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Climate Change, Coastal Population and the Security

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ABSTRACT

Global temperatures have increased by about 1.1°C (2°F) over pre-industrial levels, and this development is anticipated to grow in the ensuing decades. In the last decade of the century, the IPCC predicts that global temperatures may have risen by up to 3-5°C (5.4-9°F), which would have a considerable impact on weather patterns, sea levels, floods, food security, and human health. Millions of people might be forced to relocate due to rising sea levels, especially those residing in low-lying coastal regions and tiny island nations. The argument over whether the terms "climate refugee" or "environment refugee" accurately depict those who flee their homes because of climate-related problems or natural catastrophes. The international community has to be ready for communities and civilizations being uprooted owing to climate change.

Keywords: *Globalization, sea level, climate change, maritime and coastal security, climate refugee.*

I. INTRODUCTION

Global temperatures have increased over the last industrial century by about 1.1°C (2°F),³ and this drift is anticipated to carry on in the ensuing decades. According to the IPCC, current emission trends might result in an increase in global temperatures of up to 3-5°C (5.4–9.0°F) by the end of the century, which would have a considerable impact on weather patterns, sea levels, floods, food security, and human health, among other things.

Millions of people might be forced to relocate due to rising sea levels, especially those residing in low-lying coastal regions and tiny island nations. As sea levels rise, coastal regions become more susceptible to storm surges, erosion, and flooding, which can destroy homes and infrastructure and cause evictions. In addition, freshwater sources that have been contaminated by saltwater intrusion cannot be used for irrigation or drinking.⁴ The effects of sea level rise

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³ *ibid*

⁴ "Security Implications of Climate Change for India | Manohar Parrikar Institute for Defence Studies and Analyses" (*Security Implications of Climate Change for India | Manohar Parrikar Institute for Defence Studies and Analyses*, April 16, 2008) <<https://www.idsa.in/event/SecurityImplicationsofClimateChangeforIndia>>

may necessitate the evacuation of many residents in vulnerable coastal communities. Some of these individuals would be compelled to relocate to different areas of their own nation, while others might have to seek safety elsewhere.⁵

The phrase "climate refugee" or "environment refugee" is a topic of growing controversy since it does not fairly describe those who flee their homes due to catastrophes or climate-related problems. The phrase "climate refugee" has not been accepted or legally recognised in any international accord or convention, but the world community has come to perceive it as a rising problem.

The definition of a refugee in international customary law has been restricted to mentions of violence and conflict rather than the environment. The international community must be ready for the uprooting of civilizations and communities brought on by climate change. It is important to note that the issue has to be widely recognised, with specific guidelines and allowances for climate refugees, and that there is presently no international plan or legal framework in place to take climate change as a factor in migration.

These **research problem** which emanates from the issue of climate refugee from the global change in climate include:

1. **Legal status:** According to international law, climate refugees do not have a distinct legal status, hence they are not entitled to the same protections as refugees who are compelled to leave persecution or armed conflict. Accessing help and aid for climate refugees may be challenging due to their lack of legal protection.
2. **Lack of recognition:** It may be difficult for climate refugees to get the help and support they want since certain governments and communities may not be aware of the connection between climate change and relocation.
3. **Limited resources:** Since many areas where climate refugees come from are already struggling with poverty and a lack of resources, it may be tough for them to get a way through the needs like food, water, and shelter.
4. **Social and cultural obstacles:** When relocating to new places, climate refugees may encounter social and cultural obstacles including language hurdles, prejudice, and a lack of community support.

⁵ "India a Credible Actor on Climate Change | Manohar Parrikar Institute for Defence Studies and Analyses" (*India a Credible Actor on Climate Change | Manohar Parrikar Institute for Defence Studies and Analyses*, September 3, 2015) <https://www.idsa.in/idsacomments/IndiaaCredibleActoronClimateChange_smalaviya_030915>

5. Political and economic instability: Climate refugees may be compelled to move to regions already suffering political or economic unrest, which may compound their vulnerabilities and make it harder for them to start over.
6. Difficulties, such as the potential for drowning while travelling, a lack of access to food, water, and medical treatment, and the chance of being apprehended by authorities and deportation to the point of their departure or the home country.⁶

The basic **research questions** emerges from the above discussions around the climate refugee are:

1. How has climate change affected human migration patterns, and how many people are anticipated to flee from their homeland because of adverse global climatic in the next decades?
2. What legal frameworks exist to safeguard the rights of refugees from climate change, and what are their shortcomings and implementation difficulties?
3. What socioeconomic and environmental elements, and how do they vary across areas and populations, affect people's decisions to move as climate refugees?
4. What are the best practises and policies for supporting and assisting climate refugees, and how can nations and international organisations collaborate in this area?
5. How can the consequence of climate migration on host societies and the environment be addressed to provide long-term, fair solutions for all parties involved?
6. What are the potential and constraints of these remedies, and how can technology and innovation be used to solve the problems encountered by climate refugees?
7. What are the best practises for communicating with these stakeholders and what role can civil society and community-based organisations play in assisting climate refugees and fighting for their rights?
8. What are the effects of these experiences on the mental health and wellbeing of climate refugees, and how do they negotiate their sense of identity and belonging in new communities and cultures?
9. What ethical issues are raised by climate migration, and how may they be handled to

⁶ “Monday Morning Webinar on Climate Summit: Taking Stock | Manohar Parrikar Institute for Defence Studies and Analyses” (*Monday Morning Webinar on Climate Summit: Taking Stock | Manohar Parrikar Institute for Defence Studies and Analyses*, November 16, 2021) <<https://www.idsa.in/event/monday-morning-webinar-on-climate-change>>

safeguard the rights and dignity of those who flee it?

10. What are the consequences of various framing and messaging techniques for policy and practise, and how can the media and public discourse influence the narrative of climate migration?

The hypothesis to be tested for the above research question on climate change and climate refugee includes:

1. H1: The number of climate refugees will significantly rise as an outcome of the frequent and severity of natural disasters brought on by the ill effect of global climate change, forcing impacted populations to evacuate their homes in search of safety and security.
2. H2: Climate refugees are more susceptible to exploitation and abuse because they lack legal protection and recognition, which feeds the cycle of marginalisation and relocation.
3. H3: Exacerbating already-existing inequities, climate-induced relocation disproportionately impacts marginalised populations, such as women, children, and indigenous peoples.
4. H4: Given that migration patterns are affected by a variety of societal, economic, and environmental aspects, it is challenging to predict the long-term effects of climate change on migration patterns.

The coastal environment, which encompasses a variety of habitat types including mangroves, coral reefs, seagrass, estuaries, backwaters, etc., is the area where the land meets the ocean. It offers a wide range of advantages and services, such as those for supplying (fisheries), regulating (carbon sequestration), and cultural (tourist and leisure). It's crucial to keep in mind that many services that are required for the environment mitigation and adaptation along the coasts, including defence against hurricanes and sea level rise, averting erosion of shorelines, habitats provision over a number of threatened marine life, and of course, food security for a number of coastal populations around all over the globe. Global warming is a severe environmental problem that has been brought on by the problems that these ecosystems are now confronting as a consequence of human activity.⁷ Added sea levels rise has been due to worlds polar glacial melting which is now also a progressive phenomenon. As a result, tropical cyclones, deadly storm surges, and coastal hazards like flooding, landslides, and erosion are becoming more frequent, which has an impact on coastal ecosystems.⁸

⁷ Mitra A, "Blue Carbon: A Hidden Treasure in the Climate Change Science" (2013) 03 Journal of Marine Science: Research & Development <<http://dx.doi.org/10.4172/2155-9910.1000e116>>

⁸ "Understanding National Security Implications of Climate Risks | Manohar Parrikar Institute for Defence Studies and Analyses" (*Understanding National Security Implications of Climate Risks | Manohar Parrikar Institute for Defence Studies and Analyses*, March 15, 2016) <https://www.idsa.in/event/rt_understanding-national-security-

Protecting a nation's sovereignty, territorial integrity, and economic interests requires the security of its coastal regions and maritime boundaries. Since effective coastal security measures are required to stop and address national threats, they are a component of national security. For a nation's national security interests to be safeguarded, robust coastline security must always be maintained. This entails creating efficient monitoring and surveillance systems to identify and prevent threats, as well as creating strong law enforcement and reaction capabilities to deal with any events or security breaches as soon as they occur.⁹

Protection of people, ships, and property in the marine environment against malevolent or unlawful acts is referred to as maritime security. Stronger port security, the deployment of naval and air forces to monitor and stop suspicious boats, and the application of laws and regulations to discourage and penalise unlawful conduct are some examples of maritime security measures.¹⁰ In order to effectively defend against the migration of climate refugees by water, maritime security measures must be adjusted as climate refugees become a bigger problem. In order to stop the unlawful trafficking of migrants, ships may need to be more closely monitored. Additionally, regulations and processes for the safe and efficient disembarkation of refugees should they be detected may need to be developed. The special requirements of climate refugees must also be taken into account when designing marine security measures, such as guaranteeing that their rights are upheld and that they get the appropriate medical and humanitarian aid.

