# **Climate Change and Forced Migration**

Dr. Pragnya Paramita Jena

Date of Submission: 23-05-2018	Date of acceptance: 05-06-2018

### I. INTRODUCTION

A widespread view that is gaining ground is that climate related migration could evolve into a global crisis by displacing a large number of people from their homes and forcing them to run away. As early as 1990, the Intergovernmental Panel on Climate Change (IPCC, 1990:20) warned that "the greatest single impact of climate change could be on human migration" - with millions of people displaced by shoreline erosion, coastal flooding and severe drought. In addition, in 1992 IOM together with the Refugee Policy Group published a report on "Migration and Environment" in which it is stated: "Large numbers of people are moving as a result of environmental degradation that has increased dramatically in recent years. The number of such migrants could rise substantially as larger areas of the earth become uninhabitable as a result of climate change." Migration caused by human action or natural hazards, or cyclical environmental factors, results in temporary or permanent dislocations of people. These displacements are caused by sudden events like flooding, earthquakes, volcanoes, hurricanes, cyclones, forest/bush fires, Tsunamis, industrial accidents or chemical leakages. These hazards affect both the livelihood and ecosystem of the area. An environmental hazard or adverse climatic change that results in immediate displacement or migration of people immediately after its occurrence is known as environmental emergency migration, as in the case of Tsunami, hurricane, flood, drought etc. Environmental migration is viewed as an adaptation strategy of households to either diversify or improve livelihood under constant threat of environmental change (UNDP 2009).

In the absence of an internationally agreed definition, IOM developed a working definition in 2007 which defines "environmental migrants" as follows: "Environmental migrants are 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". The United Nations Environment Programme (UNEP) anticipates that climate change will affect migration flows in three main ways: firstly the effects of warming in some areas will gradually reduce agricultural productivity and degrade ecosystem services such as clean water and fertile soil. Secondly, the increase in extreme weather events – especially heavy rainfall and resulting flash or river floods in tropical regions – will affect increasing numbers of people, resulting in mass displacement. Thirdly, sea-level rise will permanently destroy extensive low-lying coastal areas – resulting in the permanent relocation of millions of people.

Bates (2002) assumes a direct causal relationship between environmental changes and migration, and attempts to provide a typology of these changes. Her classification is based on three binary criteria related to the environmental disruptions causing the migration: their origin (natural or man-made), their duration (acute or gradual), and whether migration was an intentional outcome of the disruption or not. Byravan and Rajan (2006) focus on sea-level rise and insist on the 'inevitability' of the displacement of people living in coastal areas and small islands by 2050, because of sea-level rise. In line with Myers, they estimate that about 200 million people will be at risk with a one metre rise in sea-level, representing a land loss of about 212,000 square kilometres. Numerous reports from NGOs have also contributed to the alarmist perspective, and provided additional estimates and forecasts. The Red Cross stressed in 2001 that more people were forced to leave their homes because of environmental disasters than war (International Federation of Red Cross and Red Crescent Societies 2001), A paper from the United Nations University's Institute for Environment and Human Security (UNU-EHS) defined a "forced environmental migrant" as somebody "who has to leave his/her place of normal residence because of an environmental stressor ... as opposed to an environmentally motivated migrant who is a person who 'may' decide to move because of an environmental stressor" (Renaud et al. 2007) while Friends of the Earth Australia (2004) emphasised Myers' predictions and urged the Australian Government to take action against climate change. Lester Brown, who was amongst the first to use the term in 1970s, noted that flows of

'environmental refugees' were just in their beginnings and were 'yet another indicator that our modern civilization is out of sync with the earth's natural support systems' (2004). In a much-debated report, the NGO Christian Aid dramatically revised Myers' forecasts, and predicted that up to one billion people could be displaced by environmental disruption by 2050 (Christian Aid 2007). Even though the report acknowledged that 600 million of the predicted one billion would actually be displaced because of development projects, rather than actual environmental change, the estimate was still significantly higher than those made previously.

As in 1995 the numbers of the total environmental migrants was at least 25 million people, compared with 27 million traditional refugees i.e. people fleeing political oppression, religious persecution and ethnic troubles. The total environmental migrants doubled by 2010, since then, although there is no good estimate available of today's total. Moreover, it could increase steadily for a good while thereafter as growing numbers of impoverished people press ever harder on over-loaded environments. When global warming takes hold, there could be as many as 200 million people overtaken by disruptions of monsoon systems and other rainfall regimes, by droughts of unprecedented severity and duration, and by sea level rise and coastal flooding.

