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Global Governance In Climate Change and Climate Refugee Issues Bangladesh Case Course No. Gov 505 Supervisor: Professor Dr.

Emdad ul Haque Programme Coordinator & Course Coordinator MAGD Program, BRAC University Bangladesh Submitted by Muhammad Shahanoor Alam Roll No 08272011 Semester # 2 Batch # 3 Master of Arts in Governance and Development [pic] | |[pic] | | | Institute of Governance Studies | | | | BRAC University, Bangladesh | | STATEMENT OF AUTHORSHIP I certify that the attached dissertation is my original work. No other person’s work has been used without due acknowledgement in the text, or in ritten form. This material has not been presented elsewhere or extracted, in whole or in part, from a document presented by me for another qualification or another institution. Muhammad Shahanoor Alam Date: 20 May 2009 Global Governance In Climate Change and Climate Refugee Issues Bangladesh Case Contents Abstract Chapter 1: Introduction 1. 1 Setting the Scene 1. 2 Unveiling the Reality 1.

3 Fathoming the Problem 1. 4 Settling the Crisis Chapter 2: Global Governance Paradigm in the Context of Global Climate Change 2. 1 Introduction 2. 2 Global Governance 2. 3 The Rise of Global GovernanceChapter -3 Global Governance and Refugee Paradox 3. 1 Refugee and Global Governance 3.

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1 Introduction 4. 2 Bangladesh Climate Characteristics 4. 3 The Context of Climate Related Conditions 4. 4 Climate Change Impacts in Bangladesh 4. 5 National Adaptation Programme of Action Chapter -5: Climate Refugee Paradigms in Bangladesh 5.

1 Climate Refugee Symptom in Bangladesh 5. 2 Climate Refugee Paradigms in Bangladesh . 3 Some Hot Spots of Climate Refugees in Bangladesh 5. 4 Climate Refugee: Internal Displacement Vs International Migration 5. 6 Climate Refugee: Seasonal Migration 5. 7 Conclusion Chapter – 6: Conclusion Bibliography Abstract The climate change has become a global and multidisciplinary issue which has affected throughout the world.

Now, the climate change neither a debate nor an isolate issue rather it has across all over the sectors of the life cycle human being and it is a man-made phenomenon (Intergovernmental Panel on Climate Change IPCC – Fourth Assessment Report 2007). There is overwhelming scientific evidence of sea level rise, extreme weather events and drought and water crisis which are the global threat to human being (UNDP, 2007). Climate change is not an isolate issue for environmental governance or climate governance rather it poses a vital politico-economic issue. As already it has been proved that climate change erodes human freedom and limits choice through affecting all the development activities of the world. Especially, the poor have been bearing the burden of climate change.

The cost of climate change has more bearing on future generations than the present. Therefore, the world should come together in forging a global response to this global crisis. Therefore, here my proposition is that in order to address the climate change and climate change impact, the isolate effort from climate governance or environmental governance perspective is not sufficient rather it demands a global governance system. To analyze my proposition, here I would like to use Bangladesh as a case of climate change because according to the IPCC report, Bangladesh would be the worst affected country by the sea level rise in terms of loss of land. The climate change firstly and severely affects on the food security and settlement throughout the country. From the field of climate change impact, I have coined climate refugee concept.

Finally, this study has shown that the three most climate change impacts, such as, sea level rise, extreme weather events and water crisis and drought which severely has been affecting human settlements of the country which is the greatest tragedies of life is to be uprooted from one’s home and hearth (Husain: 2005). It is simply a catastrophe while a person is ousted from his own settlement. Already many aspects of climate change have drawn attention of academics and national and international development practitioners but the human settlement displacement due to climate change is still unexplored in many risk prone countries like Bangladesh. So, day by day the climate change related displaced population has been increasing, especially in the developed countries and the small and island states. Bangladesh is such deltaic, low land and natural calamity prone country where every year thousands of people are uprooting from their home and hearth due to climate change. Neither nationally or internationally, the human settlement displacement of Bangladesh has received the right focus.

Therefore, my endeavor is to unveil the reality climate change related displaced people of Bangladesh who are identified as climate refugees. As the people of Bangladesh are not liable for this plight so they demand attention of the global communities. Therefore, it is obvious to develop global governance system to climate change and climate refugees. Chapter 1: Introduction 1. 1 Setting the SceneThe recent climate change is not only a natural phenomena rather it is much more socio political phenomena.

It has turned into a global threat towards human settlement throughout the world. Especially, the small islands states and low lying countries are highly affected by the recent climate change. According to the IPCC report, Bangladesh would be the worst affected by the sea level rise in terms of loss of land. Bangladesh has already been facing acute problem in human settlement for climate change impact. It has been experiencing a vast number of people’s settlement displacement through climate change.

The nature of climate change in Bangladesh is such an acute which erodes human freedom and limits choice through affecting their live and livelihoods. Especially the poor people of the country have been bearing the brunt of climate change. More or less the people of whole world are responsible for climate change but some people are affecting more and some are less. But the reality is that the people of country are very much less liable for this abrupt climate change. On the other hand the people who have been displacing from their home and hearth initially it is a local problem but finally it has already turned into a global problem. Thus, there should have a global governance system in order to address climate change and climate change affected people.

1. 2 Unveiling the Reality Climate change has become a global and multidisciplinary issue which has affected throughout the world. Now, it is no longer a debate but a reality as well a man-made phenomenon (Intergovernmental Panel on Climate Change IPCC – Fourth Assessment Report 2007). There is overwhelming scientific evidence linking the rise in temperature due to increasing the concentration of greenhouse gases in the Earth’s atmosphere (UNDP, 2007).

The recent climate change is the greatest threat for human beings in the world. Although the nature has been playing vital role for protecting and advancing of human beings the recent natural calamities induces threats toward human existence in the world. The recent natural calamities have been eroding human being from his perpetual settlement. It is one of the greatest tragedies of life is to be uprooted from one’s home and hearth (Husain: 2005).

It is simply a catastrophe while a person is ousted from his own settlement. Already many aspects of climate change have drawn attention of academics and national and international development practitioners but the human settlement displacement due to climate change is still unexplored in many risk prone countries. So, day by day the climate change related displaced population has been increasing, especially in the developed countries and the small and island states. Bangladesh is such deltaic, low land and natural calamity prone country where every year thousands of people are uprooting from their home and hearth due to climate change.