The surge of refugees and migrants may pose security risks, such as problems with border enforcement, human trafficking, and the spread of infectious illnesses. Terrorists or other criminals could use the opportunity to enter nations illegally, transport narcotics or weapons, or both. Additionally, the presence of numerous migrants and refugees in transit can have an impact on host nations and communities. In the end, it can have an impact on the stability of the area by causing social, economic, and political difficulties.

There have been several recent cases of people being displaced due to the impacts of climate change. Some examples include:

1. Cyclone Idai in Mozambique: In March 2019, Over 1,000 people died as a result of the devastating flooding brought on by Cyclone Idai, which hit Mozambique. An estimated 146,000 individuals were affected by the tragedy, many of them lost their homes and

implications-of-climate-risks>

⁹ "Geopolitics of Climate Change and India's Position | Manohar Parrikar Institute for Defence Studies and Analyses" (*Geopolitics of Climate Change and India's Position | Manohar Parrikar Institute for Defence Studies and Analyses*, September 19, 2008) <https://www.idsa.in/event/geopoliticsofclimatechange_uksinha_230908>

¹⁰ AK Harbola IG, "Maritime Anti-Piracy Bill - Defence Research and Studies" (*Maritime Anti-piracy Bill - Defence Research and Studies*, May 2, 2023) <<https://dras.in/maritime-anti-piracy-bill/>>

means of support.

2. Pacific Island nations: Some residents of small island nations like Tuvalu and Kiribati have been forced to take refuge due to various climate-related effects like rising sea levels. In case the nation of Kiribati becomes uninhabitable owing to sea level rise, the Kiribatian government acquired property in Fiji in 2020.
3. Central America: Food insecurity and forced migration from Central American nations like Honduras and Guatemala have recently been caused by drought and other climatic consequences.¹¹
4. Bangladesh: Bangladesh, a low-lying nation, is especially susceptible to the effects of adversarial global climatic effect the floods and sea level rise. Up to 18 million people in Bangladesh may be forced to leave their homes by 2050, according to estimates.

In the Indian Ocean area, maritime refugees not only present security difficulties but also humanitarian and environmental issues. Many of these migrants risk their lives by travelling in dangerous boats that aren't seaworthy, and they often become victims of human trafficking or exploitation. Loss of life, injuries, and diseases may also occur on these travels due to inadequate safety and assistance. Large-scale refugee and migration movements have the potential to harm the ecology and pollute the Indian Ocean. Because the boats used to transport refugees are frequently overcrowded and inadequately equipped, sewage, trash, and other pollutants are often dumped into the ocean.¹²

Now, it can be precisely said that when people or groups are forced to flee their homes as an outcome of environmental deterioration and climate change it will be termed as climate refugees. Climate refugees may traverse borders or relocate inside their own nations, and they often experience unstable living circumstances in their new residences.

According to a projection by the International Organisation of Migration (IOM), there would be between 200 million and 1 billion migrants worldwide by 2050. Additionally, small island states like the Maldives may become totally uninhabitable, according to the Sixth Assessment Report of the IPCC¹³ for 2022¹⁴. Considering a 1.5°C (2.7°F) increase in global warming, the

¹¹ Kaur DrJ, "Coastal Ecosystems and The Climate Refugees: Challenges and Legal Responses - Defence Research and Studies" (*Coastal Ecosystems and The Climate Refugees: Challenges and Legal Responses - Defence Research and Studies*, April 28, 2023) <<https://dras.in/coastal-ecosystems-and-the-climate-refugees-challenges-and-legal-responses/>>

¹² Singh CA, "Biodiversity Beyond National Jurisdiction Treaty– An Overview - Defence Research and Studies" (*Biodiversity Beyond National Jurisdiction Treaty– An Overview - Defence Research and Studies*, April 26, 2023) <<https://dras.in/biodiversity-beyond-national-jurisdiction-treaty-an-overview/>>

¹³ Intergovernmental Panel on Climate Change

¹⁴ Sanz Espinar G, https://riull.uil.es/Xmliu/Bitstream/Handle/915/30978/C_22_%282022%29_28.Pdf [2022]

globe confronts several inevitable climatic threats during the next twenty years.¹⁵ As a result, there is a growing discussion about the term "climate refugee" or "environment refugee," which centres on how accurately it describes people who migrate as a result of climate-related problems or disasters. The phrase "climate refugee" has not been accepted or legally recognised in any international accord or convention, but the world community has come to perceive it as a rising problem.

