

Comparative Study of Environmental Migration Issues in Bangladesh and Singapore

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Abstract: As the global climate crisis increasingly exacerbates, many countries are faced with more frequent natural disasters and the acceleration of slow on-set environmental degradation. In such context, environmental migration, comes into the international community's view. Though not a new phenomenon, environmental migration fails to fit in the current migration framework due to its multidisciplinary nature, as a result, there're no explicit legal documents and mechanism to protect environmental migrants. In response to the inaction, this article investigates the key factors of environmental migration and possible pathways through the comparative study of Bangladesh and Singapore. In the first part, the impact of climate change on both states are examined and compared. In the next part, the difficulties in defining and tackling environmental migration issues are proposed, followed by the overview of current legal pathways of Bangladesh, Singapore and international law. In the third part, principles concerning environmental migrants' human rights protection are discussed, and viable policy options are based on those principles and previous review of Bangladesh and Singapore's situation, reflecting on how the two states could act as examples to inspire the international community.

Keywords: climate change, international law, environmental migration

1. Introduction

According to international thinktank IEP's prediction [1], over one billion people at threat of being displaced by 2050 due to environmental change, conflict and civil unrest. The prediction suggests that about 1/60 of the global population would have to migrate, whether within their countries or cross national borders, to safer places. Particularly developing countries and small island states. As such situation brings up climate displacement issues into the global view, however, effective and widely acceptable solutions has not been posed by the global community other than some ambiguous advocacies. Currently, most countries would have to tackle the situation on their own, partially due to people's common reluctance and impotence to migrate far from their familiar environment. The international reluctance and inaction is understandable that the climate displacement is such a complex issue [2].

As the threat is approaching, tropical climate conditions and geographical patterns render Southeast Asia and Southern Asia countries particularly vulnerable and susceptible to climate change, floods, typhoon and tsunami being frequent occurrences. Therefore, climate displacement issues have become an emergency. This piece of research intends to investigate in the effective mitigation

methods of such issue by case studies of Bangladesh and Singapore, two Southeast Asian countries that are confronted with similar climate challenges and hazards. However, due to different economic conditions, their approached to climate displacement and relevant climate change mitigation are quite different. Thus, the case studies would compare the natural and social feature of these two countries, and try to inquire if they can, and how could they learn from each other and act for the common good for SE Asia as well as the global community, because such a successful practice in mitigation could be a future course of action.

2. An Overview of Climate Change and Environmental Migration in Bangladesh and Singapore

2.1. The Impact of Climate Change on Bangladesh and Singapore

While the governments having agreed on limiting global temperature rise to 1.5 degree by 2050 in the Paris Agreement, the current global warming trend is likely to fail the goal, as the global temperature is projected to rise 2 degrees by 2050. In a global scale, this rise could consequently result in changes in precipitation patterns, melting glaciers, rising sea levels and an increase in the frequency and magnitude of natural hazards. Such shifts could not only manifest in the form of threats to basic demands such as water security, food security and energy security, but also renders social aspects like economic security, personal security risky.

Bangladesh and Singapore are susceptible to the effect of climate change in the terms of natural condition, infrastructure and the exposure of population, however in different degrees respectively.

Bangladesh is naturally prone to disasters such as tropical cyclones, droughts, and floods. Located in Southern Asia, monsoon determines the pattern of precipitation and the amount of water of the Ganges [3]. Every summer, as the rich water is hindered by the flat lands, it would cause severe floods in the Ganges Delta, where most population of Bangladesh are concentrated, exceeding 1 billion. Otherwise, the lack of water in winter causes drought. The average intensity of floods has increased in the past 30 years, while in the past 50 years, Bangladesh had suffered about 20 drought conditions, more frequent than in the past. Such changes could directly impact on Bangladesh's agriculture and result in famines, economic hardships.

On the other hand, the natural condition of Singapore is more favorable [4]. Compared to its neighbors in Southeastern Asia, one of the most disaster-prone region, Singapore enjoys a rather stable weather and geological condition, the occurrence of droughts, floods, extreme weathers and earthquakes is significantly lower. Nevertheless, it is not exempt Singapore from the effects of climate change. Similar to Bangladesh and other Southeastern countries, it could be affected by global temperature rise and subsequent sea level rise, as well as the possible coastal damages like other small island countries, as Articles 4.8 and 4.10 of United Nations Framework Convention on Climate Change (UNFCCC) has pointed out in Articles 4.8 and 4.10.