Extent of Environmental Migration
Selected Estimates and Projections on the E

ected Estimates and Projections on the Extent of Environmental Migration				
Sources	WorldwideSourceEstimationsonnumberof"environmentalrefugees" by 2013	Projections of the number of future "environmental refugees"		
Global Humanitarian Forum 2009: The Anatomy of a Silent Crisis. Geneva, pp. 48-49	26 million "climate refugees"	72 million "climate refugees" by 2030		
Environmental Justice Foundation (EJF) 2009: No Place Like Home. Where Next for Climate Refugees. London, p. 4		200 million "environmental refugees", which 150 million are "climate refugees" by 2050		
United Nations University - Institute for Environment and Human Security 2007: Control, Adapt or Flee. How To Face Environmental Migration? Bonn, pp.15-18	10 million "environmental refugees"	50 million "environmental refugees" by 2010		
Friends of the Earth 2007: A Citizen's Guide to Climate Refugees. Amsterdam, p. 8		200 million "climate refugees" by 2050		
Greenpeace 2007: Klimaflüchtlinge. Die verleugnete Katastrophe. Hamburg, pp. 1-2, 27 Nicholas Stern 2007: The Economics of Climate Change. The Stern Review. Cambridge, pp. 128-130	20 million "climate refugees"	150-200million"climaterefugees" in the course of thenext 30 years150-200millionrefugees" by 2050		
Christian Aid 2007: Human Tide: The real Migration Crisis. London, p. 5-6	25 million "environmental refugees"	50 million "environmental" and 250 million "climate" refugees by 2050; plus a possible 645 million more people displaced by development projects like dams		
United Nations 2005: Millennium Ecosystem Assessment Report. Washington.	20 million "environmental refugees"	50 million "environmental refugees" by 2050		
United Nations High Commissioner on Refugees (UNHCR) 2002: Environmental Migrants and Refugees. Refugees No.127. Geneva, p. 12	24 million "environmental refugees"			
International Federation of Red Cross and Red Crescent Societies: World Disaster Report 2001, Focus on recovery. Geneva, p.11	25 million "environmental refugees"			
WorldWatch Institute 1988:	10 million			

Environmental Refugees: A Yardstick of Habitability. Washington, p. 38	"environmental refugees"	
United Nations Environmental	30 million refugees, of	
Program (UNEP) 1985: Environmental	which many are	
Refugees. Nairobi, p. 8	"environmental	
	refugees"	

Source:http://www.bpb.de/gesellschaft/migration/kurzdossiers/168682/environmental-changes

# Causes of Displacement:

## Global Warming

Over the past 50 years, the average global temperature has increased at the fastest rate in recorded history. Global warming (*Temperature rise*) is the most recent chapter of climate change. Global warming occurs when carbon dioxide (CO2) and other air pollutants and greenhouse gases collect in the atmosphere and absorb sunlight and solar radiation that have bounced off the earth's surface. Normally, this radiation would escape into space-but these pollutants, which can last two centuries in the atmosphere, trap the heat and cause the planet to get hotter. That's what is known as the green house effects. Human activities like burning fossil fuels and cutting down forests contribute to global warming because they release greenhouse gases. Rising temperatures associated with global warming cause glaciers and ice caps to melt. This can cause coastal flooding and make sea levels rise. Rising temperatures also lead to droughts causing more dramatic water shortages and desertification (the transformation of arable land to desert). Some of these effects, such as sea level rise, can put land completely underwater, making it uninhabitable.

