keepers who wanted to vaccinate would show up”, revealed Dr. Rabeea El Sayed El Araby, Veterinary Unit, Mansha’et Snoras in Snoras District. According to the women, in the beginning of the outbreak, the vaccination campaign took place in a public street, where women had to physically take their poultry to this place to get vaccinated. This was unhygienic procedure and in the same time unpractical for many women. “I will have to catch my poultry then put them in coops and afterwards I have to physically take them to the veterinary unit; this is impossible”, stated a women from Al Mandra village. Moreover, the workers who vaccinated the poultry

used the same needle to vaccinate all chickens, stated an informant, which might cause the spread of the virus from sick poultry to healthy ones. This means that in the early days of the outbreak the government could have been increasing infections in poultry and spreading the disease by using the same needle for hundreds of poultry and vaccinating all poultry in one place thus increasing the risks of infection. These wrong practices resulted in the death of a lot of domestic poultry just after they were vaccinated, according to the women. As a direct result, women started refusing to vaccinate their poultry because they were made to believe that the government wants to kill their birds. This led to a wide spread misconception from AHI vaccination among traditional poultry keepers in Fayoum.

Another factor behind the governments' failure to prevent AHI outbreaks in poultry is the weakness of veterinary services at the village/district level attributed to the low numbers of veterinarians, limited personnel trained in surveillance, and limited financial and logistical capabilities to carry out comprehensive vaccination campaigns[29], matters still not resolved three years after the initial out breaks. According to poultry keepers in Fayoum, the veterinary authorities do not carry out any surveillance of backyard poultry and regular vaccination campaigns. According to an informant, who refused to publish his name, "veterinaries do not carry out surveillance campaign in Fayoum since they do not have such capacity." In addition, almost all women interviewed stated that there was no surveillance carried out by veterinaries to their backyard poultry. During a focus group discussion in Mansha2et Baghdad village, E'tbar Abdel Azim revealed that "there is no government surveillance at all; if veterinaries come to the village they give us quick awareness raising instructions or carry out very limited vaccination campaigns." Moreover, the

[29] The Government of Egypt, "Integrated National Plan for Avian and Human Influenza" .

lack of ongoing comprehensive vaccination campaigns is another reason behind the prevalence of HPAI H5N1 virus among backyard poultry. Three years after the AHI outbreaks, vaccination campaigns are still not enough. Howayda in Ezbet El Adel in Snoras district stated, “veterinary units conduct vaccination campaigns only twice per year for backyard poultry and they should be carried out every three months.” In addition, most of the women interviewed revealed that in the beginning of the crisis, for almost two years, they were not regularly approached by veterinaries to vaccinate their poultry. In addition, a key informant stated that “veterinaries are government employees at the end of the day; they only show up for two hours for vaccination campaigns and then disappear.” However some women stated that, during the last year, there was a slight improvement in the vaccination campaigns. The veterinary units introduced a card system, in which every poultry keeper is given a vaccination card upon vaccinating her poultry by government authorities with the number of poultry vaccinated and date.

Another reason behind the failure of government bodies to limit the spread of the virus in poultry is the poor enforcement of legislation dealing with AHI. With respect to live bird shops and markets, it was evident that all live markets and small poultry shops have reopened in Fayoum after ceasing to function for couple of months after the initial outbreaks. During my individual interviews, several women confessed to buy their chicks from Tuesdays and Fridays live bird markets. “I buy my chicken from the Friday weekly market”, stated Sabah Mohamed. That is why the existence of Tuesdays and Fridays live bird markets is an integral element in rural villages in Fayoum since there is a high demand for live poultry. To the extent that two of the extension officers at the CDA at AL Zawyet confessed to buy their chicks from Friday markets. “Live bird markets only stopped for 5 months after the initial

outbreaks but have reopened in Fayoum because merchants and workers complained since their livelihoods depend on poultry without any supervision from local authorities", stated Mrs. Mona, one of the extension officers. In addition, some women claimed that there are restrictions on transportation of live poultry to other governorates. "Trading live poultry is restricted within Fayoum governorate and these live poultry cannot be transported to other governorate", stated Iman Mohamed. However, one of the things that the researcher observed during the field work is that there were several street vendors selling live poultry on the Fayoum-Cairo high way, which reveals that movement of live birds between governorates is still prevailing.

Mitigation: Theory vs. Practice

The government, in theory, should be responsible for mitigating the negative socio-economic impact of AHI and supporting the livelihoods of poor communities heavily dependent on poultry for income and food security. Key mitigation measures include compensation, re-stocking schemes, and low interest micro-credit schemes. However, in practice traditional poultry keepers were not compensated by the government for a variety of reasons. Women in Fayoum stated that poultry keepers were not compensated for the loss of their poultry. "No one approached me for compensation", stated a female headed house hold in Tamiah district. The GoE declared that they do not have the necessary funds to compensate the millions of traditional poultry keepers. That is why women do not have any incentive to report sick poultry. On the contrary they are afraid to report any sick poultry and put their entire flock and their neighbors' poultry at risk of being culled by government authorities. According to a doctor at the veterinary unit in Mansha'et Bany Etman in Snoras District, "we cull all poultry within 500 meters diameters around the infected house." Women suggested that the government should encourage poultry keepers to

report sick poultry by giving them a motivation. For example, Howayda in Snoras district suggested that “the government can offer poultry keepers to disinfect polutry coops free of charge if they report sick poultry and assure them that they will not cull healthy poultry.” In addition, the government should develop restocking packages, compensation schemes and/or micro-credit schemes for poultry keepers as an incentive to report infected poultry.

The veterinary units in the Fayoum governorate did not provide traditional poultry keepers with restocking guidelines in practice. Poultry keepers started restocking without taking adequate preventive measures since their livelihoods depended on raising poultry for income and consumption,. This was due to the lack of veterinary units to disseminate necessary information, undergo effective surveillance and vaccination. During one of my home visits at Al Fayoum District, the women explained, “I had stopped raising poultry for about 5 months but when I felt that the danger disappeared and when I got sufficient information about Avian Influenza from the television, I started restocking once more.” However, when I asked her about the exact symptoms of H5N1 in poultry and in humans, ironically she could not answer. This tendency of restocking without having basic information on preventive measures was revealed in several personal interviews. Another woman claimed that she taught herself all preventive measures from the television awareness raising advertisements but she only mentioned that “I put my legs in a bucket of water when exiting from the rooftop.” When the researcher asked her whether she uses any gloves, masks or even wear plastic bags in her hands when slaughtering poultry, she stated “I leave it to God.”

CRS PROJECT: BDS TO MITIGATE AHI IMPACTS ON WOMEN IN FAYOUM

Mitigation is considered one of the most effective medium to long term DRR approaches which incorporates risk reduction measures into regular investment projects[30]. That is why the Catholic Relief Services (CRS) designed a project to mitigate the AHI impacts through BDS and micro-finance components. Since there is little information in the literature reviewed relating to the effectiveness of mitigation schemes on women's livelihoods, the researcher will dedicate this section to examining the CRS two years mitigation project funded by UNDP entitled *The Application of Business Development Services to Mitigate the Risks of AHI to Women Micro-entrepreneurs in Fayoum and Minya Governorates in Egypt* from September 2006 to September 2008 and later extended to February 2009. This section will examine the impact of the CRS mitigation project on the livelihoods of women poultry keepers in Fayoum.

