

# **Autonomy of Migration and Protection of Human Rights Among Arctic Indigenous Communities under Climate Change**

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**Abstract:** With climate change, the world is heating up. Floods, erosion, tsunamis, hurricanes, and a series of other natural disasters caused by environmental issues such as sea-level rise have already had multiple detrimental impacts on the Earth and humanity, and the Arctic region will also not be spared. The impact of climate change is pervasive – it has not only changed the growth environment of vegetation and the predatory behavior of animals in the Arctic area but also already had an irreversible change on human lifestyle, making a variety of indigenous communities face the risk of displacement. The linkage effect of this impact is constantly disintegrating the entire Arctic ecosystem. Besides, without international recognition and government support, the groups who are forced to move are struggling with the implementation of the migration and it is urgent to improve the autonomy and human rights protection of immigrants in the Arctic. This thesis illustrates the environmental refugee identity crisis through the history and current status of migration in the Arctic and proposes countermeasures to address the issue of climate migrants from multiple perspectives of strengthening international cooperation, striving for both mitigation and active adaptation, establishing coping policies and governance mechanisms as well as management institutions in the international community.

## **1. Introduction**

Under the impact of global climate change, the environmental hazards caused by it have affected the habitat of multiple indigenous communities in the Arctic. Many local residents are facing the dilemma of displacement. However, in the process of migration, many indigenous communities have encountered a great hardship. They are forced to migrate yet their identity cannot be recognized internationally. Unlike the precedent of community relocation that was done under the help of the government, most of the currently unresolved climate-induced migrants lack of financial assistance and government support for relocation, and, coupled with the fact that their living conditions are declining because of the impact of climate change, face the risk of becoming environmental refugees. It is urgent to migrate themselves before their homes are no longer inhabitable – they need to determine their own future. How to protect the human rights of climate migrants in the international community, expand the scope of migration autonomy and complete their self-determined relocation under the influence of both environmental and social factors has become a great issue that cannot be avoided.

## **2. Migration in the Arctic**

### **2.1 Climate change is having impacts on everything**

Climate change is the consequence of continuous influences from multiple aspects. From the perspective of natural science, changes in solar radiation, earth orbit, volcanic activity, atmospheric and oceanic circulation all have possibilities causing global climate change [1]. Human activities, especially after the industrial revolution, are the primary causes of climate change, including carbon dioxide and other greenhouse gas emissions from human development and life, land use, urbanization, trade globalization, and so on [2]. The word that people normally mention nowadays,

'global warming', is one of the most important manifestations of climate change.

In recent decades, climate change has been evident. Since the 1970s, the temperature in the Arctic circle has risen by 2.3 degrees Celsius, at a rate double that of the global average [3]. The extensive melting of glaciers and sea ice and the rising temperature of permafrost indicate that the Arctic is experiencing strong warming. With the increase of temperature, the impact of climate change in the Arctic is significant. In the coastal areas of the Arctic, the shoreline is diminishing at an alarming speed. Sea ice melting, floods and frequent storms caused by rising temperature led to erosion of coastal soil and destruction of geological layers. For instance, in Alaska and northern Canada, some villages and communities above the permafrost have been faced with varying degrees of sinking soil and construction collapse [4]. Indigenous communities living in the non-urban region, which is usually coastal areas, are also suffering from the risk of forced migration and crisis of resettlement.

The number of indigenous people living in arctic regions is estimated to be about one million, which is around 10% of the total population [3]. There are over 40 distinct ethnic groups remaining in the Arctic, and the water and land of the Arctic anchor indigenous peoples, supplying services from which their populations will thrive. The Arctic Indigenous groups have distinct characteristics, such as their language, local cuisine, and traditional ways of life. However, as industrialization progresses, resource extraction processes such as oil exploration, natural gas discovery, and mineral mining, as well as the effects of global climate change, are becoming more and more common.

The impact of climate change is not only on human beings, but also on animal and plant species, and even the entire Arctic ecosystem. For example, with climate warming, some tree lines may move northward, and the Arctic vegetation will be impaired due to the gradual transition of its living environment. This phenomenon will lead to the inhibition of the growth and productivity response of the original vegetation, and then affect the survival of animal species that depend on these plants, especially herbivores such as Arctic rabbit, reindeer, and musk ox; On the other hand, due to the melting of sea ice, some animals that rely on sea ice to capture food, such as polar bears and seals, will be more difficult to obtain the protection of sea ice, making it difficult for hunters to capture their prey. Such ecological impacts can, directly and indirectly, affect the lifestyles and subsistence conditions of Arctic indigenous groups that depend on hunting, fishing, and animal husbandry, meaning that continuous climate change will threaten the survival of an increasing number of Arctic communities.