#### Sea Level Rise

Sea-level rise is one of the most significant effects of climate change. High projected rates of future sea-level rise have captured the attention of the world. Particularly, countries which are located in low-lying areas as well as small islands are concerned that their land areas would be decreased due to inundation and coastal erosion and, at worst, a large proportion of their population may be forced to migrate to other countries. Therefore, this issue has resulted in heightened attention internationally, as the effects of climate change become apparent (Mimura, 2013)Climate changes take effect immediately where areas are threatened because of rising sea levels due to flooding or salinization(Oliver Smith 2011). Climate research assumes that the sea level raised a total of 15 to 20 centimetres in the 20th century. Since the beginning of the 1990s, it has risen about 3 centimetres per decade. Current model calculations predict a rise of one meter by the year 2100(Rahmstorf/Schellnhuber 2012; Latif 2012). The Intergovernmental Panel on Climate Change (IPCC) predicts that sea levels would raise a total of 0.18 to 0.6 meters (7 inches to 2 feet) between 1990 and 2100. Further, one metre sea level rise can put 145 million people at risk, 41% of who will be in south Asia, and 32% in East Asia (Anthoff et al 2006). A large portion of the world population is distributed across the edges of the continents. Around two-thirds of all people currently live in zones that are within 100 kilo meters from the ocean [Small/Nicholls (2003); Mc Granahan et al. (2008)]. Of the 50 largest cities of the world, 30 are located on the ocean. In the Pacific, around 7 million people live on islands that are threatened by a rise in sea level, among which are the "Sinking Islands" such as the Maldives, the Marshall Islands, Palau and the Salmon Islands, among others. Low-lying regions on the Gulf of Bengal, which in the past have already been confronted year after year with extensive flooding, are likewise endangered. This is also the case, for example, for the coastal zone in Bangladesh, where the rise in sea level due to climate change can reach between 1.44 and 2.09 meters by 2050. This would result in a reduction of the residential area by 16 to 18 percent, in which 13 to 15 percent of the population lives. Against this backdrop, apart from movement within the country, emigration from Bangladesh to India could increase. India is already the most significant destination of migration from Bangladesh. For Egypt, estimates for 2050 show an increase in sea level between 1.01 and 1.44 meters which will result in a 15 to 19 percent loss of possible liveable surface area and could affect 14 to 16 percent of the total population. The largest proportion of those affected may be able to relocate inside the country (Jacobson, 1988). If sea levels rise by one metre due to climate change, storm surges could make island nations such as the Maldives, the Marshall Islands, Kiribati, or Tuvalu largely uninhabitable and force people to take refuge in other countries (GACGC 2006). The rise in sea level leads not only to a loss in potential residential surface area, but also to a loss of farmland. This in turn has effects for food security. Many of the low-lying coastal regions of Asia are "granaries" of the world in so far as a large share of the global rice production is concentrated there, on which millions of people are directly or indirectly dependent. Estimates are that the rice supply of around 200 million people is immediately threatened by the rise in sea level.

#### Drought

While rising seas threaten coastal regions, drought can create climate inland migration. Slow- and sudden-onset hazards can cause temporary as well as long-lasting disruption to the environment as well as the societies. For example, slow-onset threats like droughts have wide reaching impacts. The most visible impact of droughts is the effect on agriculture. Within the agriculture sector, poor rural farmers dependent on rain-fed subsistence agriculture are specifically affected. However, problems in the agriculture sector then cascade into the economic and social sectors (e.g., famine) and can last beyond the duration of a drought. When climate stresses coincide with economic or social stresses, the potential for forced migration from rural areas increases significantly. When people cannot grow crops on the land where they live, they have to move somewhere else in order to survive. By 2099 the world is expected to be on average between 1.8°C and 4°C hotter than it is now. Large areas are expected to become drier-the proportion of land in constant drought expected to increase from 2 per cent to 10 per cent by 2050. Meanwhile, the proportion of land suffering extreme drought is predicted to increase from 1 per cent at present to 30 per cent by the end of the 21st century. Rainfall patterns will change as the hydrological cycle becomes more intense. In some places this means that rain will be more likely to fall in deluges (washing away top-soil and causing flooding). Millions of people in western India are suffering their worst drought in more than four decades. The middle part of India is facing a water shortage worse than the severe drought in 1972. Likewise, the 8th century Muslim expansion into the Mediterranean and southern Europe was, to some extent, driven by drought in the Middle East.