This project is very interesting since CRS/Egypt partnered with Business Enterprise Support Tools Foundation (BEST) in Fayoum as an implementing partner, which is the umbrella organization that facilitates project outreach and the selection of CDAs, assisted by two Community Development Associations (CDA's) in two districts in Fayoum to implement the project. This multi-stakeholder cooperation reveals a lot of the dynamics of project implementation at the grassroots level as will be revealed in the following sections. The overarching goal of the CRS project is "women micro-entrepreneurs operating in the Egyptian traditional poultry industry have minimized their vulnerability to Avian Influenza epidemic." There are two strategic objectives for the project; first, micro-entrepreneurs operating in the

[30]UNDP- DHA, "Disasters and Development", Disaster Management Training Programme, Second Edition, Prepared by R.S. Stephenson, (New York: UNDP, 1994), 8.

backyard sector are resilient to epidemics such as Avian Influenza, and second to enable women micro-entrepreneurs diversify their livelihoods. According to Mr. Mohamed Ashraf, CRS AHI Project Manager, the project will improve the livelihoods of women and mitigate the impact of AHI on traditional poultry keepers through two components, which are fostering Business Development Services (BDS) and providing micro-finance loans. For the purpose of this study, the researcher will only examine and access the effectiveness of the first component, which is the BDS. With regard to BDS activities, they are the following: (1) educational and awareness raising sessions; (2) joint home visits; (3) inter-firm cooperation (horizontal linkages); and (4) coordination of vaccination campaigns.

With regard to educational awareness sessions, BEST and the CDAs organized Avian Influenza related awareness sessions for women poultry keepers. They are intended to educate the women on biosecure methods of raising their poultry and stimulate the demand of traditional poultry keepers in the areas of veterinary services. These sessions were facilitated by technical experts in the field of veterinary services that would educate women on good and biosecure practices in poultry raising, feeding and slaughtering. However, in practice, these awareness sessions at Zawyet Al Karatsa were not participatory nor targeted the entire community at Al Zawyat. The awareness sessions were attended by limited number of women. The low level of attendance jeopardized other project activities since during awareness sessions the project staff would identify, first, women that are willing to vaccinate their poultry; second, identify potential women who want to participate in business-to-business visits; and third, identify women willing to take loans from the project. After realizing that the failure to secure adequate attendance will risk the success of the entire project, the project the staff used to serve women juice and biscuits as an incentive to attend

the awareness raising sessions. After a while the project manager thought of linking this incentive measure with the project itself and started giving women related in kind hand-outs such as detergents, medical masks, and gloves free of charge to be of direct relevance to the project goals and objectives. This approach eventually worked but with limited success. During an interview with an extended family consisting of four sister-in-laws living next door to the Al Zawyet CDA, the researcher discovered that although they claim that Zawyet Al Karatsa CDA provides extensive awareness raising sessions to the community, they do not know basic information on the symptoms of HPAI in humans. Moreover, this family revealed that male members of the household servile their poultry; they act as their private veterinaries. “When we feel there is something wrong with the chicken, we show it to my husband and he will tell me if it is sick or not.” When the researcher asked them whether they attended any of the AHI awareness sessions conducted by Zawyet Al Karatsa CDA, they said that their husbands do not allow them to go. This reveals that gender-power relations play a huge role in households in Fayoum. This reveals that the project staff failed to carry out an elaborate needs assessment that would identify such challenges and work on it by designing other activities that overcome these gender power relations. For example, the CDAs could have carried out house-to-house awareness raising briefings to overcome this problem, which took place in a late stage during the project cycle.

The success of the educational sessions carried out in Zawyet El Karatsa is in question. During observatory walks, the researcher discovered that the house just in front of the CDA still had poultry inside the house. What is even more ironically, just a few meters in front of the CDA door, there was poultry running in the alley. In addition, during the personal interviews with BDS beneficiaries, a small proportion stated that they wore something in their hand when dealing with poultry and put a

scarf on the mouth and nose when dealing with their poultry. Also, very few women reported to wear specific clothes for dealing with the poultry. “We got used to dealing with our poultry with our bare hands.” Most of the women interviewed mentioned that they don’t wear anything when slaughtering their birds because they are sure that there are healthy. “We will not slaughter a chicken that we are hesitant that it is not good”. Nonetheless, one of the positive alterations in attitudes and behavior is poultry keepers’ awareness that children should be kept away from rooftops and backyards where chicken are kept. In addition, some project beneficiaries stopped keeping ducks and chicken together to avoid inter-species infection. However, most of women interviewed do not use coops to isolate their poultry.

With regard to the vaccination campaigns, the project relied on the awareness sessions to collect lists of women who are willing to vaccinate their poultry. Afterwards, the project staff linked these women with the veterinary units at the district level by coordinating vaccination campaigns to make sure that the project beneficiaries made use of these campaigns free of charge. This would not have been possible without the political support and back up of the project steering committee headed by the Secretary General of the Fayoum governorate. One of the challenges that faced the implementation of vaccination campaigns was the unwillingness of traditional poultry keepers to vaccinate their poultry. Despite efforts to persuade women clients in Fayoum to adhere to the project initiative to vaccinate most of the households and backyard poultry prior to autumn when the new flu season starts, Fayoum project staff only carried out two vaccination campaigns. The reasons cited include mistrust as the local residents appear not to have confidence in the government's abilities to control AHI and believed that through these vaccination campaigns, they would be likely targeted for future culling campaigns. Some other

poultry keepers believed that vaccinations would kill their birds since in several instances some vaccinated poultry died immediately after they get vaccinated and the project staff was to be blamed for it. Mr. Mohamed Ahsraf, CRS Project Manager attribute this phenomena to the fact that some birds, especially ducks, are carrier to the virus and do not show any symptoms and die as a result of being vaccinated, since the vaccine is a portion of the virus itself. However, this can also be attributed to wrong unhygienic practices like vaccinating all poultry with only one needle, discussed earlier in the government section, which resulted in the deaths of a lot of poultry after being vaccinated. These incident resulted is the spread of wrong misconceptions among poultry keepers that made women refuse to vaccinate their poultry, which further complicates the vaccination campaigns that introduced mistrust between the women and the project staff.

Moreover, Mr. Mohamed Ashraf stated that when CRS was trying to link BDS clients with vaccination campaigns, it was often not successful for a variety of reasons. With respect the wrong vaccination procedures employed by government veterinaries, the project manager lobbied the Governorate Secretary General at the *Project Coordination Steering Committee on the Governorate Level*, to change these wrong practices and to carry out house-to-house vaccination campaigns, in which each women would have her personal needle to vaccinate her poultry with. Fortunately, the Secretary General agreed and gave orders to representatives of veterinary directorates, health directorates, agriculture directorates, and social solidarity directorates to employ this new technique. Now a day's vaccination campaigns at the village level are carried out door to door. Each house keeping that vaccinated her birds receives an official card showing the date of vaccination and the number of vaccinated poultry. The lack of cooperation of the local veterinary services

in Fayoum is another reason mentioned for the failure of the vaccination campaigns. For example, in one instance, although the CRS project invited a government veterinary to a vaccination campaign organized by the CDA, he never showed up[31].

Another BDS activity of the project was to create horizontal and vertical linkages between traditional poultry keepers from one side and veterinarians, chick wholesalers, large poultry producers, the local government, and micro-entrepreneurs to increase poultry keepers' resilience to AHI and improve their coping strategies. Among the linkages activities, CRS and BEST in Fayoum in coordination with the Fayoum Poultry Research Center (FPRC) managed to conduct nine field visits for 35 micro-entrepreneurs from Fayoum to FPRC to learn more about hygienic poultry-raising practices and different breeds of Balady chicken available for purchase and benefit from these linkages with large-scale farms. In addition, CRS and BEST arranged a visit to around 50 women from various districts at Faoyum to the Integrated Project for Poultry Production (IPPP), known as *Al Azab*, in Fayoum that is under the auspices of the local Fayoum governorate, which sell different hybrids of vaccinated poultry. CRS project organized a very successful field trip for its beneficiaries to the IPPP in Fayoum and successfully linked women with such credible source of day old chicks. A number of the traditional poultry keeper bought vaccinated chicks from the IPPP, which show the change in behavioral patterns. "I stopped buying any poultry from middlemen and I get all my chicks from *Al Azab* project." In addition, other BDS beneficiaries affirmed that they obtain their chicks from secure sources such as government poultry labs and small private farms. Several women were too afraid to buy their chicks from live markets. Soad Ragab said, "I am afraid to buy chicks from the live weekly markets because the poultry my neighbor

[31] Catholic Relief Services, ""Business Development Services to mitigate the AI Risks of Women Micro-entrepreneurs in Egypt", 4th Quarterly Progress Reports, Submitted to the UNDP, 21/10/2007.

bought from the market was sick and died." However, the effectiveness of such activity is in question since some women did not benefit from these linkage services and still buy there chicks from unsecure sources. Ironically, one of the project extension officers did not know anything about the IPPP project. When asked about her source of chicks, she stated that she bought them from street merchants or live markets. This extension officer is the one who should raise women awareness and guide them to secure sources of chicks. It was evident that the project needed to raise the extension officer's awareness.