Neither nationally or internationally the human settlement displacement of Bangladesh has received the right focus. Therefore, my endeavour is to unveil the reality climate change related displaced people of Bangladesh who are identified as climate refugees. Climate Change means any change in climate over time. Climate Change can be defined as a combined long term effect of rising global temperature leading to changes in air and oceanic circulations and consequently rainfall patterns over time and space. Global warming means the rise of global temperature due to concentration of CO2, methane, N2O and other gases.

Climate Change Evidences are global average surface temperatures have increased by about 0. 6°C since 1900, Sea levels are rising by about 1 cm per decade, arctic sea ice thickness has declined 40 per cent in the past 40 years and major glaciers throughout the world are retreating. On the other hand lake ice is forming later in the autumn and melting earlier in the spring, precipitation in the Northern Hemisphere has increased, particularly as intense rainfall. Besides, El Nino events have become more common and more intense, in the parts of Asia and Africa, droughts have increased in frequency and intensity and the annual insurance payments for damage from floods and storms increased from about $2 billion to $30 billion from 1980s to 1990s.

1. 3 Fathoming the Problem The world is experiencing a huge climate refugees from the developing world and the small as well the island states but still many academics, thinkers and practitioners have not realized gravity of the global climate change and climate refugee problems. These problems are multifaceted and interconnected with whole socio economic conditions. Finally, I will attempt analyze the role of global governance in response of climate change adaptation and mitigation for the climate refugees. The options have been designing for developed and developing world for adaptation and mitigation of the climate change affects where the climate refugees’ are not focused.

Therefore day by day, the climate refugee problems are concentrating acutely. Thus, here I would like to mainstream the issue based on reasonable facts and findings of the study. Based on the nature of the study, I have utilised mostly the qualitative and empirical research methods in the study which include mainly, observation, participant observation and case studies to gather in-depth knowledge. For a holistic analysis I have tried to look into the actors and actions from cross cultural views. Here, I have followed the case study method because the whole study concerns a particular case i. e.

, Bangladesh Case. A few in-depth interviews and unstructured interviews have been conducted among actors for deeper understanding of the views and challenges of different stakeholders in the joined up process. The approach of the study is crucial in field research because it provides the framework of the study. I have used the narrative approach in my study because a narrative approach is very sensitive to the components of a process, that is, the sequence of events that unfolds over time in context (Abbot, 2001, and Polkinghorne, 1988). For empirical study and public management experiences the narrative approach produces and presents the evidence rigorously (UNDESA: 2006: 51).

Here, I have analysed and presented the evidence and experiences from narrative approach. Besides, I have emphasised on the objectivity and neutrality because it is an empirical and qualitative study. Therefore, inevitably I have utilised applied ethnographic approaches which focus the people fashion culturally meaningful expression from the fields of experience, emphasise on what happens and analyse recent or anticipated intervention (Denzin K Denzin and Lincoln Yvvona: 2000). Finally, I tried to look into the issue of climate change from a holistic and multidisciplinary process rather than only a polictical and management perspective (UNDESA: 2006).

. 4 Settling the Crisis Climate change is a multifaceted and multidimensional condition which has affected every arena of the globe. Human beings, especially the people of developing countries and small island states have been suffering a lot and the culmination of the affects uprooting the people from their home and hearth which in turn into climate refugee. Thus climate change and climate refugee has become a prime concern to global governance because they inevitably demand a collective effort.

Such as, the people of Bangladesh have been contributing very less for global climate change but the people of Bangladesh have been paying the most. So, there should have a system just to the affected people of Bangladesh due to climate change. Finally, global governance is inevitable to attain a durable solution for the uprooted people i. e. , climate refugees. Chapter 2: Global Governance Paradigm in the Context of Global Climate Change 2.

1 Introduction The present world has been facing a number of global challenges i. e. HIV/AIDS, climate change, security crisis, financial crisis etc which has concentrated global governance issue around the world. Though the global governance is a fashionable concept but the concept has been developed very much earlier. As the present world is highly globalised so the global challenges demand a global governance system.

2. 2 Global Governance Global governance is the political interaction of transnational actors aimed at solving problems that affect more than one state or region when there is no power of enforcing compliance. Traditionally, governance has been associated with “ governing,” or with political authority, institutions, and, ultimately, control. Governance in this particular sense denotes formal political institutions that aim to coordinate and control interdependent social relations and that have the ability to enforce decisions. However, authors like James Rosenau have also used “ governance” to denote the regulation of interdependent relations in the absence of overarching political authority, such as in the international system. Some now speak of the development of ‘ global public policy’.

Adil Najam, a scholar of the subject at Boston University and now at the Fletcher School of Law and Diplomacy has defined global governance simply as “ the management of global processes in the absence of global government. ” Thomas G. Weiss, director of the Ralph Bunche Institute for International Studies at the Graduate Center (CUNY) and editor (2000-5) of the journal Global Governance: A Review of Multilateralism and International Organizations, defines “ global governance” as “ collective efforts to identify, understand, or address worldwide problems that go beyond the capacity of individual states to solve. [4] “ Global governance” is not a normative term denoting good or bad practice. It is a descriptive term, referring to concrete cooperative problem-solving arrangements.

They may be formal, taking the shape of laws or formally constituted institutions to manage collective affairs by a variety of actors (such as state authorities, intergovernmental organizations, non-governmental organizations (NGOs), private sector entities, other civil society actors, and individuals. But these may also be informal (as in the case of practices or guidelines) or temporary units (as in the case of coalitions). [6] Thus, global governance may be defined as “ the complex of formal and informal institutions, mechanisms, relationships, and processes between and among states, markets, citizens and organizations, both inter- and non-governmental, through which collective interests on the global plane are articulated, rights and obligations are established, and differences are mediated. “ Global governance” is a new phenomenon; global governance is not. Before 1998, no article published in a major political science journal had the term “ global governance” in its title.

That’s clearly not the case now. At the same time, however, what is defined today as global governance today includes aspects of international relations that have been known by other terms in the past, such as “ international organization”, “ multilateralism”, or “ international regime”. Global governance is a set of codified rules and regulations of transnational scope, and the collection of authority relationships that manage, monitor or enforce said rules. Note that this definition encompasses a variety of arrangements, including “ hard law” treaties, “ soft law” declarations, private orders, and international governmental organizations. Note also that is also possible for global policy coordination to take place without any governance structures.