#### Loss of livelihood in agriculture sector

Climate change will have a profound impact on human and eco-systems during the coming decades through variations in global average temperature and rainfall according to the Fourth Assessment Report (FAR) of the Intergovernmental Panel on Climate Change (IPCC). Agriculture and allied sectors are highly sensitive to climate change. It will also affect livelihoods and human well-being. Consequently, the interaction between agricultural performance and weather, which has been an important area of research since the last few decades, has gained momentum due to the awareness of the adverse effects of climate change on agriculture and livelihood Climate change is a major challenge for agriculture, food security and rural livelihoods for billions of people including the poor in the Asia-Pacific region. Agriculture is the sector most vulnerable to climate change due to its high dependence on climate and weather and because people involved in agriculture tend to be poorer compared with urban residents. More than 60 per cent of the population is directly or indirectly relying on agriculture as a source of livelihood in Asia and the Pacific (Dev 2011). The climate change is already making impact on the lives of the population particularly the poor. It is already evident in a number of ways. Consistent warming trends and more frequent and intense extreme weather events such as droughts, cyclones, floods, and hailstorms have been observed across Asia and the Pacific in recent decades. This region has the highest number of poor people in the world. In many of these countries, poverty is intimately related to repeated exposure to climate risks. The lives of the poor are punctuated by the risks and vulnerabilities that come with an uncertain climate. Climate change will gradually further increase these risks and vulnerabilities, putting pressure on already over-stretched coping strategies and magnifying inequalities based on gender and other disadvantages (UNDP, 2007). Many climatologists predict a significant global warning in the coming decades due to rising atmospheric carbon dioxide and other green house gases. As a consequence, major changes in the hydrological regimes have been also forecast to occur. Changes in the temperature, solar radiation, and precipitation would have an effect on crop productivity and livestock agriculture. Individuals and households in Bangladesh, Ghana, Guatemala, India, Peru, Tanzania, Thailand and Viet Nam have migrated to manage risks related to rainfall variability and livelihood insecurity, for example (Warner and Afifi, 2014). Climate change is also likely to increase the vulnerabilities of people to coastal flooding. It has been estimated that by 2020 climate change may have exposed an additional six million people living in coastal areas to floods. They also estimate that up to 600 million more people could be at the risk of hunger by 2080 (Warren et al 2006). A recent report has indicated that the major deltas of the world such as the Ganges, Mekong and Nile may be adversely affected due to climate change and that it is already contributing to migration and displacement. For example, the report points out that populations living in the Ganges delta are highly vulnerable to cyclones and flooding. The delta has 8.5 million ha of agricultural lands, of which 486 thousand hectares would be inundated by a two metre sea level rise. Here, migration particularly towards coastal urban centres has emerged as a coping mechanism when extreme events endanger life and livelihoods.

#### **Implications for India**

Climate change might result in two types of displacement and migration in India. First, increased migration is likely within India due to the effects of climate change such as drought, desertification, sea level rise, water scarcity and low food productivity, and melting glaciers. Second, climate change might lead to increased flow of migrants from neighbouring countries due to the accelerated effects of climate change.

Climate Change is predicted to lead to more migration in India by reducing agricultural potential, increasing extreme weather event, destroying low-lying coastal areas. Natural disasters disproportionately affect South and East Asia, sub-Saharan Africa and small island states, with Asia accounting for almost 70 per cent of all lives lost through natural hazards (IOM, 2008a). Bangladesh, China and India were among the top ten worst affected countries between 1974 and 2003, in terms of numbers of people affected (Guha-Sapir et al., 2004: 29). The prevalence of floods and droughts in these places mean that numbers quickly reach hundreds of thousands and, in some cases, millions (Guha-Sapir et al., 2004: 30–33).

Major concerns in India are that sudden onset events such as glacial lake bursts, floods and cyclones likely to impact the Northeast and Himalayan regions of the country as well as the densely populated flood plains of major rivers (TERI/DFID 2009, Revi 2009).Glacial retreat in the Himalayas will jeopardize the water supply for millions. Cyclones and storm surges could devastate coastal cities including the mega cities of Mumbai and Chennai, as well as other million-plus cities such as Vishakhapatnam and Surat; cities will receive migrants from rural areas where livelihoods are damaged by climate change. This is likely to put greater pressure on scarce housing, water, sanitation facilities, and energy service (Kelkar and Bhadwal 2007). Meanwhile, melting glaciers will increase the risk of flooding during the wet season and reduce dry-season water supplies to one-sixth of the world's population, predominantly in the Indian sub-continent, parts of China and the Andes. According to the report, by the Asian Development Bank (ADB) and the Potsdam Institute for Climate Impact Research (PIK), Asia has the highest number of people exposed to flooding from possible storm surge events, particularly in the People's Republic of China (PRC), India, Bangladesh, and Indonesia

Forecasts suggest that annual temperature increases for South Asia may be between 2.4 and 4.5°C by the end of the century. Already today, rising annual mean temperatures have caused many Himalayan glaciers to retreat at a rapid rate of several tens of meters per year. These observed trends are likely to continue in the future. Studies suggest that the number of people in the region experiencing water stress could increase by up to 137 million (IFAD 2009). Decreased snow cover will affect snow-fed and glacial systems such as the Ganges and Brahmaputra, especially in India. 70 percent of the summer flow of the Ganges comes from snowmelt (FNC: 2004).