In Alaska, more than 85% of Native villages have been affected by more or less severe flooding and coastal erosion [5]. Some communities have built breakwaters or other temporary protection measures, while for others, relocation is the only way forward. From this point of view, climate-induced migration may become a huge trouble. In fact, a series of survival problems caused by the shift of original habitats, such as different growth environments, change of lifestyle, unknown resource acquisition conditions, are not the primary ones. For human migration in the Arctic, they are often trapped in the first question – where is their future homeland. In addition to natural factors such as environmental conditions, socio-economic factors often make things worse – they are not able to implement the migration themselves.

## **2.2 The history of human migration in the Arctic**

About 6000 years ago, humans first entered the Arctic region (from northern Alaska and Canada to Greenland), with different early indigenous cultural units and traditional lifestyles. With a complex prehistoric history of 5000 years, there were many human migrations and population movements in the Arctic region of eastern North America. Although archaeologists have connoted that these human movements were caused by multiple factors, climate change is still assumed to be the primary driving factor that led human groups to migrate from one region into another. Using radiocarbon data as the research method, scholars extracted three representative large-scale human migrations through the study of historical events, environmental conditions, and social background [6]. The first movement was the late Dorset Paleo-Inuit expansion to the central Arctic and high-latitude regions, which took place in the last first millennium A.D., around 800-1000. During this period, from Victoria Island in the west to Labrador in the East, north to northwest Greenland, the late Dorset settlements covered

most of the Eastern Arctic area to the greatest extent, and the migration of this population was also confirmed to be consistent with the global warming temperature of the medieval climate anomaly. The second important migration occurred in the late 13th century when the Tuley Inuit group migrated from Alaska to the Eastern Arctic. However, there is no direct evidence to interpret that this movement is closely synchronized with climate change at that era for the human migration occurred several centuries after the underlying warming trend in the Eastern Arctic, so the Thule migration is not considered by archaeologists as a response to climate change in the Eastern Arctic but more presumably to be associated to the social factors in Alaska. The last is that the Inuit gradually abandoned the northern region in the middle of the second millennium, moved southward in the Hudson Bay and Labrador coast, and finally established their new settlements in the southern region. This action lasted for half a century (in around 1400-1900 A.D.), and climate change could not explain all the movements during this period. The records of radiocarbon illustrated that migration and settlement have a strong correlation with the early trade activities in Europe, and it is speculated that there was commodity trade in coastal areas. Through these three case studies of early human movements, it is indicated that the relations between human migration and climate change are complex, irregular, and variable. During the process of migration, there may also be social and economic factors that influenced and potentially promoted the movements of indigenous groups that mismatched the environmental conditions at that time, proving the variety of the influencing factors of human migration.

### **2.3 Factors that influence the migration action**

Although the impacts of climate change and the Arctic and global migration behaviors are gradually recognized and perceived, the relevant theoretical research about migration in the Arctic is still not well-developed. There is an absence of methodologies and migration criteria to deal with climate change. But fortunately, the relevant government agencies and international organizations have recorded many cases of communities forced to relocate due to climate change. Through the previous historical examples of human migration, it is not arduous to find that Arctic migration is usually a human movement or permanent shift of the community residence. Since human migration alters the living environment of residents, it is regularly followed by human resource investments in order to improve the quality of life or increase the environmental adaptability of communities. As the earliest migration theory, neoclassical economics focused on the driving forces behind consumption and argued that the income gap, which resulted in the transition from low-income regions to high-income regions, was the initial driver fundamentally affecting Arctic migration [7]. Owing to the effects of urbanization and industrialization, there has been a significant income disparity between some parts of the Arctic region and the southern region in many Arctic countries, and this widening gap between the rich and the poor within countries contributes to the occurrence of human migration. Mineral and oil deposits stored underground in the south of Arctic countries, for example, have played a significant role in fostering the country's economic development due to environmental factors. The Russian western Siberian region is rich in natural gas resources and has a different economic development than the Arctic region, which indirectly encourages net migration in the Russian Arctic region during the Soviet era. With the residents of the Arctic region been constantly emigrating, the total population in the Arctic is rapidly decreasing.