It should be underlined that coastal populations suffer the most because they lose their means of subsistence, their lands, and their homes, and because saltwater has polluted both the surface and the groundwater. Additionally, the Marshall Islands and Kiribati are low-lying Pacific atolls where rising sea levels have made every high tide a dangerous occurrence. Additionally, the frequent floods (Sea water) that swept through the villages severely damaged homes, harmed crops, and contaminated drinking water.

II. THE CLIMATE REFUGEES: A GHOST TERM

The definition of a refugee in international customary law has been restricted to mentions of violence and conflict rather than the environment. The international community must be ready for the uprooting of civilizations and communities brought on by climate change.

It is important to note that the issue has to be widely recognised, with specific guidelines and protections for climate refugees, despite the fact that there is presently no international strategy or legal framework in place to take climate change as a factor in migration.

III. COASTAL REGULATION ZONES, NOTIFICATION 2018

The most environmentally delicate sites, such as sand dunes, coral reefs, intertidal zones and mangroves are included in CRZ-1, according to the 2011 announcement.¹⁶ With the exception of military, strategic, and very rare public utility projects, it was restricted for tourism-related activity and development of infrastructure.¹⁷

The recent statement then classifies the CRZ-1. In eco-sensitive regions, designated as CRZ-IA, activities like mangrove walks, tree houses, nature paths, etc. are permitted. Additionally

Çédille 513 <<http://dx.doi.org/10.25145/j.cedille.2022.22.29>>

¹⁵ Santer BD and others, "Tropospheric Warming Over The Past Two Decades" (2017) 7 Scientific Reports <<http://dx.doi.org/10.1038/s41598-017-02520-7>>

¹⁶ "Coastal Regulation Zone Notification: What Development Are We Clearing Our Coasts For" (*Coastal Regulation Zone Notification: What development are we clearing our coasts for*, February 4, 2019) <<https://www.downtoearth.org.in/coverage/governance/coastal-regulation-zone-notification-what-development-are-we-clearing-our-coasts-for-63061>>

¹⁷ Maken E, "Managing Rising Sea Level - India - Defence Research and Studies" (*Managing Rising Sea Level - India - Defence Research and Studies*, February 24, 2023) <<https://dras.in/managing-rising-sea-level-india/>>

permitted in the CRZ-IA are sea links, desalination and salt harvesting facilities, and roads on stilts. For ports and sea linkages, the contentious land reformation¹⁸ and reclamation practice—in which newly formed earth is created for human society from ocean or lake bottoms and evidently shows significant negative effects on maritime coastal ecosystem—is permitted in intertidal or CRZ-IB zones.¹⁹

In CRZ-II, project developers are now permitted to enhance the floor space or the floor area ratio index in the significantly built-up CRZ-II region and construct hotels and other tourist amenities. This applies to a major portion of South Mumbai. According to the most recent announcement, NDZ in highly populated regions (where there are more than 2,161 people per sq. km. according to the 2011 Census) is dramatically reduced to 50 metres from HDL. Resorts, hotels, and other tourist-related facilities are theoretically permitted to be erected up to HTL. By placing accommodation facilities at 50 metres from the shore, residents would be exposed to extreme weather conditions with no protection.²⁰

CRZ-IV, in addition to being an essential fishing area for small fishermen, which encompasses the narrow coastal belt of seas stretching up to 12 nm²¹, also takes the brunt of trash from offshore industries including oil exploration, mining, and shipping. The 2018 notice permits land reclamation for the building of highways, harbours, and ports, as well as facilities for the transit of hazardous materials and the dumping of treated effluents.

It is important to remember that CRZ 2018 disregards the worries of 171 million people, or 14 percentage of the population, who reside in coastline regions. They rely on fishing in excess of 12 million. The law related to land rights recognition is similar to the Forest Rights Act, 2006 was proposed by the committee chaired by MS Swaminathan after the tsunami for the communities that live in customary right based coastal areas on. Unfortunately, the proposal at no time put into action.²²

Moreover, the traditional communities dwell in the CRZ-III areas who subsist on natural resources. As the permit altered the pattern of land use in CRZ-III regions to encourage tourism,

¹⁸ supra

¹⁹ A A, “Indian Indigenous Communities: Human Rights and Right to Development - Defence Research and Studies” (*Indian Indigenous Communities: Human Rights and Right to Development - Defence Research and Studies*, February 5, 2023) <<https://dras.in/indian-indigenous-communities-human-rights-and-right-to-development/>>