The Indian region is densely populated, stretches over 7,500 km and is inhabited by more than a 100 million people in nine coastal states (NATCOM 2004: 108). Recent observation suggests that the sea level has risen 2.5 mm per year since the 1950s along the Indian coast. Further, it is expected to be between 15 cm and 38 cm by the middle of this century and between 46 cm and 59 cm by the end of the century. A one-metre sea level rise is projected to displace approximately 7.1 million people in India, and about 5,764 sq km of land area will be lost, along with 4,200 km of roads (NATCOM 2004: 114). Several cases of displacement due to climate change have been reported in recent years. As a result, it is also expected that the sea would submerge most of the Ganga-Brahmaputra delta including the Sunderbans. Being the largest delta region in the world, its 12 southern islands are threatened with erosion and submergence. Prof. Sugata Hazra from the School of Oceanographic Studies at Jadavpur University, Kolkata, estimates that out of the 4.1 million people living in the islands, 70,000 would be rendered homeless by 2020. Currently, most of the displaced people from two already submerged and six shrinking islands have been heading for Pathar Pratima Island and Sagar Island.

Another serious climate change risks to India is the increased frequency, intensity and geographical coverage of drought. Migration is already a response to changing environmental conditions. For example, an estimated 3, 00,000 labourers migrate from drought-prone Bolangir district in western Orissa every year (Deshingkar 2003). Increased drought conditions due to climate change may affect the livelihoods of people inducing them to migrate. Climate change is expected to increase the severity of drought especially in western India, where Luni occupying about one-fourth of the area of Gujarat and 60% of the area of Rajasthan are likely to experience acute physical water-scarce conditions. The river basins of Mahi, Pennar, Sabarmati and Tapi are likely to experience constant water scarcities and shortage (NATCOM 2004). Climate change is expected to increase the drought in semi-arid peninsular India and western India, leading to further devastation of the landless and small and marginal farmers, who are typically forced to migrate more often to cities (Revi 2007). A World Bank report (World Bank, 2008) studied two drought prone regions in Andhra Pradesh and Maharashtra and one in Orissa for impact of climate change. It found that climate change could have the following serious impacts: (i) in 29 Andhra Pradesh dry-land farmers may see their incomes plunge by 20 per cent; (ii) in Maharashtra, sugarcane yields may fall dramatically by 25-30 per cent; and (iii) in Orissa, flooding will rise dramatically leading to a drop in rice yields by as much as 12 per cent in some districts. The persisting drought and heat waves affected more than 330 million people, and were followed by an extreme monsoon season from June to October in eastern, western and central India. At least 300 people died due to the heavy rain falls and landslides, while millions more were affected by deluged crops, destroyed roads or disrupted electricity and phone lines. Heat waves in South Asia persisted until the beginning of summer 2016, breaking a record of 51 degrees Celsius in Rajasthan in May 2016. More than 1,000 people died of hyperthermia or dehydration. In total, 1, 8000 fatalities were reported, especially in south-east India. The implications of a changing climate are particularly severe for India. In 2016, the country reported the highest number of deaths due to extreme weather (2,119 fatalities) and suffered losses of more than INR 1.4 trillion (USD 21 billion) in property damage. This is almost 1% of India's GDP of USD 2.5 trillion, and almost equivalent to the country's whole health budget. Migration may itself be one of several adaptation strategies and a coping strategy, for example in the Sahel region in times of drought or as a response to regular flooding in the floodplains of India.