In addition, BEST and the CDAs assisted traditional poultry keepers to conduct home visits for pioneering and innovative businesswomen in Senrow, El-E'elam villages in the Abshway district that employ safer chicken coop models. The project beneficiaries were introduced to good practices employed by other women by seeing models of chicken coops in their houses. These visits were made in light of positive relationships between CRS and BEST and the Agriculture Directorate in Fayoum. This activity filled an existing gap in the BDS project design since it did not initially include any poultry coops to overcome the cultural issue of mixing different species and mixing poultry of different ages. Mr. Mohamed Ashraf, project manager, realized this shortcoming and planning to integrate this component in the design of the next project phase. He wants to take the design of licensed chicken coops by the Ministry of Agriculture and replicate the model for the project clients at a reduced cost. However, this also meant that CRS did not engage in an elaborate needs assessment to detect the needs of poultry keepers and their traditional customs in the initial design of the project.

Project Challenges

One of the early challenges that faced the project, which was reflected upon during one of the interviews with CRS project staff, is the inability of the project steering committee to identify and recruit credible CDAs. Even after choosing two CDAs in two districts in Fayoum (Zawet Al Karatsa CDA and El-Mazatly CDA), El Mazalty CDA had a lot of requirements. There was conflict of interest between CRS and Al Mazalty CDAs since it wanted to recruit its project staff and to have full control of the micro-credit component. However CRS was skeptical of the full control of the CDA resources and decisions, and CRS was also afraid that the CDA would manipulate the project activities and funds. To avoid this, the CRS suggested to only rent the CDAs premises to be the project facility and made sure that the extension officers hired by the CRS project manager are from the same villages they are working in. The efforts to persuade Al Mazalty to adhere to the CRS demands slowed down the implementation of the project in Fayoum. Zawyet Al Karatsa CDA agreed, however Al Mazatly refused CRS offer. CRS had to replace Al Mazalty CDA with Kafr Mahfouz CDA, which disrupted project activities on the short-term.

Despite the legitimate concern of the CRS, their decision to alienate the CDA from managing the project has jeopardized the local ownership of the project. The CDA employees were not part of the project staff and the CRS externally hired staff was the ones implementing the project in the communities. In addition, the CDAs had no say in the selection of staff and were not even part of the recruitment process of extension officers that are from the local community. This resulted in the creation of several obstacles that hindered the effective implementation of the project such as the unwillingness of traditional poultry keepers to attend awareness sessions in the CDAs since they are not familiar with the project staff. Moreover, the CRS did not work on

building the capacity of local CDAs since it did not provide the CDAs with any technical, managerial nor financial support, except for the premises rent.

Another related challenge to the CDAs degree of involvement, the CRS project manager confessed that recruiting qualified staff was a main implementation obstacle during the initial phases of the project. Despite wide dissemination of job announcements, the number of qualified candidates who applied for the jobs was very limited. Moreover, some of the staff nominated for these positions declined in the last minute due to more competitive salary offers from other NGOs. Therefore, staff recruitment and training took more time than what has been originally planned.

Another challenge that faced the project was the sustainability of BDS activities after the project's duration elapsed. The project staff claimed that poor traditional poultry keepers are not willing and cannot afford to pay any nominal fees for the BDS activities they make use of. One of the project staff stated, "It became a custom that women do not pay for technical assistance and capacity building activities." However, during interviews with women, most of them expressed their willingness to contribute nominal fees to the awareness raising activities and BDS services. The researcher cannot tell whether the issue of financial sustainability of the project is really a challenge or the project staff is making it up to justify their attempts to mobilize additional resources from UNDP. The sustainability of such local initiatives is extremely crucial to the prevention and mitigation of AHI at the local level; without these BDS efforts, the achievement of sustainable livelihood outcomes of poultry keepers will be not attained.

CHAPTER 6
CONCLUSION

This study attempted to explore the linkages between disaster risk and sustainable livelihoods both in theory and in the Egyptian context. The hypothesis of the study was that low level hazards are magnified by high vulnerabilities, which led to increase in disaster risks among vulnerable groups in Egypt. Impacts of disasters will destroy people's livelihood assets as a result of income and capability deprivation and thus result in the failure of the attainment of sustainable livelihood outcomes in the Egyptian society.

During the last decade the literature on disasters has moved from conceptualizing disasters as only "acts of God" to examining the "root causes", "dynamic pressures", and "unsafe conditions" generating vulnerability on one side and the physical exposure to hazard on the other side. The study showed that disaster risk is the product of the interaction of both hazards and conditions of vulnerabilities, and not solely the result of the physical hazard, as claimed by the "dominant disaster paradigm." In the 1970s and early 1980s, the vulnerability approach to disasters started dominating the disaster-development discourse and criticized the dominance assumption in disaster research that disasters are "natural" events. Disaster risk is a combination of the factors that determine the potential for people to be exposed to particular types of hazards and also the vulnerabilities that fundamentally depend on how social systems and their associated power relations impact on different social groups[1]. In other words, it was revealed that to accurately detect disasters risks, we should not only examine the different types of physical hazards, but also explore the

[1] Wisner, Ben et al., 7

cultural, social, economic, and political processes that produce the "progression of vulnerability". Thus, the "technical solutions" to preventing disasters with their high costs were no longer the mainstream view, and a new approach to disaster prevention and mitigation emerged in theory, which focused on the underlying causes of increased vulnerability to disaster risks.

In practice, the interconnection between disaster risks, vulnerabilities, and livelihoods in the case of Egypt was confirmed in this study. The study showed that Egypt is at risk of destructive "rapid-onset" natural disasters (primarily earthquakes and floods), susceptible to a large number of human-made disasters (road, maritime, train accidents and fires), and also vulnerable to "slow onset" hybrid disasters (Avian and Human Influenza and landslides). While exploring the potential hazards and recent disasters that have occurred in Egypt, it was revealed that there is a positive correlation between disaster risks and deep rooted population vulnerabilities in Egypt; the higher the vulnerabilities, the increased risks of disasters. Thus, the study showed that Egypt has a relatively high disaster risk that is a product of a variety of hazardous events coupled with the high vulnerabilities of the Egyptian population (such as population expansion in hazardous areas, rapid urbanization, and prevalence of urban illegal settlements). Vulnerabilities are both causes and effects of disasters in Egypt; for example, the cause of the 1992 earthquake's devastation was primarily due to the high vulnerability of affected communities as a result of high population density and lack of enforcement of building codes. It was also revealed how different types of disasters had various negative ramifications on communities' livelihoods. The 1992 earthquake, for example, resulted in high number of people left homeless and led to the increase of illegal settlements, which indirectly led to a further increase in affected population's vulnerabilities.

In addition, it was revealed that disasters in Egypt exert an enormous challenge to achieving the Millennium Development Goals (MDGs). For example, the recurrence of flash floods in governorates of Upper Egypt and the concentration of poverty in these governorates is an indication of the correlation between disasters, vulnerability and poverty, which will definitely affect the attainment of MDG1, eradicating extreme poverty and hunger. The GoE's *MDGs Midpoint Assessment Reports* (2004 and 2008) failed to refer to any disaster that occurred in Egypt and thus did not explain how these disasters could have posed a challenge to the achievement of the MDGs. The GoE did not recognize the socio-economic impact of disasters on achieving the MDGs; the mid-term progress reports did not even regard the increased disaster risk as one of the challenges to development. That is why the fourth chapter examined the government's political will with respect to the issue of disasters.