When can global governance be said to be effective? The definitions, as you will see, vary with the author. Some look at whether the regulatory regime substantially effects the issue in question. By this metric, for example, the Kyoto Protocol would be considered effective if it halts the current trend of global warming. Another school of thought examines whether, given the agreed-upon commitments, whether the actors comply with the agreement. By this metric, the Kyoto Protocol is an example of effective global governance if all of the actors adhere to their treaty commitments, even if global warming remains a problem.

A proper measure of effectiveness will need to combine both of these definitions. 2. 3 The Rise of Global Governance The desire to rule the world has been a part of the human experience throughout recorded history. Alexander the Great led Greece to dominance of the known world, only to become the victim of Rome’s quest for world dominance. The Roman Empire, built on bloody battlefields across the land, was swallowed up by the Holy Roman Empire, built on the fear and hopes of helpless people.

History is a record of the competition for global dominance. In every age, there has always been a force somewhere, conniving to conquer the world with ideas clothed in promises imposed by military might. The 20th century is no different from any other: Marx, Lenin, and Hitler reflect some of the ideas which competed for world dominance in the 1900s. The competition is still underway.

The key players change from time to time, as do the words that describe the various battlefields, but the competing ideas remain the same. Time | | | Events | | | | | | 1900-1940 | | | League of Nations | | | 1918 -The League of Nations | | | 1929 – Stock Market Crash – Sets world wide depression | | | 1939 – The Second World War | | | | | | 1941-1989 | | | United Nations | | | 1942 –Declaration of United Nations | | 1944- Bretton Woods Agreements | | | 1945 – UN Charter, ICJ, UN specialized agencies | | | 1968 – Club of Rome | | | 1972 – UNEP | | | 1979 – CEDAW | | | 1987 – World Commission on Environment and Development | | | 1988 – IPCC | | | | | | 1990- till | | | Environ – | | | mental | | | Movement | | | 1990- World Summit for Children | | | 1992 -Commission on Global Governance/ WSSD/ Agenda 21 | | | 1995 – WTO/WSSD | | | 1997 – Kyoto Protocol | | | 1998 – International Criminal Court /U. N. Climate Change Conference | | | 2000 – Millennium Summit/MDG | | | 2001 – September 11 Attack on WTC | | | 2007 – Bali Conference | | | | | The issue of climate change has brought a global threat towards human being which has turn into a force of unity to make the world united and to bring a global order. Thus the world leaders have taken a number of efforts to address the climate change crisis where the global governance works as catalytic. The United Nations Organization has contributed a lot in the field of global governance since its inception.

Especially, since 1970s the environmental movement has become much prominent through the issue of climate change. Such as, United Nations Conference on the Human Environment: 1972 (Stockholm), United Nations Conference on the Environment and Development; 1992(Rio de Janeiro), The World Summit on Sustainable Development; 2002 (Johannesburg), United Conference on Climate Change; 2007; (Bali, Indonesia). Besides, UN Millennium Declaration has emphasized on managing natural resources, in accordance with the precepts of sustainable development and on the change of current unsustainable patterns of production and consumption. Millennium Development Goals are the world leading development agenda where the Goal – 7: Ensure environmental sustainability which aims to integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources. IPCC established in 1988 which has contributed a lot in the field of global governance through sensitizing the governments and civil society around the world in the issue of climate change.

Kyoto Protocol in 1997 is one of the millstones for global governance which brings first global order through reducing CO2 emission among the developed countries. IPCC has launched a comprehensive process to enable the full, effective and sustained implementation of the UNFCCC through long-term action, now, up to and beyond 2012, in order to reach an agreed outcome and adopt a decision at Conference of Parties-15. IPCC’s fourth assessment paper was presented on the Bali Conference on Climate Change-2007. The Bali Action has developed four components for addressing climate change. These are shortly described below. Firstly, Enhanced action on mitigation – where all developed countries reduce emission and it should be measurable, reportable, and verifiable.

The developing countries should take action on mitigation where they will be Supported and enabled by technology, finance and capacity-building, in the context of sustainable development. Secondly, Enhanced action on Adaptation -International cooperation to support urgent implementation of adaptation actions through: a. Assessment of Vulnerability b. Prioritization of actions c. Financial needs assessment d.

Development of risk reduction and disaster management strategies e. Integration of climate considerations into sectoral and national planning f. Support programme for capacity building in formulating programmes and projects to address the adaptation needs. g.

Financial mechanism to support the implementation of activities. h. Development of new and innovative support mechanisms such as insurance etc. Thirdly, Technology development and transfer to support action on Mitigation and Adaptation by: a. Scaling up of the development and transfer of technology to developing countries through effective mechanisms and enhanced means for removal of obstacles to, and provision of financial and other incentives.

b. Accelerated deployment, diffusion and transfer of affordable environmentally sound technologies, c. Cooperation in research and development of current, new and innovative technology. Fourthly, Enhanced action on Finance – Positive incentives will be given for emission reduction activities by the developing countries.

These are: a. Financing for implementation of adaptation actions; b. Mobilization of public- and Private-sector funding and investment, including ; facilitation of carbon-friendly investment choices; and c. Improved access to adequate, predictable and sustainable financial resources including concessional funding. Chapter -3 Global Governance and Refugee Paradox 3. 1 Refugee and Global Governance In the 1993 ‘ State of the World’s Refugees’, UNHCR[1] identified four root causes of refugee flows – political instability; economic tensions; ethnic conflict; and environmental degradation (Lonergan, 1998).

More recently, Matlou (1999) suggested the following, in an Africa-specific context – the effects of past struggles for decolonisation, majority rule and apartheid; post-independence conflicts involving political struggle, ethnicity, religious intolerance and/or human rights violations; and economic and environmental disasters including conflicts over resources. As such, both have cited environmental factors as one of the root causes of forced migration which have led to, what has been increasingly described as, ‘ environmental refugees’. Generally, refugees include persons recognised under the 1951 convention relating to the Status of Refugees; its 1967 Protocol; the 1969 OAU Convention Governing the Specific Aspects of Refugee Problems in Africa. The pivotal tool for defining refugee is the 1951 United Nations Convention relating to the status of refugees. This convention was adopted on 28 July 1951 and its subsequently followed the 1967 protocol. According to Article 1 of the Convention: “ A refugee is someone who is outside his or her country of national or habitual residence, has a well founded fear of persecution because of his/her race, religion, nationality, membership in a particular social group or political opinion; and is unable or unwilling to avail himself/ herself of the protection of that country, or to return there, for fear of persecution” (UNHCR, 2001: 2).