A densely populated country as Singapore is, such future could result in considerable hazards, if not effectively prevented or mitigated.

2.2. Displacement Issues of the Two Countries

Natural disasters, gradual deforestation would be environmental migration could force, or trigger people to migrate to new places. The scale and pattern of environmental migration in Bangladesh and Singapore is very different. The displacement issues in Bangladesh has been a chronic problem: in the past years, due to the regular natural disasters occurrence and intrinsic poverty, millions of people from needy neighborhoods are being forced to abandon their homelands and move elsewhere, mostly within the country. Although the Bangladesh government has launched several programs such as resettlement plans in the past 20 years, these programs still fail to meet huge demands. A report by

the United Nations comments that such failure could be attributed to inefficiency of implementation and political corruption. Such trend is considered to persist, as the World Bank predicts that Bangladesh will have more than 19 million internal climate refugees by 2050, almost half the projected number for the entire South Asia region.

In comparison, the overall mobility of Singapore is far greater than Bangladesh mostly because of its economic factors no explicit patterns, people's lifestyle choices are representative, combining with its industrial structure, with services industry comprising at about 70 percent. In 2019's World Bank's Ease of doing business rank, Singapore ranked 2nd place, being the only Southeastern country. Otherwise, Singapore exhibited outstanding ability in tackling climate change and utilizing natural disadvantages. For example, 22% of Singapore's land Singapore has been the result of land reclamation, which expands Singapore's total capacity as a country. Besides, Singapore has been importing products primarily from China, Malaysia and America, complementing its insufficiency of natural resources. In this aspect, technology has served Singapore well: in order to decrease the dependence on imports, Singapore has launched water resource management programs, collecting rainwater from both forest catchment and urban catchment run-offs and from recycled water facilities. In addition, Singapore has built desalination plants, and plans to produce NEWater-recycled water from treatment by filtration [5].

2.3. Resilience

From 1980 to 2020, the annual mean temperature of Singapore has increased from 26.9°C to 28.0°C [6]. The mean sea level in the Straits of Singapore has also increased at the rate of 1.2mm to 1.7mm per year in the period 1975 to 2009. However, according to the history of Singapore's environmental efforts, it is could be concluded that it is capable to cope with bigger hazards more effectively compared to Bangladesh.

Why is Bangladesh lagging , what condition or factor is lacking? How could Singapore succeed? Such difference, the key variable is resilience, which is fluid and adaptable, and social vulnerability.

When is taken into consideration, compared with other countries, Bangladesh could be the most vulnerable country to climate change. On the other hand, the precipitation is projected to be more irregular, possibly more climate hazards like cyclones. These natural disasters could impact on the highly dense population of Singapore in the aspect of food security, public hygiene, and hot island effect. The sketch of tropical/monsoon climate, population, representing lot of Southeast and South Asian countries' struggle. Among five regions, Southern Asia and Southeastern Asia respectively has the highest and second highest occurrence of natural disasters.

Singapore and Bangladesh's resilience difference result from various differences in social-economic aspects. Singapore's industry and economic status, international relations--so they can invest a lot more money and educated human resources, edging on high tech to mitigate climate change. On the other hand, Bangladesh is populated, poor, lack international influence. Bangladesh is currently listed among the least developed countries, though planning to graduate in 2026.

The next section would discuss how to increase both countries' resilience, based on the research on both country's laws, economy. various factors, and examine which would be the most critical to human rights protection, and how can they be achieved or enhanced through legal pathways.

Among the causes for migration, environmental causes have been increasingly significant and complex. According to one of the most widely used predictions, there could be 2 billion people displaced by 2050, such issues has become a global focus. Natural disasters directly displace people and slow onset natural degradation has been steadily driving people away in a more implicit way [7]. Since the umbrella term "environmental migration" encompasses all cases of migration related to environmental causes, it could cover diverse conditions: forced or voluntary, external or internal, temporarily or permanently. Such conditions could result in diverse difficulties in law and policy

making to human rights protection, requiring assistance of both international community and the country.