After examining the legal framework and the institutional arrangements within the GOE at the strategic, central, and local levels that deal with disasters, it was apparent that there is a lack of political will manifested in the absence of an adequate legal and institutional setup for DRR. It was showed that the disaster-related legal and institutional frameworks in Egypt are still trapped in the civil defense and crisis management eras respectively. The current disaster management institutional arrangements do not incorporate risk analysis in their functions, which reveal that DRR is still not a national priority. All government entities examined at the strategic, central and local levels are currently involved with post-disaster emergency management. The current disaster management framework is mainly concerned with preparedness, emergency response, and relief and rescue efforts. The GoE moved in the 1990s from a "civil defense" age to a "disaster management" phase. However, this institutional shift from civil defense to disaster management did not

bring about a shift in the legal system, which meant that all institutions working on disaster management in Egypt do not have legal foundations. This study showed that the current disaster laws in Egypt, formulated in the outdated war context of the 1950s, are still trapped in the ideologies of the civil defense era.

The study revealed how the GoE did not undergo any fundamental changes necessary to incorporate DRR concepts, policies and mechanisms in its pre-disaster planning since it would involve sensitive political measures. The "dominance of structural engineering measures and disaster preparedness measures"[2] reflects their inherently lower political sensitivity when compared to the problems that arise from genuinely reducing risks and vulnerabilities such as the redistribution of income, the reduction of poverty levels, the tackling of the root causes of inequality and communities disempowerment[3]. Managing risk depends on political commitment by policy makers since the politicians find it difficult to redirect priorities from visible development goals to abstract long term possible threats[4]. Decision makers claim that it is hard to gain votes by pointing to a disaster that did not even take place. Thus, the GoE tends to react to disasters on an *ad hoc* basis by formulating an *Inter-ministerial Disaster Committee* to deal with the disaster after it has taken place; this committee deals with the symptoms of disasters rather than the causes as were the case in the AHI crisis, Al Salam Ferry disaster, several train accidents, and recently the Swine Flu disaster. In addition, other national priorities often contest with reduction of disaster risks since there is a prevailing misconception among government officials that development efforts such as employment creation, poverty reduction, and educational reform will automatically reduce disaster risks.

---

[2] Lavell, Allan, "The Impact of Disasters on Development Gains: Clarity or Controversy", 2.
[3] Ibid.
[4] Christoplos, Ian, Mitchell, John, and Anna Liljelund, "Re-framing Risk: The Changing Context of Disaster Mitigation and Preparedness", *Disasters*, Volume 25, Issue 3, 195.

Moreover, the lack of political will among decision makers in Egypt with respect to pre-disaster planning explains the failure of the government in reducing disasters risks. The lack of government commitment to reduce disaster risk lies in the lack of knowledge, lack of a culture of prevention, and limited resources. The GoE recently incorporated some risk reduction rhetoric in its disaster work in the wake of international DRR trends. Government officials use DRR terminology and inaccurately affiliate it with crisis management processes. In addition, government officials lack the awareness and understanding of pre-disaster planning; they misinterpret prevention and mitigation and confuse them with preparedness, the phase just before a full-blown disaster takes place. DRR efforts are currently inaccurately associated with the occurrence of disasters among policy makers. The researcher believes that government officials are "risk illiterate" since they are unaware of DRR knowledge that is a direct result of the lack of a "culture of prevention", a nation-wide phenomena spread among policy makers as revealed by interviews with government officials at IDSC and with veterinaries during the field work. In the wake of increased international pressures to "obtain commitment from public authorities to implement DRR policies", the *National Committee for Crisis and Disaster Management* was renamed *National Committee for Crisis and Disaster Management and Reducing its Risks* without undergoing any substantive amendments in the committee's functions, which reveals the lack of genuine political will to shift to DRR.

The GoE has failed to adequately institutionalize the DRR agenda, and thus put vulnerable populations at high risk of potential hazards. Egypt still has a long way to go by first gathering political will, then by formulating new laws and decrees that would incorporate DRR measures, and finally by creating an institutional structure conducive to reducing disaster risks. The case study further showed that the

political commitment of various government entities in Fayoum governorate is still lacking in the wake of the AHI crisis.

The field findings have revealed that the AHI crisis destroyed vulnerable population livelihood assets and disrupted the attainment of sustainable livelihood outcomes of traditional poultry keepers in Fayoum. The study showed that cultural norms and traditional practices increased the vulnerability of poultry keepers in Fayoum and made them more susceptible to AHI. The poultry raising traditional customs and improper slaughtering practices are among the root causes behind the high risk of AHI among women in Fayoum. One of the improper poultry raising practices is the free movement of poultry inside and outside the household, which can be dealt with by confining poultry to coops and thus decreasing the vulnerability to AHI. The case study also showed how the AHI crisis had destroyed several livelihood assets of women who raise poultry as part of complex livelihood strategies. The AHI outbreaks in domestic poultry have led to, among other results, the loss of one of the primary sources of household income, loss of protein consumption, increased stress and depression among poultry keepers, and the refraining of women from engaging in social obligations. The case study further reveled how women in Fayoum were forced to alter their livelihood strategies and adopt new coping strategies to deal with the repercussions of the AHI crisis by shifting their micro businesses to cattle production.

The field work also revealed, according to traditional poultry keepers in Fayoum, that the government veterinary services in Fayoum were unable to prevent the spread of avian influenza in poultry due to lack of resources and qualified personnel. Highly centralized local institutions with weak financial and human resource capacities were a disabling environment for reducing AHI risks in Fayoum. In addition, poultry keepers were fearful of government personnel and perceived them

as threat to their livelihood survival. During interviews with poultry keepers, it was revealed that women tend to get rid of sick or dead poultry by throwing them in water ways, burying them, or burning them in garbage areas and they do not report any suspected infection to government authorities since they are afraid that the government would cull the entire flock. The women even believed that the government is trying to kill their poultry through government vaccination campaigns; this widespread misconception among women in Fayoum grew out of the fact the poultry was dying after being vaccinated. Shortly after the 2006 outbreaks, the government veterinaries were vaccinating birds with the same needle, which is an improper vaccination practice that might have perpetuated and deepened the AHI crisis. This misunderstanding was even reinforced among women in the wake of the government early approach to cull thousands of birds during initial outbreaks and the national campaign to urge women to stop raising poultry all together.

Through closely examining the CRS project in Fayoum, the case study revealed that although the CRS BDS activities had some positive impacts on the livelihoods of poultry keepers in two villages in Fayoum, some of these mitigating activities were not successfully implemented in practice due to the top-down design of the project; the project staff failed to carry out needs assessment prior to the project design, which led to the limited success of, for example, the awareness raising and educational sessions. The study showed that the awareness raising campaigns and educational sessions conducted as part of the BDS project activities altered some of the incorrect slaughtering practices of beneficiaries; however the majority of traditional unhygienic poultry raising behaviors were not successfully changed due to the inability of the project to tackle embedded cultural norms. In addition, the vaccination campaigns that were coordinated by the project staff had limited

effectiveness since the project relied on government veterinaries that did not have the incentive and the capacity to carry out proper vaccination campaigns in the first place.

To conclude, AHI impacts have been proved to affect the livelihoods of vulnerable groups in Fayoum. Attending to small scale frequent bird flu events and the vulnerabilities associated with them is a preventive measure to ensure that these random outbreaks would not turn into a full-blown massive disaster in the long term and thus would deeply affect vulnerable populations' livelihoods. Institution building with the aim of improving the quality of governance is required to reduce disaster risks. The GoE should substitute "disaster driven" decision making with "hazard and vulnerability driven" policies at all levels of government. The GoE should work on reducing the vulnerability part of the equation (Disaster risk = Hazard x Vulnerability) since preventing the hazard from taking place is usually very difficult or even impossible to achieve. On the other hand, reducing the vulnerability context is relatively easier to address through dealing with the cultural, social, economic, and political dimensions creating these vulnerabilities. The increased impacts of disasters in Egypt is due to the tendency to treat symptoms rather than causes; the reason for this bias is because vulnerabilities are deeply rooted, and any fundamental solution of the root causes of vulnerability would involve massive political change. With regard to the AHI crisis, the numbers of positive human cases will continue to increase rapidly in Egypt until the GoE seriously addresses the "root causes", "dynamic pressures", and "unsafe conditions" behind the vulnerability of rural poultry keepers to the HPAI H5N1 virus. The livelihoods of traditional poultry keepers in Egypt will only be sustainable when they can cope with and recover from AHI stresses and shocks and maintain their livelihood assets.