In addition, the vulnerability of residence and the establishment of community structures will also be taken into account in resettlement programs. Coastal areas exposed to erosion threats and permafrost thawing will no longer be considered for permanent settlements for Arctic communities. Some social factors, such as marital status, education, health care, public resources, and other social services, are also thought to influence people's migration decisions. The location of residential areas is indirectly affected by the viability of the infrastructure and public buildings on which community structure relies, such as the population relocation by the government of the United States through the construction of new schools and the provision of education for Indigenous children from the end of the 19th century to the beginning of the 20th century [8]. With the infrastructure being re-developed and re-established, and the transport capacity of migration is limited, community migration has been

considered to be divided into several stages - people will move in batches to new locations to complete resettlement plans. Therefore, Arctic migration is a complex phenomenon, which is often affected by the environment, economy, and society.

### **3. Human Rights Protection and Migration Autonomy of Climate-induced Migrants**

#### **3.1 Hardship of modern human migration and inadequate protection on human rights**

With the growing international attention to the Arctic region, the exploration and development of Arctic resources have also increased. Although the current Arctic migration trend has strong regional characteristics, such as small-scale population migration resulting from concentrated labor demand, the Arctic population has not grown at the expected rate. According to estimates, population growth in the Arctic region is concentrated in larger cities, while small-scale settlements and indigenous communities see population declines [9]. This phenomenon indicates that the residents represented by the indigenous community are experiencing hardship to complete the forced migration. In Alaska, 213 villages were threatened by the tide advancing about 3 meters inland per year [5]. Some villages concerned by the state have finished relocation with the assistance of the government, but several more communities have not. When faced with the challenges of climate change, permanent displacement has proven to be the most effective response. Many indigenous groups are affected to varying degrees by the phenomenon of population migration to cities from villages that lack the capacity to rebuild their communities. This issue demonstrates that international recognition is not enough, and potential climate-induced displaced crowds reported by migrants have not been recognized internationally. Thus before they can be relocated, the identity of migrants must be strengthened, and their human rights should be protected too.

The protection of human rights of groups affected by environmental hazards and facing forced migration, however, has never been an effortless task to be internationally achieved. The UNFCCC (1992) has pointed out that global climate change and its negative impacts are the concern of all mankind [10]. Changes in the physical environment and ecosystems have been induced by climate change, which has a negative impact on the composition, adaptability, and productivity of natural and manmade ecosystems, as well as the operation of social and economic systems or a damaging repercussion on human health and welfare. From the perspective of human rights law, such ruinous influence of climate change on the health and well-being of populations has created obstacles to the enjoyment and realization of basic human rights. According to the report *Climate Change and Human Rights* (2015), the United Nations Environment Program (UNEP) pointed out that climate change is one of the greatest risks to contemporary human rights and sudden or gradual environmental damage or natural disasters caused by climate change pose a serious threat to people's human rights to life, health, food and residence all over the world [11]. Because of the close connection between climate change and human rights, the two independent legal systems of climate change and human rights need to be integrated, and the legal process of the international community to deal with climate change urgently needs to be carried out under the dual path of climate change law and human rights law, which also reflects the tendency of legal pluralism in international law on specific issues, in order to guarantee the interests or protected legal status of those who are forced to migrant in the context of the impact of climate change.

In the face of such difficult circumstances, the attention and efforts of international organizations for human rights protection have never stopped. In 2019, for the first time, the United Nations Human Rights Committee discussed the human rights obligations related to climate change in the review of periodic reports of Member States, requiring member states to take measures in the fields of sustainable use of natural resources and prevention and control of environmental pollution so as to protect people from the negative effects of climate change and natural disasters, especially those most vulnerable groups [12]. This means that the international obligations to address climate change and associated legal principles have been preliminarily acknowledged in the framework of international or regional human rights conventions in terms of duties. However, the practice and jurisprudence of the international community in dealing with climate change under human rights law are still in a

rather uncertain state, for example, the normative pathway of human rights applicable to the field of climate change is still unclear, and the right and jurisprudence of individuals suffering from the adverse impact of climate change to seek legal protection under international human rights law have not yet been established.