This definition emphasize on four basic elements i. e. , to be outside the country of nationality, well founded fear, persecution and any grounds from race, religion, nationality, membership of a particular social group or political opinion. Refugee definition of the 1969 OAU Convention encompasses some areas beyond the Convention 1951. These are: • External aggression, occupation, foreign domination or events seriously disturbing public order in either part or the whole of his country of origin or nationality and Refugee Definition of the 1984 Cartagena Declaration covers following areas to determine refugees.

Such as: • Lives, Safety and Freedom threatened by generalized violence, foreign aggression; internal conflicts, • massive violation of human rights or other circumstances which have seriously disturbed public order and 3. 2 Environmental Refugees and Global GovernanceEnvironmental refugees are defined by El-Hinnawi (1985: 4) as “ those people who have been forced to leave their traditional habitat…because of a marked environmental disruption…that jeopardized their existence and/or seriously affected the quality of their life”. El-Hinnawi notes three categories: • Those temporarily displaced because of an environmental stress such as an earthquake or cyclone; • Those permanently displaced because of permanent changes to their habitat, such as dams or lakes; and • Those who are permanently displaced because their original habitat can no longer provide for their basic needs. Jacobson (1988) suggests that “ environmental refugees have become the single largest class of displaced persons in the world” and estimated that there were 10 million in the late 1980s. More recent estimates suggest that numbers may be as high as 25 million (Myers, 1996) and the International Organization of Migration suggested in 1992, that by the turn of the century there would be one billion persons who have been environmentally displaced from their original habitat (Lonergan, 1998). However, collecting accurate statistical data on refugees is extremely difficult, few of the figures have been empirically verified and as such, any figures must be treated with some suspicion.

In addition, some would argue that the term ‘ environmental refugees’ is misleading. The term was first popularised by Lester Brown of the Worldwatch Institute in the 1970s (Saunders, 2000). Since then it has been the subject of numerous contributions (including El-Hinnawi, 1985; Jacobson, 1988; Myers and Kent, 1995; Black, 2001), and more recently, criticism (see Saunders, 2000; Stranks, 1997; Kibreab, 1994). Indeed, it is suggested that firstly, the use of the term ‘ environmental’ can imply a false separation between overlapping and interrelated categories, including social, political and economic factors. And secondly, the use of the term refugee implies that a similar response should be provided to environmental refugees as to those refugees that have been politically persecuted and crossed international borders (as the UNHCR defines refugees[2]). Many would argue that this should not be the case.

As a result, some would argue that it would be more constructive to talk of ‘ environmental migrants’ or ‘ environmentally displaced persons’ (Stranks, 1997). The International Organisation for Migration (IOM) defines environmental migrants as “ persons or groups of persons who, for compelling reasons of sudden or progressive changes in the environment that adversely affect their lives or living conditions, are obliged to leave their habitual homes, or choose to do so, either temporarily or permanently, and who move either within their country or abroad” (2008). However, El-Hinnawi uses the term refugees and defines, “ people who have been forced to leave their traditional habitat, temporarily or permanently, because of a marked environmental disruption (natural and/or triggered by people) that jeopardised their existence and/or seriously affected the quality of their life” (1985). El-Hinnawi (1985) and Jacobson (1988) started with three sub-categories of environmental refugee, namely temporary displacement due to temporary environmental stress; permanent displacement due to permanent environmental change; and temporary or permanent displacement due to progressive degradation of the resource base.

Lonergan (1998) reported that, “ The UNHCR in the 1993 State of the World’s Refugees, identified four root causes of refugee flows. These were: political instability, economic tensions, ethnic conflict and environmental degradation. The claim that environmental degradation was a root cause of refugee flows was a direct response to a growing body of literature positing a link between environmental degradation and population movement, and recognition that the numbers of displaced persons internationally was much larger than indicated being the statistics on refugee flows”. Lonargan (1998) further reported that according to many writers the number of people who have been displaced by environmental degradation is immense.

Jacobson (1988) notes that, “ environmental refugees have become the single largest class of displaced persons in the world”. Homer-Dixon (1991) further notes that environmental degradation is likely to produce “ waves of environmental refugees that spill across borders with destabilizing effects” on domestic order and international relations. Speaking of displaced persons unaccounted for in official refugee figures, the Executive Director of UNEP at the time, Mustafa Tolba (1985), stated that “ these people are the millions fleeing the droughts of northern Africa, the victims of Bhopal and the thousands made homeless by the Mexico earthquake. They are environmental refugees.

” The Intergovernmental Panel on Climate Change (IPCC, 1990) noted that the greatest effect of climate change may be on human migration as millions of people will be displaced due to shoreline erosion, coastal flooding, river erosion and agricultural disruption. Following from this, Myers (1992) projected environmental refugees in a green house affected world (in yr. 2050) at 150 million persons (cited in Steve Lonergan, 1998). The above findings on the environmental refugees give us a very gloomy picture on the subject and need to be given more attention both globally and regionally. People living in vulnerable coastal areas will be displaced as sea levels rise and saline water Steve moves inland. Bangladesh has 62 million people (46 percent of the total population) living in “ Low Elevation Coastal Zones” (LECZ) which have been identified as being particularly vulnerable (McGranahan 2007).

Moreover changes in river regimes due to melting of Himalayan snowcaps and more frequent extreme weather events will place pressure on still more people to move. 3. 3 Climate Refugee and Global Governance Simply, a Climate refugee is a displaced person caused by climate change. Such climatic disasters result from both incremental and rapid ecological change and disruption that includes increased droughts, desertification, sea level rise, and the more frequent occurrence of extreme weather events such as hurricanes, cyclones, flooding and tornadoes. A statistically significant correlation between environmental degradation including climate change was shown by Afifi and Warner (2007), controlling for the already established major drivers of migration. Climate refugee is not a new concept rather human beings have been displaced from their habitats by climatic disasters from the inception of the human society.

Anthropological evidence supports that in ancient period people migrated for climatic reasons when people were helpless before climatic disorders. In the same way, the recent climate change has turned into a disruption of human settlement throughout the world, especially in the developing countries. In 1946, Vogt categorized these displaced people as ‘ ecological displaced persons’. Later on UNFCC, used the term environmental refugee.

Lately, the term ‘ climate refugee’ has arrived into academic fields. Most probably, the term “ Climate Refugee” (in french, Refugies Climatiques) was used for the first time by the photographers/journalists from the Collectif ARGOS, based in Paris, who started their investigations on the subject in 2002. The nature of the present climate refugees demands global attention because the present climate change already has been treated as a global issue. Therefore the climate change and the climate refugee is a prime issue in global governance.