BIBLIOGRAPHY

PRIMARY SOURCES

Ashraf, Mohamed. Avian Influenza Project Manager, Catholic Relief Services, Egypt Program. Interview by author, 22 June 2008. Cairo, Egypt.

Al Aghory, Said Aly Hassan. General Manager and Crisis and Disaster Management Focal Point, Ministry of Local Development, The Arab Republic of Egypt. Interview by author, 22 January 2008. Cairo, Egypt.

Catholic Relief Services. "Business Development Services to Mitigate the AI Risks of Women Micro-entrepreneurs in Egypt." Project Proposal Submitted to UNDP, July 2006.

FAO/ WFP. Ellen Geerlings (ed.) "Highly Pathogenic Avian Influenza: A Rapid Assessment of the Socio-Economic Impact on Vulnerable Households in Egypt." (Cairo: Food and Agriculture Organization and World Food Programme, 2007).

Fawzy, Mohamed. Director, Department of Crises and Disaster Management at IDSC. Interview by author, 22 June 2008. Cairo, Egypt.

The Government of Egypt "National Report and Information on Disaster Reduction." Presented to the World Conference on Disaster Reduction in Kobe- Hyogo, Japan. January 2005.

_____. "Integrated National Plan for Avian and Human Influenza 2007-2008." Final Draft. (May 2007).

_____. "Interim National Progress Report on the Implementation of the Hyogo Framework for Action." Cabinet Information and Decision Support Center, November 2008.

_____.. Ministry of Economic Development. "Arab Republic of Egypt: Poverty Assessment Update." Volume 1. World Bank, September 2007.

_____. Ministry of Health and Population. "Comprehensive Approach to Addressing Avian and Human Influenza in Egypt." 30 November 2006. Presented at the Fourth International Conference on Avian Influenza, Bamako, Mali 6 - 8 December 2006.

Hedaya, Rania. Program Analyst, United Nations Development Programme, Cairo Country Office. Interview by author, 5 November 2007. Cairo, Egypt.

Ibrahim, Heba. Official, Researcher, Department of Crises and Disaster Management, IDSC. Interview by author, 14 January 2009. Cairo, Egypt.

IDSC. “Manuel: General Procedures for Crisis and Disaster Management.” Crisis and Disaster Management Department, August 2006. (in Arabic).

_____. "Annual Report of Major Disasters in Egypt during 2006." Crisis and Disaster Management Department, January 2007. (in Arabic).

_____. “Workshop on Facing Floods Disasters and How to Prevent Floods Risks.”Crisis and Disaster Management Department, March 2007. (in Arabic)

_____. "Annual Report of Major Disasters in Egypt during 2007." Crisis and Disaster Management Department, January 2008. (in Arabic).

_____. "Annual Report of Major Disasters in Egypt during 2008." Crisis and Disaster Management Department, December 2008. (in Arabic).

_____. “Poll on Citizen's Awareness about Bird Flu in Egypt” IDSC: Public opinion Poll Center, February 2008. (in Arabic).

_____. “Road Accidents in Egypt.” IDSC. Information Report. Issue 2. No. 21, September 2008. (in Arabic).

Al Jawaldeh, Ayoub. Deputy Country Director, World Food Programme, Egypt Country Office. Interview by author, 15 May 2008. Cairo, Egypt.

Luke, Jean. Regional Planning Officer for Avian and Human Influenza, United Nations Office for the Coordination of Humanitarian Affairs (UN-OCHA), Egypt. Interview by author, 23 June 2008. Cairo, Egypt.

Mohaghegh, Mostafa. Head, United Nations International Strategy for Disaster Reduction (UN/ISDR) Regional Office for West Asia and North Africa (WANA). Interview by author, 15 May 2008. Cairo, Egypt.

Pagani, P. “Interventions for Improving Bio-security of Small-scale Poultry Producers in Egypt.” FAO Consultancy Report, 2007.

Riad, Samir. "Report on Disaster Risk Management in Egypt." (Cairo: Submitted to UNDP, Office, February 2007).

UNICEF “Avian Influenza Survey: Knowledge, Attitudes and Practices of the Egyptian Public.” Final Study Report. (Cairo: El Zanaty and Associates, July 2007).

SECONDARY SOURCES

ActionAid. “Disaster Risk Reduction: Implementing the Hyogo Framework for Action (HFA).” An Action Aid International Briefing Paper.

Ahrens, Joachim and Rudolph, Patrick M., "The Importance of Governance in Risk Reduction and Disaster Management". *Journal of Contingencies and Crisis Management* Vol. 14 No. 4 (December 2006): 207-220.

Allen, K. “Vulnerability Reduction and the Community-based Approach: A Philippines Study”. In Mark Pelling (ed.) *Natural Disasters and Development in a Globalizing World.* (New York: Routledge, 2003): 170–184.

Anderson, M.B. "A Re-conceptualization of the Linkages between Disasters and Development". *Disasters* Volume 9 Issue 1 (1985):46 – 51.

Anderson, M.B. and P.J. Woodrow *Rising from the Ashes: Development Strategies in Times of Disaster.* **(**London: Lyne Rienner Publishers, 1998).

Arnold, Margaret (ed.) “Natural Disaster Hotspots Case Studies”. **(**Washington, D.C.: World Bank, 2006).

Aysan, Y. “Putting Floors Under the Vulnerable.: Disaster Reduction as a Strategy to Reduce Poverty.” Presentation at the World Bank Consultative Group for Global Disaster Reduction Meeting: June 1-2, 1999.

Bankoff, Gregory. “Rendering the World Unsafe: ‘Vulnerability’ as Western Discourse.” *Disasters* 25(1) (2001): 19-35.

Bankoff, Gregory, Georg Frerks, and Dorothea Hilhorst. *Mapping Vulnerability: Disasters, Development, and People.* London: Earthscan, 2004

Bendimerad, Fouad. “Disaster Risk Reduction and Sustainable Development”. Paper Presented at the World Bank Seminar on *The Role of Local Governments in Reducing the Risk of Disasters.* Istanbul, Turkey, 28 April – 2 May 2003. (Washington D.C.: World Bank, 2003).

Benson, C. and E.J. Clay. "Understanding the Economic and Financial Impacts of Natural Disasters" Disaster Risk Management Series paper No. 4. (Washington DC: World Bank, 2004).

Benson, C. and J. Twigg. "A Scoping Study: Measuring Mitigation: Methodologies for Assessing Natural Hazard Risks and the Net Benefits of Mitigation." (Geneva: ProVention Consortium Secretariat, 2004).

Berke, P.R. "Natural Hazard Reduction and Sustainable Development: A Global Assessment." Working Paper No. S95-02. Center for Urban and Regional Studies. *Journal of Planning Literature* Vol. 9 No. 4 (1995): 370-382.

Blaikie, Piers, Ben Wisner, and Terry Cannon (eds.) *At Risk : Natural hazards, People's Vulnerability, and Disasters.* **(**London ; New York : Routledge, 1994).

Buckle, Philip. "Building Partnerships for Disaster Risk Reduction and Natural Hazard Risk Management." Preliminary Regional Stocktaking of Natural Hazard Risk and Disaster Management Capacity in the Middle East and North Africa. World Bank and UN/ISDR, 14 April 2007.

Bull-Kamanga, L., K. Diagne, A. Lavell, E. Leon, F. Lerise, H. MacGregor, A. Maskrey, M. Meshack, M. Pelling, H. Reid, D. Satterthwaite, J. Songsore, K. Westgate, and A. Yitambe."From Everyday Hazards to Disasters: The Accumulation of Risk in Urban Areas." *Environment and Urbanization,* 15(1) (2003): 193-204.

Cannon, T. "Vulnerability Analysis in Disasters." In D. Parker. (ed.) *Floods*. (London: Routledge, 2000): 43-55.