The current migration framework could not suffice to meet demands. It's rigid. Otherwise, the UN refugee convention could not put these vulnerable people into protection.

Environmental migration could reflect a lot of things about the country, because it demands effective power to deploy different resources-resilience [8].

3. Focusing on Human Rights Protection: Overview and Discussion of Current Legal and Policies

3.1. Terminology and Causes: Ambiguity in Classification

Overall, there has been no official term for such a phenomenon describing migration that are mainly triggered by environmental causes. Centering around the key concepts of migration, environment and climate change, there has been various terms such as "climate refugee", "environmental refugee", "environmental displaced migrant" "environmental migrant" "eco-refugee". These terms, though diverse in forms, all reflect and point out a relationship between the three key concepts. This diversity and homogeneity of terms could reflect that the environmental causes as a factor for migration is a widely recognized phenomenon, and suggest the phenomenon's complex nature, rooted in migrants' interrelated motives and migration's various patterns, and possible political reluctance.

Currently, International Organization for Migration (IOM)'s definition is the most frequently used definition. IOM termed these migrants as "environmental migrants", as 'environmental migrants are persons or groups of persons who, predominantly for reasons of sudden or progressive change in the environment that adversely affects 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'. However, this definition is legally acknowledged. Besides, the term covers a wider range of migrants and allows a broader space for interpretation. For example, a Norwegian who moves to Hawaii every winter for sunshine and the Bangladeshi family who are forced to live in nearby slums after hit by floods could both be termed environmental migrants.

On the other hand, The United Nations High Commissioner for Refugees (UNHCR) has identified severe natural disasters as a factor of refugee and displacement, though they do not accept the term "climate refugee" under the current framework. The Global Compact on Refugees addressed that "climate, environmental degradation and disasters increasingly interact with the drivers of refugee movements", to be more specific, only when "where the adverse effects of climate change interact with armed conflict and violence", do people may have a valid claim for refugee status and require protection.

Such ambiguity is partly due to the difficulty for the current migration framework to incorporate environmental migration, since the framework, founded around 1940s after World War II, distinguish people into refugees and economic migrants. Refugees are defined as people who forced to leave their country for political reasons. In contrast, economic migrants act based on their own interests, therefore whose protection would be limited only to States. As the environmental migration, though not a new phenomenon, falls into neither of this binary classification, such ambiguity could increase States' reluctance to form efficient legal or political responses to fill the methodological gap.

There would be abundant theoretical and practical efforts required to tackle environmental migration issues. First, the classification and treatment of environmental immigrants would vary based on their mixed motives and backgrounds, as reflected in the terminological issues above. Second, those who are most affected by climate change and consequent forced displacement are often the states who most economically disadvantaged, and they find increasing domestic resilience and advocating cooperation to sufficiently solve the problem beyond their capacity; Third, as the term is

neither acknowledged by the international law nor does the advocacy hold compulsory force, it is of no other State's responsibility to help with these issues. Such reluctance has caused inaction in return though there has been advocacy from the international communities, there has been no effective mechanisms enacted to tackle the problem.

Thus, seeking protection for environmental migrants would naturally demand multi-dimensional approaches, which include legal and political methods, domestic action and international cooperation, theoretical classifications and negotiations interests.

3.2. Current Legal Pathways

Currently, environmental migrants classify as migrants, instead of refugees. However, the baseline protection might not suffice to protect environmental migrants' human rights, and differential treatment would be necessary. Besides, agreements do not imply compulsory action. Environmental migrants are mostly displaced because of natural disasters, and they are more vulnerable to new environments.

Since 1990s, Bangladesh has been making policies aimed at tackling displacement issues, ranging from resettling to rebuilding, food and water security plans and programs. However, these efforts are hindered by corruption to a certain extent [9].

As to Singapore, the government mostly take preventive measures to mitigate and adapt to climate change, and proposes rather flexible policies concerning human mobility.

Besides, one ruling of the United Nations could suggest a possible pathway to climate change asylum claims [10].