There is no unique and clear definition of what constitutes a climate refugee, and they are often classified as environmental refugees. Some people consider climate refugees as a subcategory of environmental refugees. A paper by Renaud, Bogardi et al. (2007) posed a conceptual framework to understand different categories of people on the move in response to environmental disruptions including climate change.

The use of the term “ refugee” itself is controversial, the main concern being that use of the term “ refugee” for climate or environment-related displacement could detract from those people protected under the 1951 Geneva Convention (which protects political refugees from persecution) (see Dun, Gemenne, and Stojanov 2007 for further discussion). No central tally is kept by the United Nations of either classification. In the World Disasters Report 2001 published by the International Federation of Red Cross and Red Crescent Societies, more people are now forced to leave their homes because of environmental disasters than war. They estimate approximately 25 million people could currently be classified as being environmental refugees. Norman Myers of Oxford University has estimated climate change will increase the number of environmental refugees six-fold over the next fifty years to 150 million. Australian climate scientist Dr.

Graeme Pearman has predicted that a 2°C rise in temperature would place 100 million people ‘ directly at risk from coastal flooding’ by 2100. The Intergovernmental Panel on Climate Change (IPCC), has suggested 150 million environmental refugees would exist by 2050. Because the actual phenomena of climate change affecting human movement has not yet been empirically, systematically addressed, the European Commission funded a research project “ Environmental Change and Forced Migration Scenarios (EACH-FOR)” to investigate, measure, and create scenarios for future environmental change. The project undertakes 24 case studies worldwide with a unified methodology, and will report its findings throughout 2008. The inhabitants of the Carteret Islands in Papua New Guinea are also among the first climate refugees due to sea level rise attributed to global warming and climate change.

Other inhabitants of low lying islands and Island states, are also at risk. Tuvalu, Kiribati and the Maldives are especially susceptible to changes in sea level and storm surges. 3. 4 Refugee Paradox | Types | Refugee | IDP | Environmental | Climate Refugee | | Factors | | | Refugee | | | Displace | Outside of the country or | Within the country of | Within the country or | Within the country or outside the country| | ment | habitual residence territory | outside the country | | | Persecution | fear of persecution | Political persecution or | Persecution by environmental | Persecution by climate change | | | | disaster | Change | | | Grounds | Race, Religion, Nationality, | Man made or natural causes | All sorts of environmental | Sea level rise | | | Social group or Political | | degradation | Extreme weather | | | opinion | | | Water Crisis | | Protection and Return| Unable or unwilling to avail | Unable or unwilling to avail| Unable or unwilling to avail | Unable or unwilling to avail the | | issue | the protection of that country,| the protection of region or | the protection of that | protection of that country, or to return | | | or to return home | to return home | country, or to return home | home | 3. 5 Conclusions There is a lack of any real theoretical or empirical insight and/or data on the relationship between environmental degradation, migration and indeed, conflict. As a result there are many inconsistencies to be cleared and questions to be answered on the whole issue of environment and migration.

It is extremely complex and has not been helped by past attempts to isolate it from other highly interrelated issues. Despite this however, it seems fair to say that there is likely to be an increase in displaced people due to factors that include an environmental element. In addition, poor countries are, in general, more vulnerable to environmental change than rich ones, not least due to having less resources to mitigate any adverse effects. As a result, northern countries are likely to find themselves under increasing pressure to provide some support for this issue, whether it be in attempting to prevent such displacement happening or responding to it. Policymakers therefore should show greater consideration to environmental deterioration and resource scarcity within development and humanitarian assistance activities, including that is, within forced migration. Chapter – 4: Climate change in Bangladesh .

1 Introduction Bangladesh has recorded impressive economic and social gains since the 1990s. The country has so far implemented five Five-Year Plans, one Two-Year Plan and a Three-Year PRSP Rolling Plan. The overarching goals of these plans were to accelerate economic growth and poverty reduction. The country has achieved steady GDP growth rate of more than 5 percent consecutively over the last five years. As an outcome of development activities, Bangladesh has made commendable progress in terms of reduction of income and human poverty. More important, the country has taken large strides toward achieving Millennium Development Goals (MDGs).

Bangladesh has received universal appreciation for attaining three targets of MDGs such as (1) removing gender disparity in primary and secondary education; (2) ensuring almost universal access to primary education; and (3) ensuring access to safe drinking water. For the last five consecutive years (2003-2007), Bangladesh attained the HDI rank of “ Medium Human Development,” according to the UNDP Human Development Reports. But these economic and social gains will not be sustained unless the challenge of climate change cannot be fought on an urgent basis. The effort to attain sustained economic growth and to reduce poverty under Poverty Reduction Strategy Paper (PRSP) will be significantly undermined by the impacts of climate changes in Bangladesh. In recent years, the subject of climate change has drawn our attention for a number of reasons. First, climate change is no longer a debate but a reality.

The Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) 2007 has established an overwhelming scientific consensus that climate change is both real and man-made. According to this report, Bangladesh would be worst affected by the sea level rise in terms of loss of land. Secondly, the climate change challenge is a global problem. As such it provides an opportunity for the world to come together in forging a collective response to a crisis that threatens to halt human progress.

Thirdly, climate change threatens to erode human freedom and limit choice. Fourthly, climate change is hampering efforts to deliver the MDG promise. It is the poor who are bearing the brunt of climate change. Fifthly, climate science deals in probability and risk, not in certainties.

Sixthly, climate change has more bearing on future generations than the present. For all these issues and concerns, an urgent action is needed to address the challenge of climate change, which has already posed one of the greatest threats to mankind. 4. 2 Bangladesh Climate Characteristics Bangladesh is one of the largest deltas in the world, formed by the dense network of the distributaries of the mighty rivers namely the Ganges, the Brahmaputra and the Meghna. The country is located between 20°34’ to 26°38’north latitude and 88°01’ to 92°42’ east longitude. The total land area is 147, 570 sq.

km. and consists mostly of low and flat land. A network of more than 230 major rivers with their tributaries and distributaries crisscross the country. Bangladesh can be divided into three physiographic regions: ? Vast alluvial flood plains are almost continuous and flat, which is hardly 9 meter above the mean seas level. This occupies almost 80% of the total land area.