### 3.2 The emergence and debate of environmental refugees

The term '*refugee*' originated in seventeenth-century France, where Protestants who lost their civil rights and religious liberty following the abolition of the Edict of Nantes and were forced to flee from their own country to escape persecution by their own rulers were called '*réfugié*'. In the 20th century, due to war and political reasons, based on political considerations, the international community concluded some agreements and conventions on refugees, so that war-affected displaced populations could enjoy equitable protection of human rights and receive state and social assistance [13]. The most comprehensive implements and the core of refugee protection in current international law are the Convention Relating to the Status of Refugees (1951) and Protocol Relating to the Status of Refugees (1967). In order for refugees to enjoy the rights in the Convention equitably, the scope of refugees in the Protocol has been extended in some regions in the form of regional international documents. But while the scope of refugees had been expanded and enriched in concrete practice, regional documents did not include environmental factors as an independent cause. With the frequent occurrence of environmental problems caused by global climate change, environmental factors that led to forced human migration had become one of the factors generating refugees alongside those in the traditional refugee concept, such as social, political, and economic factors, and therefore the inclusion of environmental refugees in the traditional refugee protection system and the provision of international law protection for environmental refugees then gradually attracted the attention of environmental analysts, scholars and international organizations.

'*Environmental refugee*' was first mentioned in the 1940s. The concept of environmental refugees was first used by Lester Brown in the 1970s and has been of interest to the United Nations Environmental Protection Agency (UNEP) and the United Nations High Commissioner for Refugees (UNHCR) henceforth. El-Hinnawi (1985) defined an environmental refugee as a person who is forced or obliged to temporarily or permanently flee his or her original home or habitual residential place due to significant environmental damage that hinders his or her survival [14]. Since that time, researchers have extensively used the term 'environmental refugee'. Furthermore, he also illustrated the concept of 'environmental refugee' by classifying it as temporary environmental degradation, accidents, permanently displaced or relocated to other areas as a result of ongoing environmental change, and temporary or permanent displacement or relocation as a result of large-scale environmental degradation. – it could be seen that environmental refugees cover a wide spectrum of issues. Jacobson (1988) proposed a definition that focused on categorizing the factors causing environmental devastation, particularly the negative impact on people's health and well-being led by the consequences of regional disasters and land desertification, etc [15]. Thereafter, Myers and Kent (1995) also focused solely and put exclusive emphasis on environmental refugees due to certain human factors, defining environmental refugees as persons who are compelled to move from original places of habitual residence to seek refuge elsewhere because they are unable to obtain a safe living environment in their original house due to the environment change led by perceived reasons [16].

The emergence of the term 'environmental refugee' has not been without its opposing scholars, most of whom argue that environmental factors do not qualify for the classification of refugees. In response to the relationship between international environmental refugees and traditional convention refugees, Cooper (1998) advocated that the experience of persecution of environmental refugees for being a member of a particular social group fits perfectly into the traditional refugee definition [17]. Another skeptical opponent of environmental refugees, Black (2001), saw environmental refugees as an unhelpful, non-theoretically grounded, and completely unnecessary concept in practice [18]. Bell (2004) pointed out that this term oversimplifies the reasons for being displaced or forced to migrate [19]. Scholars who take a negative view of the term environmental refugee normally substitute other terms by proposing alternatives, including environmentally displaced persons, environment-induced

migrants, and environmental forced migrants. For example, Keane (2004) analyzed the causes and consequences of environmental migration, as well as examined whether international law has protected environmental refugees and environmentally displaced persons, arguing that the environment cannot be the sole element of migration and is usually combined with political and economic factors that produce migration and that the term environmental refugee was legally inappropriate terminology, and he also argued through his analysis that the focus of environmental refugees should be on environmental issues for the term to have utility and meaning [20]. Therefore, emphasizing that the environment is the sole cause or consequence of mass migration movements will increase interest in their protection. In response, many scholars have expressed the view that the existence of environmental refugees should be recognized and that it is necessary to adopt a new convention to specifically address the human rights protection of environmental refugees. On protection strategies for environmental refugees, Bush (2013) has presented the dilemma of environmental refugees (traditional environmental disasters, climate change hazards, outdated forms of protection in refugee conventions, controversial disagreements with the separation of traditional environmental and climate change migrants), argued that climate change is interacting with traditional environmental hazards and cannot artificially separate climate refugees from environmental refugees, and proposed what he believes to be the correct definition of environmental refugees, and later also proposed a legal framework for the Environmental Refugee Convention [21].