Cannon, T., J. Twigg, and Rowell, J. "Social Vulnerability, Sustainable Livelihoods and Disasters." (London: University of Greenwich, Natural Resources Institute, 2003).

Chambers, Robert. "Rapid Rural Appraisal: Rationale and Repertoire." *Public Administration and Development* 1(2) (1981): 95-106.

_____. "Rural: Rapid, Relaxed and Participatory." Discussion Paper 331. (Brighton, UK: University of Sussex, Institute of Development Studies, 1992)

_____. "The Origins and Practice of Participatory Rural Appraisal." *World Development* Vol. 22 Issue 7 (July 1994): 953-969.

_____. "Participatory Rural Appraisal (PRA): Challenges, Potentials and Paradigm." *World Development* Vol. 22 Issue 10 (October 1994): 1437.

Chambers, Robert and Gordon Conway. "Sustainable Rural Livelihoods: Practical Concepts for the 21st Century." IDS Discussion Paper 296. (Brighton, UK: University of Sussex, Institute of Development Studies, February 1992).

Christoplos, Ian. "Actors in Risk." in Mark Pelling (ed.) *Natural and Development in a Globalizing World.* (London ; New York : Routledge, 2003): 95-109.

Christoplos, Ian, John Mitchell, and Anna Liljelund. “Re-framing Risk: The Changing Context of Disaster Mitigation and Preparedness.” *Disasters* Volume 25 Issue 3 (2001): 185-198.

Coppola, Damon P. *Introduction to International Disaster Management.* (UK: Elsevier, 2007).

Cuny, Frederick C. *Disasters and Development.* (Oxford: Oxford University Press, 1983).

Dahl, Robert A. “The Behavioral Approach in Political Science: Epitaph for a Monument to a Successful Protest.” *The American Political Science Review* 55 (4) (Dec. 1961): 763.

Davis, I., B. Haghebaert, and D.Peppiatt. "Social Vulnerability & Capacity Analysis." Workshop: 25–26 May 2004. (Geneva: ProVention Consortium, 2004).

Degg, M. “The 1992 ‘Cairo earthquake’: Cause, Effect and Response.” *Disasters* Vol. 17 No.3 (1993):226-238.

DFID. “Sustainable Livelihoods Guidance Sheets.” (UK: DFID, 1999). Available at: http://www.livelihoods.org

_____. “Policy Brief: Disaster Risk Reduction: A Development Concern." (UK: DFID, 2005).

_____. “ Policy Paper: Reducing the Risk of Disasters- Helping to Achieve Sustainable Poverty Reduction in a Vulnerable World." (UK: DFID, March 2006).

FAO. Ibrahim, A., L. Albrechtsen, J. Rushton, M. Upton, and N. Morgan (eds.) "Market Impacts of HPAI Outbreaks: A Rapid Appraisal Process, Egypt." (Rome: FAO, January 2007).

FAO/OIE. "The Global Strategy for Prevention and Control of H5N1 Highly Pathogenic Avian Influenza." (Rome: FAO, March 2007).

FAO/OIE/WHO. “Technical Report on Highly Pathogenic Avian Influenza and Human H5N1 Infection.” Workshop 27-29 June 2007. Rome, June 2007.

Fordham, Maureen. "Gender, Disaster and Development." in Mark Pelling (ed.) *Natural Disasters and Development in a Globalizing World.* (London and New York : Routledge, 2003): 57-74.

Fukuda-Parr, Sakiko. " The Human Development Paradigm: Operationalizing Sen's Ideas on Capabilities." *Feminist Economics* 9(2-3) (2003):301-317.

Gopalakrishnan, Chennat, and Norio Okada. “Designing New Institutions for Implementing Integrated Disaster Risk Management: Key Elements and Future Directions.” *Disasters* Vol. 31 Issue 4 (Dec. 2007):353-372.

GTZ. "Linking Poverty Reduction and Disaster Risk Management." (Germany: GTZ, 2005).

Gunewardena, Nandini and Mark Schuller (eds.). *Capitalizing on Catastrophe: Neoliberal Strategies in Disaster Reconstruction.* (UK: AltaMira Press, 2008).

Handmer, J. “Human Rights and Disasters: Does a Rights Approach Reduce Vulnerability?” Prepared for the 2001 Annual Hazards Workshop. University of Colorado, Boulder, 2001. Available online at http://www.radixonline.org/resources/handmer-humanrights.doc

Hasan, M. Emrul and Hussain F. “Effects and Implications of High Impact Emergencies on Microfinance: Experiences from the 1998 Floods in Bangladesh.” SANMFI Occasional Paper 1. (Dhaka: South Asian Network of Microfinance Initiatives, 1998).

Herrera, L. “Participation in School Upgrading: Gender, Class and (In)action in Egypt .” *International Journal of Educational Development* 23(2) (March 2003):187-199.

Homan, Jacqueline. “A Culturally Sensitive Approach to Risk? ‘Natural’ Hazard Perception in Egypt and the UK.” *Australian Journal of Emergency Management* 16(2) (2001): 14-18.

_____. “Social Construction of Natural Disaster: Egypt and the UK.” In Mark Pelling (ed.) *Natural Disasters and Development in a Globalizing World.* (London and New York: Routledge, 2003): 141-156.

Hewitt, Kenneth. *Interpretations of Calamity.* (London: Allen and Unwin, 1983).

_____. “Sustainable Disasters? Perspectives and Powers in the Discourse of Calamity.” in J. Crush (ed.) *Power of Development*. (London: Routledge,1995).

IFRC. "World Disaster Report 2001". (Geneva: IFRC, 2001).

_____. "World Disaster Report 2002: Focus on Reducing Risk". Walter, Jonathan (ed.) (Geneva: IFRC, 2002).

_____. “What is VCA? An Introduction to Vulnerability and Capacity Assessment." (Geneva: IFRC, 2006).

Kent, G. “The Human Right to Disaster Mitigation and Relief.” *Global Environmental Change Part B:Environmental Hazards* Vol. 3 Issues 3-4 (September-December 2001):137-138.

Krantz, Lasse. “The Sustainable Livelihood Approach to Poverty Reduction.” Division for Policy and Socio-Economic Analysis. SIDA, February 2001.

Lavell, Allan. “The Impact of Disasters on Development Gains: Clarity or Controversy.” Paper Presented at the IDNDR Programme Forum, Geneva, 5-9th July 1999.

Lewis, James. *Development in Disaster-Prone Places: Studies of Vulnerability.* (UK: Intermediate Technology Publications, September 1999).

Lewis, Dan, and Jaana Mioch. “Urban Vulnerability and Good Governance.” *Journal of Contingencies & Crisis Management* Vol. 13 No. 2 (June 2005):50-53.

Malilay, J. et al. “Mortality and Morbidity Patterns Associated with the October 12, 1992 Egypt earthquake.” *Earthquake Spectra* 11(3) (1995): 457-476.

McEntire, D.A. "Reflecting on the Weakness of the International Community during the IDNDR: Some Implications for Research and its Application." *Disaster Prevention and Management* Vol. 6 Issue 4 (1997): 221-233.

Medd, Will, and Simon Marvin. "From the Politics of Urgency to the Governance of Preparedness: A Research Agenda on Urban Vulnerability." *Journal of Contingencies & Crisis Management* Vol. 13 Issue 2 (Jun2005):44-49.

Miers, H. (2008) “Poverty, Livelihoods and HPAI- A Review.” HPAI Pro-poor HPAI Risk Reduction. Mekong Team Working Paper No.1. Rome: June 2008.

Munich Re. “World Map of Natural Hazards.” *(*Munich: Munich Reinsurance Group, 1998).

_____. “Annual Review of Natural Disasters 2000.” (Munich: Munich Reinsurance Group, 2001).

Niekerk, Dewald van. “Local Government Disaster Risk Management.” In *Municipal Management: Serving the People.* Gerrit Van der Waldt, Annelise Venter, and Gerrit Van der Waldt (eds.) (South Africa: Juta and Company Limited, 2008).

Oliver-Smith, Anthony. “Disasters and Forced Migration in the 21st Century.” In *Understanding Katrina: Perspectives from the Social Sciences.* (New York: Social Science Research Council, 2006).