Climate change might lead to increased flow of migrants from neighbouring countries. Forecasts estimate around 50 to 120 million people in Bangladesh will be affected may end up becoming climate refugees of Bangladesh in India (Lal 2016). Further estimates point towards an increase in cross-border migration trends in and out of India as a result of earthquakes and water-induced disasters in Nepal, droughts in Pakistan and Afghanistan, and the rise in sea levels around the Maldives Bangladesh's vulnerability to climate change is the main reason behind its number six ranking on the 2011 UN World Risk Index — the highest within South Asia. UN projections indicate that a sea level rise of 0.5 metres could see Bangladesh lose approximately 11 per cent of its land by 2050, which would affect around 15 million people. Climate migration to urban areas, such as Dhaka, has already begun as Bangladeshis flee desertification in the north, and floods and soil degradation caused by rising sea levels in the south. Yet Bangladesh cannot accommodate internal migration on such a large scale, and India will be the natural choice for many climate migrants because it has already absorbed millions of Bangladeshi migrants — both legal and illegal — since Bangladesh first came into being in 1971. The 2001 Indian census indicates that of the five million documented migrants living in India at the time, around three million were Bangladeshi. Given the age of this data, it is unlikely to reflect any large-scale climate migration, but the final 2011 census results will undoubtedly reflect a climate-induced increase in Bangladeshi migration to India. As many as 120 million people could be rendered homeless by 2100 both in India and Bangladesh due to sea level rise and given the proximity of Bangladesh to India much of the people will end up as migrants in Indian cities which are already facing resource scarcity (Rajan 2008). More than five million people in Bangladesh are living in areas which are highly vulnerable to cyclones and storm surges (McGranahan et al 2007). Flooding currently displaces 5,00,000 people every year in Bangladesh (Warner et al 2009). It has been estimated that 20 million people are annually migrating from Bangladesh to India (Brown 2007). The future effects of climate change are likely to increase the flow of population from Bangladesh to India. Myers (2002) argues that climate refugees from Bangladesh alone might outnumber all current refugees worldwide. He projected that 26 million refugees will come from Bangladesh. One of the earlier studies by Homer-Dixon (1994) concludes that Bangladeshi migrants have expanded the population of neighbouring India by 12 to 17 million over the last 40 years caused by environmental scarcity. Another study finds that Bangladesh is currently faced with severe crisis of land and water, caused by population growth, environmental change and recurring natural disasters and the flow of migration from Bangladesh to India may increase at a faster rate (Alam 2003).

The current studies indicate that climate change might induce a much larger migration from Bangladesh to India in the future. It may put additional pressures on the resource base of areas they will migrate in India and threaten the livelihoods of people who are presently living there. According to the office of United Nations High Commissions for Refugees (UNHCR) India grants asylum and provides direct assistance to some 200,000 refugees from neighbouring countries by the end of 2015. India has given shelter to Tibetans, Chakmas from Bangladesh, and refugees from Afghanistan, Srilanka stc. As the country lacks a national legal framework for asylum, UNHCR conducts registration and refugees and asylum-seekers of diverse origins are protected and assisted by their office in India.

Refugees Residing in India	188395			
Asylum Seekers	3675			
Total Population of Concern	192070			
Refugees Originating from India	11042			
Asylum Seekers	11879			
Total Population of Concern	23332			

#### The status of refugee regarding India

Source: 2014 UNHCR regional operations profile -South Asia

#### **II. CONCLUSIONS**

Climate change is likely to expose hundreds of millions of people to increasing environmental risks displacing a large number of people and forcing them to migrate. The legal issues around environmental displacement are multidimensional. Most often the affected populations move to a safer area within their own country – in which case they are referred to as 'internally displaced'. These people continue to remain under the protection of their own government and should be managed through domestic laws and internal policy decisions. The main cause and concern behind the internal migration is the economic factor; so agriculture and

non-farm sector at rural landscape should be given the top priority to control internal migration from rural to urban. Hence, the government should kick off inclusive rural policies through which credit support and rights based service delivery and other services can be assured to the target demography. Rural-urban migration can be controlled on a large scale if the government will provide all kind of support to the rural migrants for getting their livelihoods and provide them basic amenities for a descent standard of living at the rural areas as like as its urban counterpart. The government should develop public policy by integrating social inclusion in milieu of rural diversity for the wellbeing of all the segments of rural community.