### **3.3 Difficulties for the identity of environmental refugees**

Environmental refugees have not yet acquired any status of explicit protection at the international level. In Convention Relating to the Status of Refugees and Protocol Relating to the Status of Refugees (hereinafter called the Convention and the Protocol), the main legal basis for UNHCR's protection for refugees mentioned above, the Convention defines the scope of the term 'refugee' as a person who, because of fear of race, religion, nationality, belonging to a particular social group, or having a particular political opinion, has not yet acquired a clearly protected status; or a person who does not have the nationality of a State and remains outside his or her own country because of fear of race, religion, or belonging to a particular social group or having a particular political opinion, and either is unable or unwilling to avail himself or herself of the protection of that State and outlines the human rights of displaced crowds, as well as the protection obligations of States towards the above-mentioned groups [22]. In practice, however, environmental refugees, especially transnational migrants, are largely unable to obtain refugee status, as they do not meet the 'persecution' requirement. For example, in New Zealand, a decision made by the Immigration and Protection Tribunal in 2014, which received widespread global coverage, is considered to be the first legal recognition of international environmental refugees. In this case, a family of four from Tuvalu applied for refugee status on the grounds that they would be subject to arbitrary deprivation of life or cruel treatment upon return to their home country due to water issues and the adverse effects of sea-level rise. In fact, the tribunal examined 'persecution' under the Convention and Protocol and found that this element was not met. Although based on the State's obligation to protect its nationals under international human rights law, the tribunal found that natural or man-made disasters, including those related to climate change, may provide a context for requesting recognition as a protected person, at the time of further consideration of the case, there was no evidence that the government of Tuvalu had not acted to protect people from this environmental disaster. In the end, the tribunal allowed the Tuvaluan family to stay in New Zealand on humanitarian grounds and at its discretion. As can be seen, the Convention limits the definition of 'refugee' to the reasons listed above, and while being labeled as a 'refugee' and having more of a 'refugee' attribute, the environmental reasons are not included in the definition above. However, because environmental reasons are not included in the above list, international environmental refugees are not recognized as 'refugees' under international law and do not enjoy the status and treatment of Convention refugees.

In addition to the fact that some countries do not fulfill their obligations under the Convention and the Protocol, many countries do not accept environmental refugees because environmental refugees are usually created in small countries with little international voice and have less influence on the

international community than they are currently reported to have, resulting in the lack of specific laws or conventions that recognize their status as environmental refugees and protect their human rights. Because most nations are not prepared, while also turning their attention on the initiatives put forward by certain countries, to admit that their cross-frontier relocation was caused by environmental factors or by climate change, the international environment refugees find themselves in an equivocal situation. For instance, a low-lying island nation, Kiribati, threatened with the urgency to relocate its entire population elsewhere as sea levels keep rising in recent years, has prepared for this issue by purchasing a piece of land in Fiji for resettlement and highlighting to the international community the difficult situation it has been facing to in 2014 but did not received any response or assistance from the international community until 2021 because of its small voice and international influence [23].

On the other hand, in the international community, there is still currently no agreed-upon definition for environmental refugees, which may lead to obscurity of their legal status that should be given in similar concepts. However, in general, an 'environmental refugee' can be defined as a person who is forced to leave his or her original place of residence due to the deterioration of the natural environment on which he or she relies due to various natural or man-made factors, and whose country is unable to provide protection for him or her. In recent decades, scholars from law, environmental, political, and economic disciplines have offered their perspectives and constructive proposals for guidelines and conventions. There is no doubt that the study of environmental refugees is an international topic, and there have been many efforts, particularly in South Asia and Europe, to mitigate the potential impact caused by regional environment-induced displacement or forced migration. In the Arctic, as a result of climate change, that indigenous peoples are increasingly being compelled to migrate both inside and beyond countries by the loss of soil and the state of uninhabitable places of residence has made these populations potential environmental refugees, implying that these migrants require international and legal recognition as well as regional protection measures as a foundation for protecting their human rights. At the same time, there is also a need to give the masses the right to participate and decide on migration in intra-community decision-making, giving some indigenous minorities with specific cultural backgrounds a certain degree of decision-making influence, thus bringing about a fundamental state change in forced migration movement from passive departure to active constructing their new community.

### **3.4 Enhance autonomy of migration among Arctic communities**

Autonomy has many different definitions in different fields. From a legal point of view, autonomy as a manifestation of human rights can be defined as the ability of a person to make self-determination. After the end of the Second World War, people's indignation against fascist atrocities and strong demands for democracy and peace around the world gave the rise of various human rights schools a major boost, with many waves of international human rights emerging. The right to self-government was introduced as a fundamental human right in the Universal Declaration of Human Rights (1948) to give people legal guarantees for self-management, self-determination, and self-decision making [24]. Many indigenous minorities have already been protected by international law to enjoy the right to the conservation of their traditional culture and the free use of their language and received much support to improve their cultural status in the international community through assistance on its development.