4. How to Mitigate and Adapt to Environmental Migration

4.1. Principles

The principles are concluded as below from the perspective of human rights protection, hazards mitigation and international cooperation, which are important factors in designing and implementing solutions such as policies and laws targeting environmental migration issues [11].

From bilateral, regional to a wider range of world. As dealing with environmental migration should primarily be the responsibility of the state's government, a wide range of effective international cooperation could not be expected unless there a successful practice in a smaller scale, such as bilateral or regional cooperation. Accordingly, the effective cooperation could serve as an example and motivator for the international community, prompting more countries to join in the action. Moreover, since currently the majority countries that receive the most severe impact of displacement issues are developing countries, North-South cooperation should be especially noted, referring to the principle of common but differentiated responsibility and the concept of climate justice [12].

Preventive and mitigation efforts combined. Proposed in Bangladesh Climate Change Strategy and Action Plan (BCCSAP), the following six areas should be the main focus: food security, social protection and health, comprehensive disaster management, infrastructure research and knowledge management, low carbon development and capacity building and institutional strengthening. Singapore has designed implemented various environmental technologies to adapt to natural disadvantages and mitigate climate change. Over 95 percent of Singapore's electricity is now generated by natural gas, instead of fuel oil. Also, Singapore has undertaken three National Climate Change Studies to research on the impact of climate change.

Differentiated treatment. A complex issue as environmental migration is, equality should be achieved during such process. specialized protection of vulnerable groups should be recognized as well. Disaster migrants migrate might confront economic hardships and difficulties in employment

due to lack of local resources, rendering groups such as women, disabled people and children more susceptible to poverty, disease and social isolation. The United Nations might cooperate with the states to launch programs aiming to provide protection for these people to protect their rights to health, housing and education.

Human rights based policy approach. As the OHCHR has noted in an official document, human rights should be the primacy in protecting migrants in vulnerable situations.

4.2. Domestic Policy Options

There have been attempts among states to tackle environmental migration problems by addressing policies or signing international agreements. For example, New Zealand has granted special visas to displaced oceanic islanders [13], but this policy has not received wide approval from the islanders, because they prefer to stay at their homelands. Thus, domestic capacity related subjects should be the priority to research and act on. On the other hand, Free Movement Agreements signed by Caribbean countries provide disaster-displaced people with temporary protection.

From the case studies of Bangladesh and Singapore, it could be concluded that the crucial elements of building resilience would be fund, legal pathways and executive effectiveness. Thus, to strengthen resilience, some of the solutions are proposed below.

In the case of Bangladesh, there have been millions of Bangladeshi migrated to its capital, Dhaka, challenging the city's capacity. However, the example of Mongla [14], a port city has showed people opportunities. Mongla has been successfully absorbing migrants by providing sufficient job opportunities and accommodations. To replicate the practice in Mongla require Bangladeshi government's support.

In Bangladesh's case, most displaced people in developing countries would not choose to migrate overbroad. Rather, they need resources to rebuild their homes or to accommodate them in new residence in their own country, which should primarily be the responsibility of the Bangladeshi government [15]. What the developed country, such as Singapore, could do is to contribute to climate justice by utilizing their relative economic and technological advantage to prevent future hazards and mitigate current situation. Singapore, on the other hand, would alleviate their country's own hazards in the future through participation in the global efforts in tackling climate change.

Thus, Bangladesh should learn from Singapore; however, their learning might be hindered by economic conditions. Singapore might provide funds and technologies to Bangladesh, whose practice might be momentous with sufficient help. To strengthen ties between two countries would require advocacy and endorsement from influential international organization authorities, such as the United Nations.

5. Conclusion

In summary, the mutual learning and cooperation between Bangladesh and Singapore could be significant to devising strategies towards environmental migration issues, especially in the aspect of North-South cooperation, considering their situations are representative of both sides. However, there are standing theoretical and practical difficulties in such process yet to overcome. There is no legally accepted term of environmental migrants, and the legal pathways migrants could seek are limited. Meanwhile, the countries who need resources most to mitigate and settle disaster-migration are mostly developing countries. To tackle such obstacles, firstly, human rights and other certain principles should be observed. Secondly, should focus on increasing resilience, including domestic capacity and international relations.

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