This plain land is covered by a large number of rivers. ? Uplifted land blocks are the remnant of an old phase of deposition that occupies about 8% of total land area of the country. It comprises two major tracts namely Barind tracts and the Madhupur tract and minor tract called Lalmai hills. The heights of the tract in most cases are 1-5 meter and in some places they are up to 25 meter above adjoining flood plain. ? The Marginal Hills of the East and the South East are situated along the northern and eastern borders of Bangladesh, which covers the area of 12% of the country. The Hills are normally 10-100 meter above mean sea level.

A map showing the physiographic regions of Bangladesh is given at Figure 1. Major hazards in different regions are presented in Table 1. [pic] Figure 1: Map showing the physiographic regions of Bangladesh Major hazards in different physiographic regions No | AEZ zones | Area (Km2) | Population | Hazards | | | | | 1954 floods | Affected 55% of country | | 1974 flood | Moderately severe, over 2, 000 deaths, affected 58% of country, followed by | | | famine with over 30, 000 deaths | | 1984 flood | Inundated 52, 520 sq-km, cost estimated at US$378 million | | 1987 floods | Inundated over 50, 000 sq-km, estimated damage US$ 1. 0 billion, 2055 deaths | | 1988 floods | Inundated 61% of country, estimated damage US$ 1. billion, more than 45 million homeless, between 2, 000-6, 500 | | | deaths | | 1998 floods | 1, 100 deaths, inundated nearly 100, 000 sq-km, rendered 30 million people | | | homeless, damaged 500, 000 homes, heavy loss to infrastructure, estimated damage | | | US$ 2.

8 billion | | 2004 floods | Inundated 38% of the country, estimated damage US$ 6. 6 billion, deaths 700, affected people nearly 3. 8 million | Source: DoE 2005, NAPA Drought Drought is primarily an agricultural phenomenon that refers to conditions where plants are responsive to a certain level of moisture stress that affects both the vegetative growth and yield of crops. Our farmers are concerned about droughts because crop production gets hampered due to lack of rain and soil moisture. The western part of the country receives less rainfall averaging some 1400mm as against the national average of about 2150 mm. As a consequence, susceptibility and severity of drought in the western districts are much higher than elsewhere.

Based on the characteristics of moisture retention capacity, infiltration etc. , high prevalence of drought is observed in the western districts of Rajshahi, Chapai Nawabgonj, Bogra, Pabna, Dinajpur, Rangpur and Kushtia. Drought of different intensities in Kharif, Rabi and Pre-kharif seasons cause damage to 2. 32 m ha of T.

Aman and 1. 20 m ha of Rabi crops annually. Yield reductions due to drought vary from 45-60% in T. aman and 50-70% in Rabi crops in very severe drought situation. In the severe drought year of 1979, the shortfall was about 0. 7 million tons.

During 1981 and 1982, drought affected the production of monsoon crop (Aman) and the shortfalls from the trend were 0. 5 and 0. 3 Mmt, respectively. Drought affected the northwest part of the country in 2006 and crop production was reduced by 25-30%. Table 6 presents drought prone areas by cropping seasons. Impact of some droughts of historical significance | Year | Impact | | 1791 | Drought affected Jessore district.

Prices had risen to twice and three times of their usual levels. | 1865 | Drought proceeding famine occurred in Dhaka. | | 1866 | Severe drought in Bogra. The rice production of the district was hit hard and the price went up three times its normal | | | level. | | 1872 | Drought in Sundarbans. The rainfall was deficient, and crops suffered to a great extent.

| | 1874 | Bogra affected and the crop failure was much greater. The rainfall was extremely low. | | 1951 | Severe drought in northwest Bangladesh and substantially reduced rice production. | | 1973 | One of the severest droughts in the present century and was responsible for the 1974 famine in northern Bangladesh. | 1975 | The drought affected 47% of the entire country and caused sufferings to about 53% of the total population.

| | 1979 | Severe drought caused widespread damage to crops. It reduced rice production by about 2 million tons and directly | | | affected about 42% of the cultivated land and 44% of the population. It was one of the severest droughts in recent | | | times. | | 1981 | Severe drought adversely affected crop production.

| | 1982 | Caused a total loss of rice production amounting to about 53, 000 tons. In the same year flood damaged about 36, 000 tons | | | of rice. | 1989 | Most of the rivers in northwestern Bangladesh districts such as Naogaon, Nawabganj, Nilphamari and Thakurgaon; dried up. | | 1994-95 | This drought was followed by that of 1995-96, caused immense damage to crops, especially in the case of rice and jute.

| | 2006 | Drought reduced crop production by 25-30% | Source: Author’s compilation based on Banglapedia Cyclone The Bay of Bengal is an ideal breeding ground for tropical cyclones and depressions. Funnel shaped configuration of the coastline of Bangladesh produces the catastrophic ravages of cyclones and storm surges. During pre-monsoon and post-monsoon periods, disastrous tropical cyclones form in the Bay of Bengal. An average of 1. 5 severe cyclonic storms hit the country each year and associated storm surges as much as six meters higher than normal, can reach as far as two hundred km inland along the water ways.

In Bangladesh alone, about 40% of the total number of global storm surges are recorded. Over last 30 years different scales of cyclones have been affecting the country with loss of valuable lives and property. It was estimated in 1996 that about five million people currently live in ‘ High Risk Areas’3 (HRAs) along the western, central and southeastern coasts of Bangladesh. Of these, 4 million live in ‘ Very High Risk Areas’.

However, only 10 % of the actual population in the HRAs could be accommodated in existing safe havens (excluding Sub-district headquarters buildings and cyclone shelters built outside these HRAs). Approximately 9 million more shelter places were needed in the three cyclone-prone zones by the year 2001 and 12. 5 million by 2021 as a result (EU: 1998). The attached figure shows the areas affected by the 1970, 1985 and 1990 cyclones plus the designated High Risk Areas. Table 8 shows the Impact of Major Cyclones in Bangladesh from 1974 to 1998. Impact of Major Cyclones in Bangladesh from 1974 to 1998 | Year | Date | Impact | | 1974 | 24-28 Nov.