However, the issue becomes complicated when those displaced cross the border into another country, raising the question of whether or not they can avail the protection of their new country of residence, and if so, under what legal framework. There is no internationally accepted instrument to govern this category of migrants. The cross-border displaced who have migrated due to climate change are not recognised as refugees under the 1951 Refugee Convention or its 1967 protocol, and thus do not qualify for protection under national or international legal frameworks for refugee protection. Since climate/environmental refugees do not get same legal protection and recognition as that of a refugee (as per United Nations High Convention for Refugees-UNHCR rules), climate refugees are excluded from claiming benefits of international and domestic aid that can help them overcome, adapt to and mitigate climate changerelated consequences. As a result, these victims are left to cope alone, are subjected to racial profiling and are under constant fear of deportation from the migrated country. In fact, the international community is yet to agree even on a definition of this category of displaced persons. There is no consensus on the definition and the status of climate refugees owing to the distinct meaning the term refugees carry under international law so a consensus among the international community on the definition of a climate refugee must be established. There is an emerging view that these people should be recognised as climate refugees by international laws and proper institutional arrangements should be made to address their problems.

Current knowledge based on the relation between climate change and migration of people is still limited. There is a need for a better understanding of the relation between climate change and migration. The international community should not be distracted by the semantic differences between words to describe the status of people migrating due to climate change. Their problems should be recognised and appropriate strategies and measures to assist the people displaced by climate change should be devised to effectively deal with the problem.

Though, more emphasis has been given to international migration due to climate change. But the people who move to other places within the countries due to climate change also suffer a lot. So there is also a need to recognise the displacement of people within the countries so that proper action can be taken to address their problems. They should not be left hanging in the category of "no-where" or "internally displaced" people, but rendered a legitimate status of a refugee and placed under the responsibility of UNHCR & UNFCC, local, state, national, and regional governments of respective countries in which climate related events affect their populations. The definition of a refugee should be broadened to acknowledge climate-affected peoples as beneficiaries to protection and aid. It is high time to make policymakers around the world sensitive to this pressing issue so they take this agenda on to sustain our planet and its people.

#### REFERENCES

- [1]. Anthoff, D, R Nicholls, R Tol and A Vafeidis (2006): "Global and Regional Exposure to Large Rises in Sea-Level: A Sensitivity Analysis", Tyndall Centre Working Paper No 90. Tyndall Centre for Climate Change Research, Norwich, London.
- [2]. Bates, Diane C. 2002. "Environmental Refugees? Classifying Human Migrations Caused by Environmental Change." *Population and Environment* 23 (5):465-77.
- [3]. Burke, E. et al., "Modelling the recent evolution of global drought and projections for the twenty-first century with the Hadley Centre climate model", *Journal of Hydrometeorology*, Vol. 7, October 2006.
- [4]. Brown, O (2007): "Climate Change and Forced Migration: Observations, Projections and Implications", Background paper for the 2007 Human Development Report.
- [5]. Byravan, Sujatha, and Sudhir Chella Rajan. 2006. "Providing new homes for climate change exiles." *Climate Policy* 6:247-52.
- [6]. Christian Aid. 2007. "Human Tide: The Real Migration Crisis." London: Christian Aid.
- [7]. Carlton, J. (2011, March 31). Wet Winter Can't Slake West's Thirst. Retrieved May 19, 2011, from Wall Street Journal: http://on.wsj.com/gmPD3t.
- [8]. Dev, S.Mahendra, (2011) Climate Change, Rural Livelihoods and Agriculture (focus on Food Security) in Asia-Pacific Region. WP-2011-014, Indira Gandhi Institute of Development Research, Mumbai
- [9]. European Commission, Science for Environment Policy THEMATIC ISSUE: Migration in response to environmental change, September 2015 Issue 51.