Pelling, Mark. (ed.) *Natural Disasters and Development in a Globalizing World.* (London; New York : Routledge, 2003).

_____. *The Vulnerability of Cities: Natural Disaster and Social Resilience.* (London: Earthscan Publications, 2003).

Perry, R.W. and Quarantelli, E.L. (eds) *What is a Disaster?: New Answers to Old Questions.* (Philadelphia: Xlibris, 2005).

Quarantelli, E.L. *Disasters: Theory and Research.* (California: Sage, 1978).

_____. *What is a disaster? Perspectives on the Question.* (London: Routledge, 1998).

Quarantelli, E.L. and R. R. Dynes. "Response to Social Crisis and disaster" *Annual Review of Sociology* 3(23) (1977): 49.

Al-Sayed, A.; Vaccari, F., and G. F. Panza. **"**Deterministic Seismic Hazard in Egypt." *Geophysical Journal International*, Vol. 144 Issue 3 (2001):555-567.

Scoones, I. "Sustainable Rural Livelihoods: A Framework for Analysis." IDS Working Paper No.72, June 1998.

Schipper, Lisa and Mark Pelling. "Disaster Risk, Climate Change and International Development: Scope for, and challenges to, integration." *Disasters* Vol. 30 Issue 1 (Mar2006):19-38.

Shaluf, Ibrahim M. "An Overview on Disasters." *Disaster Prevention and Management* Vol. 16 (5) (2007): 687-703.

_____. "Disaster Types." *Disaster Prevention and Management* 16, 5 (2007):704-17.

Smith, Keith. *Environmental Hazards: Assessing Risk and Reducing Disaster.* (London: Routledge, 2004).

Swiss Re. "Natural catastrophes and man-made disasters in 2006." Sigma Study, 2006.

Thomalla, Frank, Tom Downing, Erika Spanger-Siegfried, Guoyi Han, and Johan Rockström. "Reducing Hazard Vulnerability: Towards A Common Approach Between Disaster Risk Reduction and Climate Adaptation." *Disasters* Vol. 30 Issue 1 (March 2006): 39-48.

Thorson, Anna, and Karl Ekdahl. "Avian Influenza: Is the world on the verge of a pandemic? ... and can it be stopped?" *Journal of Contingencies & Crisis Management* Vol. 13 Issue 1 (March 2005): 21-28.

Twigg, John . "Vulnerability and Capacity Analysis." Tools for Mainstreaming Disaster Risk Reduction. Guidance Note No. 9. ProVention Consortium.

UNDP. “Synthesis of UNDP Expert Group Meeting: Integrating Disaster Reduction with Adaptation to Climate Change”. Workshop 17–19 June 2002, Havana, Cuba.

_____. "A Global Report: Reducing Disaster Risk: a Challenge for Development" (Geneva: UNDP Bureau for Crisis Prevention and Recovery, 2004).

_____. E. Plutt (ed.) " Low Level Risk Management." (Geneva: UNDP Bureau for Crisis Prevention and Recovery, Disaster Reduction Unit, 2006).

UNDP- DHA “Disasters and development.” Disaster Management Training Programme. Second Edition. Prepared by R.S. Stephenson. (New York: UNDP, 1994).

UN-ISDR. "Living with Risk: A Global Review of Disaster Reduction Initiatives." (Geneva: International Strategy for Disaster Reduction, United Nations Inter-Agency Secretariat, 2004).

_____. “Progress report on the review of implementation of the Yokohama Strategy and Plan of Action for a Safer World of 1994”. Inter-Agency Task Force on Disaster Reduction. (Geneva: United Nations Publications Centre, 2004).

_____. "Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters." World Conference on Disaster Reduction, Kobe, Japan 18-22 January 2005.

_____. "Guidelines for National Platforms for Disaster Risk reduction." (Geneva: International Strategy for Disaster Reduction, United Nations Inter-Agency Secretariat, 2007).

_____. “Words into Action, Implementing the Hyogo Framework for Action”. (Geneva: International Strategy for Disaster Reduction, United Nations Inter-Agency Secretariat, 2007).

_____. “Indicators of Progress: Guidance on Measuring the Reduction of Disaster Risks and the Implementation of the Hyogo Framework for Action.” (Geneva: United Nations secretariat of the International Strategy for Disaster Reduction, 2008).

UNSIC. “Response to Avian Influenza and State of Pandemic Readiness”. Third Global Progress Report. UN System Influenza Coordinator (UNSIC) and World Bank, December 2007.

Vermaak, Jaco, and Dewald Van Niekerk. "Disaster Risk Reduction Initiatives in South Africa". *Development Southern Africa* Vol. 21 Issue 3 (Sep. 2004): 555-574.

Wahlke, John C. “Pre-Behavioralism in Political Science.” *The American Political Science Review* Vol. 73 No. 1 (Mar.1979): 9-31.

Weichselgartner, Juergen. “Disaster Mitigation: The Concept of Vulnerability Revisited.” *Disaster Prevention and Management* 10 (2) (2001): 85-94.

White, Howard. “Combining Quantitative and Qualitative Approaches in Poverty Analysis.” *World Development* 30(3) (2002):511-522.

Wisner, Ben. “Disasters: What the United Nations and its world can do.” *Environmental Hazards* 3(3-4) (2001): 125-127.

_____. "Risk and the Neo-liberal State: Why Post-Mitch Lessons didn't Reduce El Salvador's Earthquake Losses". *Disasters* 25 (3), (2001): 251-268.

_____. “Vulnerability in Disaster Theory and Practice: From Soup to Taxonomy, then to Analysis and finally Tool.” Disaster Studies of Wageningen University and Research Centre. 29/30 June, 2001.

_____. "Sustainable Suffering? Reflections on Development and Disaster Vulnerability in the Post-Johannesburg World." *Regional Development Dialogue* 24 (1) (Spring 2003): 135-148.

Wisner, Ben; and Jorn Birkmann. “Measuring the Un-Measurable: The Challenge of Vulnerability.” (Germany: Institute for Environment and Human Security, United Nations University, 2006).

Wisner, Ben, P. Blaikie, T. Cannon, and I. Davis. *At Risk: Natural Hazards, People’s Vulnerability and Disasters.* (London and New York: Routledge, 2004).

World Bank. “Building Safer Cities: The Future of Disaster Risk.” Disaster Risk Management Series No.3. Kreimer, Alcira, Margaret Arnold, and Anne Carlin (eds.)Disaster Risk Management Series. Washington, D.C.: Disaster Management Facility, 2003.

Yates, R. et al. “Development at Risk.” Brief for the World Summit on Sustainable Development, Johannesburg, South Africa, 26 August - 4 September, 2002.

APPENDIX 1

LIST OF INTERVIEWEES

DISASTER RISK REDUCTION FIELD WORK

1) Semi-Structured Interviews with Government Officials

- Dr. Mohamed Fawzy, Director, Department of Crises and Disaster Management (CMDR), Information Decision and Support Center (IDSC), Prime Minister's Office;
- Ms. Heba Ibrahim, Senior Researcher, Department of Crises and Disaster Management (CMDR) , IDSC;
- Mr. Said Aly, Disaster and Crisis Management Coordinator, Ministry of Local Development, Egypt.

2) Semi-Structured Interviews with UN Officials

- Dr. Mostafa Mohaghegh, Head, United Nations International Strategy for Disaster Reduction (UN/ISDR) Regional Office for West Asia and North Africa (WANA);
- Dr. Ayoub Al Jawaldeh, Deputy Country Director, WFP Country Office, Egypt;
- Mr. Jean Luke, Regional Planning Officer for Avian and Human Influenza, United Nations Office for the Coordination of Humanitarian Affairs (UN-OCHA), Egypt;
- Ms. Amany Nakhla, Regional Planning Analyst, United Nations Office for the Coordination of Humanitarian Affairs (UN-OCHA), Egypt;
- Ms. Rania Hedaya, Program Analyst and Disaster Prevention and Recovery Focal Point, UNDP Country Office, Egypt.