200 persons killed, 1000 cattle lost and 2300 houses perished | | 1975 | 9-12 May | 5 persons killed and a number of fishermen missing | | 1977 | 9-12 May | Exact figures of the loss of lives and properties not available | | 1983 | 14-15 Oct. | 43 persons killed, more than 150 fishermen and 100 fishing boats missing and 20 percent aman crops | | | | destroyed | | 1985 | 24-25 May | About 11, 069 persons killed, 94, 379 houses damaged, livestock lost 135, 033 and road damaged 74 km, | | | | embankments damaged. | | 1986 | 8-9 Nov. 14 persons killed, damaged 97, 200 heat arcs of paddy fields, damage to schools, mosques, warehouses, | | | | hospitals, houses and buildings at Amtali upazila in Barguna.

| | 1988 | 24-30 Nov. | 5, 708 persons killed and lot of wild animals deer 15, 000, Royal Bengal Tiger 9, cattle 65, 000 and crops | | | | damaged worth about Taka 9. 41 billion. | | 1991 | 29 April | The death toll was estimated at 150, 000; cattle head killed 70, 000. | | 1994 | 29 April- 3 May | People killed about 400, cattle lost about 8, 000.

| | 1995 | 21-25 Nov. | People killed 650v 17, 000 cattle head perished. | 1997 | 16-19 May | Only 126 people killed because of better disaster management measures taken by the government and the | | | | people. | | 1997 | 25-27 Sept. | Severe cyclonic storm (hurricane) with a wind Speed of 150 km/hr, storm surge of 1.

83 to 3. 05 m. | | 1998 | 16-20 May | Severe cyclonic storm (hurricane) with a wind speed of 150 km/hr, storm surge of 1. 83 to 2.

44 m. | Source: Author’s compilation from various sources Sea Level Rise The SAARC Meteorological Research Council (SMRC) carried out a study on recent relative sea level rise in the Bangladesh coast. The study has used 22 years historical tidal data of the three coastal stations. The study revealed that the rate of sea level rise during the last 22 years is many fold higher than the mean rate of global sea level rise over 100 years, which shown the important effect of the regional tectonic subsidence. Variation among the stations was also found.

Table 9 represents the trend of tidal level in three costal stations. Retaliation Table 9: Trend of tidal level in three coastal stations | Tidal Station | Region | Latitude | Longitude (E) | Datum | Trend (mm/year) | | | |(N) | |(m) | | | Hiron Point | Western | 21048’ | 89028’ | 3. 784 | 4. | | Char Changa | Central | 22008’ | 91006’ | 4.

996 | 6. 0 | | Cox’s Bazar | Eastern | 21026’ | 91059’ | 4. 836 | 7. 8 | Source: SMRC, No. 3 Future Climate Changes approaches i. e.

(a) projection based on observed data, and (b) using available climate model. Vulnerability and adaptation assessment studies carried out on Bangladesh have used both older and newer versions of General Circulation Models. National Adaptation Programme of Action for Bangladesh has complied future impacts, vulnerability and adaptation based on existing model outputs. These changes are going to have a profound impact on population, environment and economy of Bangladesh. It considered future changes in the climate as given in Table 10. 4.

5 National Adaptation Programme of Action (Ministry of Environment and Forest, November 2005) Intervention Type Measures ? Promoting adaptation to coastal crop agriculture to combat salinity intrusion through maize production under Wet Bed No-tillage Method and Sorjan systems of cropping in tidally flooded agro-ecosystem. ? Adaptation to agriculture systems in areas prone to enhanced flash flooding – North East and Central Region through no-tillage potato cultivation under water hyacinth mulch in wet sown condition, and vegetable cultivation on floating bed. Promoting adaptation to coastal fisheries through culture of salt tolerant fish especially in coastal areas of Bangladesh. ? Adaptation to fisheries in areas prone to enhanced flooding in North East and Central Region through adaptive and diversified fish culture practices. ? Construction of flood shelter, and information and assistance centre to cope with enhanced recurrent floods in major floodplains. ? Reduction of climate change hazards through coastal afforestation with community focus.

? Providing drinking water to coastal communities to combat enhanced salinity due to sea level rise. ? Enhancing resilience of urban infrastructure and industries to impacts of climate change including floods and cyclone. Facilitating Type Measures Capacity building for integrating climate change in planning, designing of infrastructure, conflict management and land-water zoning for water management institutions. ? Exploring options for insurance and other emergency preparedness measures to cope with enhanced climatic disasters (e.

g. flood, cyclones and drought). ? Mainstreaming adaptation to climate change into policies and programmes in different sectors (focusing on disaster management, water, agriculture, health and industry). ? Inclusion of climate change issues in curriculum at secondary and tertiary educational institution. ? Climate change and adaptation information dissemination to vulnerable community to raise awareness. Promotion of research on drought, flood and saline tolerant varieties of crops to facilitate adaptation in future.

? Development of eco-specific adaptive knowledge (including indigenous knowledge) on adaptation to climate variability to enhance adaptive capacity for future climate change. Basis of the Climate Change Action Plan Climate change is likely to impact most severely on the poorest and most vulnerable in society. Every effort will made to ensure that they are protected and that all programmes focus on the needs of this group for food security, safe housing, employment and access to basic services, including health. Under this pillar we will: Increase the resilienceIncrease the resilience of vulnerable groups, including women and children, through development of community-level adaptation, livelihood diversification, better access to basic services and social protection (e. g.

, safety nets, insurance) and scaling up Develop climate change resilient cropping systems (e. g. , agricultural research to develop crop varieties, which are tolerant of flooding, drought and salinity, and based on indigenous and other varieties suited to the needs of resource poor farmers), fisheries and livestock systems to ensure local and national food security Implement surveillance systems for existing and new disease risks and ensure health systems are geared up to meet future demands Implement drinking water and sanitation programmes in areas at risk from climate change (e. g. , Comprehensive disaster managementComprehensive Disaster Management systems will be further strengthened to deal with the increasingly frequent and severe natural catastrophes as a result of climate change. We will build on and extend our proven experience in this area.

Under this pillar we will: Strengthen the government’s capacity and that of civil society partners and communities to manage natural disasters, and ensure that appropriate policies, laws and regulations are in place Strengthen community-based adaptation programmes and establish them in each of the disaster prone parts of the country Strengthen our cyclone, storm surge and flood early warning systems to enable more accurate short, medium and long-term forecasts Infrastructure It is imperative that existing infrastructure (e. g. coastal and river embankments) is well-maintained and fit for-purpose and that urgently needed infrastructure (e. g. , cyclone shelters, urban drainage) is put in place to deal with the likely short and medium-term impacts of climate change.