- [10]. Friends of the earth Australia,2004. A citizen's Guide to Climate Refugees. Fitzeoy, (Australia): Friends of the Earth Australia.
- [11]. Jacobson, Jodi (1988): "Environmental Refugees: A Yardstick of Habitability", World Watch Paper No 86, World Watch Institute, Washington DC
- [12]. Lal,Neeta (2016),Climate "Refugees" in South Asia Live in Fear to Deportation.
- [13]. GACGC (2006): "The Future Oceans: Warming Up, Rising High, Turning Sour, Berlin", German Advisory Council on Global Change.
- [14]. Homer-Dixon, Thomas (1994): "Environmental Scarcities and Violent Conflict: Evidence from Cases", *International Security*, 19(1): 5-40
- [15]. IOM (2007): Discussion Note, "Migration and the Environment", International Organisation for Migration, Geneva,
- http://www.iom.int/jahia/webdav/shared/shared/mainsite/about\_iom/en/council/94/MC\_NF\_288.pdf
- [16]. International Organisation for Migration, 2007, Discussion Note: Migration and the Environment (MC/INF/288 – 1 November 2007 - Ninety Fourth Sessions), 14 February 2008IOM, Geneva, Switzerland: International Organization for Migration.
- [17]. Mc Granahan, G, D Balk and B Anderson (2007): "The Rising Tide: Assessing the Risks of Climate Change and Human Settlements in Low Elevation Coastal
- [18]. Zones", Environment and Urbanisation, 19 (1):17-37.
- [19]. Myers, Norman. 1993. "Environmental Refugees in a Globally Warmed World." *Bio Science* 43 (11):752-61.
- [20]. ——. 1997. "Environmental Refugees." Population and Environment 19 (2):167-82.
- [21]. \_\_\_\_\_. 2002. "Environmental refugees: a growing phenomenon of the 21st century." *Philosophical Transactions of the Royal Society, London B* 357 (1420):609-13.
- [22]. Rajan, Chella S (2008): "Blue Alert", Greenpeace India Society, www.greenpeaceindia.org
- [23]. Renaud, F., Bogardi, J.J., Dun, O. and Warner, K. (2007) "Control, Adapt or Flee: How to Face Environmental Migration", InterSecTions, UNU-EHS, no. 5/2007, www.ehs.unu.edu/file.php?id=259
- [24]. Mimura, Nobuo, 2013, Sea-level rise caused by climate change and its implications for society.
- [25]. The Global Climate Risk Index 2018 released at Cop23 shows that India is alarmingly vulnerable resulting in many deaths and huge economic losses. https://www.thethirdpole.net/en/2017/11/12/climate-risk-perilously-high-in-india/
- [26]. The temperature spread refers to the current best estimates for 21st average temperature rises under low emission (B1) and high emission (A1F1) IPCC Special Report on Emission Scenarios (SRES). The range across both SRES' is from 1.1°C to 6.4°C in IPCC (2007) "Climate change 2007: The physical science basis summary for policy makers", Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Paris, February 2007, p. 10.
- [27]. Stern, N., (Ed.), The Economics of Climate Change: The Stern Review", Cambridge University
- [28]. Press, Cambridge, 2006, p. 56.
- [29]. Tearfund, "Feeling the Heat: why governments must act to tackle the impact of climate change on global water supplies and avert mass movement of climate change refugees", London, 2006, p. 5.
- [30]. The World Bank (2008), Climate Change Impacts in Drought and Flood Affected Areas: Case Studies in India.
- [31]. UNDP. 2007. Fighting Climate Change: Human Solidarity in a Divided World. Human Development Report, 2007/08. New York: Palgrave Macmillan.
- [32]. United Nations Development Programme, 2009, Overcoming Barriers: Human Mobility and Development, *Human Development Report 2009*, New York: Palgrave Macmillan.
- [33]. UNISDR (2011a) Global assessment report on disaster risk reduction. Revealing Risk, Redefining Development
- [34]. Warner, K. and Afifi, T. (2014) 'Where the rain falls: Evidence from 8 countries on how vulnerable households use migration to manage risk of rainfall variability and food insecurity'. *Climate and Development*, 6(1), pp.1-17.
- [35]. Warner K, C Ehrhart, Alex de Sherbenin, S Adamo and T Chin-Onn (2009): "In Search of Shelter, Mapping the Effects of Climate Change on Human Migration and Displacement", by 2008 Cooperativefor Assistance and Relief Everywhere, Inc (CARE).
- [36]. http://www.shram.org/blogs/?p=1417
- [37]. https://reliefweb.int/report/india/climate-migrants-lead-mass-migration-india-s-cities
- [38]. http://fairbd.net/climate-change-induced-migration-future-challenges-and-opportunities-for-bangladesh/
- [39]. http://www.bpb.de/gesellschaft/migration/kurzdossiers/168682/environmental-changes data environment refugees with source

- [40]. http://www.internal-displacement.org/library/publications/2015/global-estimates-2015-people-displacedby-disasters/ population displaced
- [41]. https://thewire.in/75688/environmental-migration-india-need-policy/?fromNewsdog=1
- [42]. Policy on migration

Dr. Pragnya Paramita Jena " Climate Change and Forced Migration" IOSR Journal Of Humanities And Social Science (IOSR-JHSS). vol. 23 no. 06, 2018, pp. 35-43.

\_\_\_\_\_

\_\_\_\_\_