²⁰ Sakhuja DV, “Vietnam’s Macroeconomic Policy- Post COVID-19 - Defence Research and Studies” (*Vietnam’s Macroeconomic Policy- Post COVID-19 - Defence Research and Studies*, March 22, 2023) <<https://dras.in/vietnams-macroeconomic-policy-post-covid-19/>>

²¹ Nautical miles

²² Krishan Chauhan (AMC) MG, “Food Scarcity and Food Waste - Defence Research and Studies” (*Food Scarcity and Food Waste - Defence Research and Studies*, March 29, 2023) <<https://dras.in/food-scarcity-and-food-waste/>>

its effects on the way of life for nearby inhabitants were not considered. It should be mentioned that because of declining food supply and rising food costs, climate change is predicted to have a major effect on food insecurity in the upcoming future. Heat waves (periods of exceptionally high temperature) are projected to grow more often in the future and constitute a significant problem for agriculture. Competition for land may also rise if certain places become climatically unsuitable for producing.²³

when the plants are flowering then it has its most important stage for vegetation, but for the reason that there is extremely hot spells which disrupts this stage make the crops go bad, there might not even be any seeds. Animals under extreme heat may produce less and have lower fertility. Additionally, it may have a negative effect on the way their immune systems function, making them more vulnerable to certain diseases.

IV. CONCLUSION

The international community will need to embrace the notion of climate refugees strongly, and the term "climate migrants" must be acknowledged in a way that is legally binding. Therefore, it is necessary to properly amend the 1951 Refugee Convention in order to classify climate migrants as refugees. The G20 may come together and agree on sharing the cost of hosting displaced persons if the nations can come to an agreement that permits scheduled relocations/habitats for migrants across states. Additionally, the nations that are unable to grant asylum may make up for it by providing more money, training resources, and capacity building to address the climate change crises. At the international, regional, and national levels, G20 nations should be instrumental in advancing policies for managing migration related to climate change. Additionally, the top priority for climate migrants' efficient rehabilitation must be their education and the development of their skills and capacities.²⁴

We as humans have certain unsolved issues, such as why there is a lack of climate literacy and why it is not included in the study curriculum. Despite the fact that we are front-line countries, climate activism is still not widely practised in our area. What would happen to the rights of those who are impacted by climate change if the low-lying islands were entirely submerged? Will they have no state? If so, where will they go? How will they survive? if they are not

²³ Krishan Chauhan (AMC) MG, "Climate Change-Deaths Due Lightning and Heat Exhaustion - Defence Research and Studies" (*Climate Change-Deaths Due Lightning and Heat Exhaustion - Defence Research and Studies*, September 12, 2021) <<https://dras.in/climate-change-deaths-due-lightning-and-heat-exhaustion/>>

²⁴ Kumar Tripathi DA, "South Africa-India: 30 Years of Bonding - Defence Research and Studies" (*South Africa-India: 30 Years of Bonding - Defence Research and Studies*, April 12, 2023) <<https://dras.in/south-africa-india-30-years-of-bonding/>>

protected by Law.²⁵

Furthermore, maintaining regional and global security depends on coastal security in addition to protecting a nation's maritime borders. Ineffective coastal protection in one nation may lead to a security vacuum that terrorists or organised crime can take advantage of, destabilising the larger area. Therefore, for enhancing national security and maintaining regional and global stability, developing strong partnerships and cooperation between nations is essential to promote and strengthen coastal security.

Additionally, public and private sectors must contribute to the collaborative development of maritime security measures. Such cooperation will assist in ensuring that marine security measures are efficient, kind, and suitable for climate refugees' demands. Governments and the international community can guarantee that climate refugees are protected and that their rights are respected by adopting a comprehensive approach to marine security and taking into account the requirements of climate refugees.²⁶

In order to maintain their effectiveness and suit the demands of climate refugees, marine security measures must be periodically assessed and modified. These assessments must to include suggestions from key stakeholders including NGOs and civil society. In order to safeguard climate refugees and preserve their human rights, governments and the international community must also continue to watch out for appropriate marine security measures.²⁷

²⁵ Joe DS, "Climate Change and The Oceans - Defence Research and Studies" (*Climate Change and The Oceans - Defence Research and Studies*, July 21, 2020) <<https://dras.in/climate-change-and-the-oceans/>>

²⁶ Singh A, "Crisis Management By Public Servants - Defence Research and Studies" (*Crisis Management By Public Servants - Defence Research and Studies*, April 16, 2023) <<https://dras.in/crisis-management-by-public-servants/>>

²⁷ Favre W, "China France Relationship - Defence Research and Studies" (*China France Relationship - Defence Research and Studies*, April 22, 2023) <<https://dras.in/china-france-relationship/>>