Under this pillar we will: Repair and rehabilitate existing infrastructure (e. g. , coastal embankments, river embankments and drainage systems, urban drainage systems) and ensure effective operation and maintenance systems Plan, design and construct urgently needed new infrastructure (e. g. , cyclone shelters, coastal and river embankments and water management systems; urban drainage systems, river erosion control works, flood shelters) to meet the changing conditions expected with climate changeUndertake strategic planning of future infrastructure needs, taking into account the likely (a) future patterns of urbanisation and socio-economic development; and (b) the changing hydrology of the country, because of climate change Research and knowledge management Research will be undertaken to estimate the likely scale and timing of climate change impacts on different sectors of the economy, to inform planning of future investment strategies.

We will also ensure that Bangladesh is effectively linked to regional and national knowledge networks, so that Bangladeshi organisations and the general public are aware of the latest research, lessons and technologies available in other countries. Under this pillar we will: Model climate change scenarios for Bangladesh by applying global climate change models and methodologies at regional and national levels Model the likely hydrological impacts of climate change on the Ganges-Brahmaputra-Meghna system to assess likely future system discharges and river levels in order to derive design criteria for flood protection embankments Monitor and research the impacts of climate change on ecosystems and biodiversity Research the likely impacts of climate change on the macro-economy of Bangladesh (a Bangladesh ‘ Stern Report’) and key sectors (e. g. , livelihoods and food security) and contribute to developing a climate-proof national development planResearch the linkages between (a) climate change, poverty and vulnerability and (b) climate change, poverty and health (disease incidence, nutrition, water, sanitation) in order to identify possible interventions to increase the resilience of poor and vulnerable households to climate change Establish a Centre for Research and Knowledge Management on Climate Change (or a network of centres) to ensure Bangladesh has access to the latest ideas and technologies from around the world, and ensure that data is widely and freely available to researchers Mitigation and low carbon development Even though Bangladesh’s contribution to the generation of greenhouse gases is very low, we wish to play our part in reducing emissions now and in the future.

Under this pillar we will: Develop a strategic energy plan and investment portfolio to ensure national energy security and lower greenhouse gas emissions Expand the social forestry programme on government and community lands throughout the country Expand the ‘ greenbelt’ coastal afforestation programme with mangrove planting along the shoreline Seek the transfer of state-of the art technologies from developed countries to ensure that we follow a low-carbon growth path (e. g. , ‘ clean coal’ and other technologies) Review energy and technology policies and incentives and revise these, where necessary, to promote efficient production, consumption, distribution and use of energy Capacity building and institutionalTo meet the challenge of climate change, the capacity of government ministries and agencies, civil society and the private sector will be strengthened. Under this pillar, we will: Review and revise, where appropriate, all government policies (sector by sector) to ensure that they take full account of climate change and its impacts.

Mainstream climate change in national, sectoral and spatial development planning (in government ministries and agencies, local government, the private sector, civil society and communities) and ensure that impacts on vulnerable groups and women are prioritised in plans. Build the capacity of key government ministries and agencies to take forward climate change adaptation (e. g. Ministry of Food and Disaster Management, Bangladesh Water Development Board, Local Government Engineering Department; National Agricultural Research System, the health system, the Ministry of Women’s and Children’s Affairs) Build the capacity of the government to undertake international and regional negotiations on climate change. Regional and international cooperation is essential in order to build necessary capacity and resilience Build the capacity of the government, civil society and the private sector on carbon financing to access various global climate funds.

Chapter -5: Climate Refugee Paradigms in Bangladesh 5. 1 Climate Refugee Symptom in BangladeshBangladesh is severely affected country by climate change which has been experiencing all of the world wide accepted climate change evidences i. e. , Sea Level Rise, Extreme Weather Events and Drought and Water Crisis. The impact of all of the evidences of climate change widely happening in the different parts of the country and in different forms. The impacts of climate change have ultimately been affecting on the settlement of the people in the long term.

Thus day by day the displacement of settlement of the people of the different parts have been increasing in very high rate. Here, we are proposing these displaced people by climate change evidences as climate refugees. We have observed some general symptoms of climate refugees in Bangladesh. These are described below. Such asThe rate of urbanization of the Dhaka city is 5.

4 per year which is the world’s highest rate of urbanization. The main reason behind the rate of the urbanization is the people’s settlement displacement by the climate change impacts. The displaced people are coming towards city for live and livelihoods. Mostly the rural people are highly affected from their home and hearth. As a result, the rate of urbanization of the all the cities including the Dhaka city is very high considering all other cities of the world. Almost one third of the urban people have been living in the slums in the country mostly in the context of big cities like Dhaka, Chittagong, Khulna and Rajshahi.

The source of the slum people is the rural people who are mostly displaced from their oginal settlement by climate change impacts. Climate change has been affecting on the live and livelihoods of the people in various forms. Such as, drought has been affecting on agriculture and the loss of agriculture is cause of food insecurity and which ultimately uprooting the people from their settlements. The rate of international migration and labor migration is another symptom of the existence of climate refugees in Bangladesh. About more than 5 millions of Bangladeshi labor has been working abroad.

The main reason behind the international labor migration is the climate change impacts. Sunamgonj district is one of the northeastern district of Bangladesh which is basically a low lying areas containing a special characteristic i. e. , haor ecology. The hoar ecology provide only once harvesting in a year. But recently for the climate change impact the intensity and frequency of flash floods has been affecting on the people of Sunamgonj district.

As a result of flash flood in the Sunamgon district the people have to suffer for whole year long. Thus the labor of the district has been migrating to abroad. 5. 2 Climate Refugee Paradigms in Bangladesh In this chapter we would focus on some cases of climate refugees in Bangladesh which are the most hot spots climate refugees of the world. The following diagram has showed cases of the climate refugees in Bangladesh.

Climate Change Evidences Impacts in Bangladesh Impacted Areas 5. 3 Some Hot Spots of Climate Refugees in Bangladesh Sandip – The First Place of Originating the Climate Refugee All of the Islands of Bangladesh are very much vulnerable towards the affect of the recent climate change. It has been observed that a sea level rise of 0. 5 meter over the last 100 years has already eroded 65 percent landmass of 250 square kilometer Kutubdia, 227 square kilometers of Bhola and 180 square kilometer of Sandip islands(The New Nation: 2007).

The Sandip island is one of the extreme case for climate refugees is Bangladesh. Sandip is an Upzila (Sub Division) of Noakhali District. Out of eight Union Councils already two Union Councils have totally been eroded and inundated in Bay of the Bengal. These two union councils are Katgarh and Haddakhali. The people of the two unions has become climate refugee since 1970. They have taken shelter at the nearest hilly areas of