CASE STUDY FIELD WORK: FAYOUM GOVERNORATE

1) Semi-Structured Interviews with Government Officials at Fayoum

- Dr. Soraya Ramadan, Animal Care ,Veterinary Directorate, Fayoum Governorate
- Dr. Ashraf Lutfy EL Sayed, Veterinary Unit, Mansha'et Bany Etman Village, Snoras District.
- Dr. Rabeea El Sayed El Araby, Veterinary Unit, Mansha'et Snoras Village, Snoras District.
- Mr. Abdel Wanees Attiya Gibriel, *Me'awen*, Veterinary Unit, Ezbet Gibriel Rashwan, Mansha'et Bany Etman Village, Snoras District.

2) Semi-Structured Interviews with CRS Project Staff:

- Mr. Mohamed Ashraf, CRS AI Programme Officer and Project Coordinator;
- Mrs. Sabah Mohamed, Extension Officer at Zawyet El Karatsa Village, Fayoum District;
- Mrs. Mona Mohamed Ali, Extension Officer at Zawyet El Karatsa Village, Fayoum District;
- Mrs. Iman Mohamed, Micro-Credit Officer at Zawyet El Karatsa Village, Fayoum District;
- Mrs. Iman Ragab, Extension Officer at Al Mandara Village, Fayoum District;
- Mrs. Nora Rabei Soliman, Micro-Credit Officer at Manshaet Baghdad Village, Fayoum District.

3) Interview with BEST Staff (headquarters in Fayoum)

- Mr. Ahmed Mahmoud Abdel Alim, AHI Project Coordinator
- Mrs. Manal Ibrahim El Dessouky, Marketing Specialist

4) Semi-Structured Interviews with Women (Total of 25 Interviews)

Ten Semi-structured Interviews at Zawyet El Karatsa Village (Known as Al Zawyat), Fayoum District:

- Sabah Rabeea
- Sayeda Al Sayed
- Amal Mohamed
- Hayat Abdel Maboud Zayed
- Sahar Attwa
- Rabab Qurany
- Afaf El Sayed Ibrahim
- Sayeda Qutb
- Sokareya Abdullah
- Soad Ragab El Sayed

Five semi-structured Interviews at Manshaet Baghdad Village in Fayoum District:

- Laila Ewiess Mohamed
- E’tbar Abdel Azim Tawfik
- Gamal Eid Ahmed
- Magda Abdel Tawab
- Nora Soliman

Five semi-structured Interviews at Kafr Mahfouz Village, Tamia District:

- Sayeda Said Mohamed
- Noha Ramadan
- Nadia Ewiss Aly El Said
- Nagah Mohamed Mahmoud
- Laila Mohamed Salem

Five semi-structured Interviews at Al Adel Village, Snoras District:

- Howayda Mohamed Hassan
- Kawkab Abdel Mawgood
- Sabah Khamees
- Nadia Shafei
- Safaa Hamoda

5) Four Focus Groups in Fayoum Governorate (Total of 40 women)

First Focus Group in Zawyet El Karatsa Village, Fayoum District

- Magda Ibrahim
- Zeinab Abd Al Wahab
- Amal Anwar Hassanein
- Mona Nasr El Dine
- Sabah Mohamed
- Rida Ramadan Abdel Aziz

Second Focus Group in Al Mandara Village, Fayoum District

- Sharbat Mohamed
- Samar Ragab
- Manal Attiya
- Karima Abdo
- Darahem Shaaban
- Hayam Aly
- Zeinab Sheraei
- Maha Mohamed
- Doniya Ramdan

Third Focus Group in Al Adel Village, Snoras District

- Howayda Mohamed Hassan
- Sabra Abdel Mawgood Rashed
- Fatma Nady
- Marzoka Kamel
- Madiha Sayed
- Nora Sayed
- Manal Fathy
- Hala Hashem
- Intesar Qourany
- Sahar Rizk
- Hayam Qourany
- Amal Sawy

Forth Focus Group in Al Adel Village, Snoras District

- Rawya El Sayed
- Fayza Abdel Mowlah
- Latifa Abdel Mawgood
- Sahar El Said
- Redah Abdel Tawab
- Fatma Moawad
- Hamdeya Awad Allah
- Doha Abd Al Ged
- Wessam Hamed
- Marwa Mohamed Abd El All
- Neama Abd El All
- Marwa Atteya
- Sabah Toba

6) Two Case Studies in Fayoum Governorate:

- Howayda Mohamed Hassan , El Adel Village, Snoras Dirstrict
- Sayeda Al Sayed, Zawyet El Karatsa Village in Fayoum District

APPENDIX 2

SEMI-STRUCTURED INTERVIEW QUESTIONNAIRE

Household Information:

1) Name:
2) District/Village:
3) Marital Status:
4) Age:
5) Level of education:
6) Number of family members (of which children)?
7) Number of people who regularly eat meals in your home?
8) Number of people earning income in your home? Who? What is their job?
9) Total household income?
10) Your contribution to this income, approximately, if any?
11) Who is the principal decision-maker in your household? (head of household):
12) Consumer assets owned in the household?
13) Do you own land?
14) Total earnings per month during the summer? During the winter?

Poultry Raising Information/Cultural Habits:

1) Do you currently own poultry?
2) If No, did you own poultry before the AI outbreak?
3) If Yes, what is your flock size? Is it different species? Or all chickens?
4) Where do u keep them? Do you keep them together (if different species)?
5) What is the purpose for raising poultry?
6) Do your children help you take care of the poultry? How?
7) Do your children play with the poultry? How?
8) Do you slaughter poultry?
9) How do you slaughter poultry? Do you wear gloves/plastic bags or masks?
10) If yes, do your children engage in slaughtering poultry with you?
11) Origins of poultry ? From where?
12) Is there in your village live bird markets and shops for selling fresh birds?
13) Do you prefer eating fresh slaughtered poultry or frozen ones? Why?
14) Did you vaccinate your birds? by whom? If not, why didn't you vaccinate them?
15) Trading of poultry?
    a. How much poultry do you sell a week/month? Does this vary in different seasons?
    b. How many eggs do you sell a week/month? Does this vary in different seasons?

Avian and Human Influenza:

1) Do you know what the Avian Flu is? How did you first hear about it?
2) Can you describe it? Of the following, which do you believe were symptoms of Avian Flu for your poultry?
3) Has the Avian Flu affected your livelihood? (If so) In what ways?
4) Has AI affected the quantity of your poultry? (If yes) To what degree?
5) How did AI affected your eating habits/ consumption patterns?
6) Has AI affected your household income? How?
7) Have Avian Flu affected your behavior? How?
8) Do you take any other precautions to protect against Avian Flu? (If so) What kind?
9) Do veterinaries come to your village to do surveillance?
10) What do u do when veterinaries carry out surveillance campaigns?
11) Did any of your poultry died recently? What did you do?
12) Do you think women should contact officials when they find dead poultry? Why?
13) If you're poultry died from AI, what did you do with your dead poultry? Or what will you do if this happen?
14) What did you do with your remaining live poultry?
15) How do you think Avian Flu is spread amongst the poultry?
16) How do you think AI can be transmitted to humans?
17) Do you fear being infected with Avian Flu yourself? Do you fear your children bet infected?
18) What are the measures you take to prevent yourself from the disease?

Vulnerable Population Opinion on Government Role:

1) What do you think the government <u>is doing</u> to prevent the spread of Avian Flu?
2) Did you vaccinate your chicken in the government vaccination campaigns? Why?
3) Where you compensated for the loss of your poultry?
4) What do you think the government <u>should do</u> to prevent the disease from spreading?

CRS Project Beneficiaries (BDS Clients):

1) Did you have economic activities/enterprises other than poultry before you were affected by Avian Flu? (If so) What kinds of activities?
2) Since the Avian Flu affected your enterprise, have you shifted to another type of activity other than poultry? (If so) What kind of activities? Why?
3) How did this project help you better cope with the AI crisis?
4) What did you learn from the awareness raising sessions and any other BDS services?
5) From where you buy your poultry? *Al Azab project*? If yes, was CRS the linkage?
6) Are you willing to pay a nominal fee in the future for BDS activities? Why?