The lack of governmental, state, and social support for the forced migration of Arctic indigenous peoples is the primary difficulty faced by most potential displaced communities, which means that legal human rights protections can, to some extent, assist in the realization of their right to self-determination in relation to migration and resettlement, which we refer to here as the autonomy of migration – which can be seen as a form of human rights performance and a means of upholding the human rights of migrants in the modern migration process. For the Arctic community, the autonomy of migration does not imply self-migration in spite of border control and immigration policies, which has been misinterpreted and rejected by some scholars as a phenomenological interpretation when they perceive autonomy as a pattern of complete liberty. On the contrary, it should be used as an operational guideline for integrated opinion consolidation and joint decision-making by the migrating

community, emphasizing that the participation and decision-making of each individual in the community's migratory actions matter. Autonomy of migration is, therefore, even more, important in the case of forced migration – it represents bottom-up self-determination and self-direction, not in total disregard of the government, but as an aid to enable the community to make the most efficient and rational joint decisions in the absence of a sound top-down solution or governmental arrangement.

For the Arctic indigenous communities who are faced with issues being forced to flee their homes due to climate change, ecological imbalance, geological variation, and environmental pollution, that they have to find another inhabitable place to relocate has already made themselves in a passive state in terms of self-decision and mobility, which means that their ability to successfully migrate relies on the attitude of the government and the international community in a great extent. Therefore, in order to prevent the emergence of regional conflicts and refugee crisis from being exacerbated by humanitarian crises, it has become an important and urgent issue for the world to raise awareness of the seriousness of climate migration due to climate risks, explore and clarify some important issues related to climate migration, and analyze the constraints that cause climate migration.

Based on the concern and response to climate migration, vulnerable regions and countries must take immediate action to implement a broader range of measures to cope with climate migration, establish effective adaptation mechanisms at national, regional, and international levels to deal with its various adverse impacts, minimize the negative effects of future climate migration on global sustainable development, and enhance the migration autonomy of migrating communities. First, international cooperation should be strengthened to promote the establishment and improvement of inter-regional collaboration mechanisms. It is necessary to incorporate population migration caused by climate change into the international plans of national governments to adapt to climate change and make it a part of national actions, improve the international migration management system mainly by the International Organization for Migration (IOM), and make full use of the existing international development cooperation mechanisms, so as to jointly promote the effective solution of climate migration problems. Second, the international community should establish adaptable policies, governance mechanisms, and management institutions to respond to climate migration. The construction of a climate migration relief system should be further strengthened by improving its efficiency covering legal, policy, organizational and institutional fields, and a climate migration monitoring and evaluation mechanism to explore and explore the scale, distribution and future development trend of climate migration should be established too. Ultimately, global warming is almost inevitable, and even the most urgent mitigation efforts cannot avoid further impacts of climate change in the coming decades, which makes mitigation and active adaptation the main response measures in climate migration, so the government should also work on both mitigation and active adaptation to reduce the social risks of forced migration of climate migrants, and at the same time to weaken the impact of climate risks and enhance the adaptive capacity of climate migrants by reducing their social vulnerability.

#### **4. Conclusion**

In the context of global climate change, its main manifestations of gradual and slow-onset climate risk and extreme and sudden catastrophic climate risk in the Arctic are becoming more and more elusive, and the probability of environmental risk occurrence is further increasing, which leads to climate migration and related issues becoming increasingly complex and sensitive. A clear definition of the concept of 'environmental refugee' is both an essential requirement for theoretical research and a practical need to effectively solve this social problem. The social risks faced by climate migrants include the urgent need to deal with the problems of food and habitat, as well as the issue of adapting their livelihoods and achieving cultural and self-identity in the approaching region's new natural and also humanity ecological environment. Climate-induced migrants are spreading globally rather than only in the Arctic area, thus solving a collection of problems related to their resettlement has been no longer the obligation for just one or a few nations, but requires a common responsibility of all human beings, and an active and effective communication to negotiate a solution or reach consensus, which implies the need to recommend international cooperation between countries to deal with this problem.

Climate migration needs to be brought into the scope of policy consideration and a unified management organization needs to be formed in the international community to manage climate migration affairs. Last but not least, the establishment of a monitoring and evaluation mechanism for climate migration and the negotiation of appropriate policies and management systems for climate migration may help in the statistics and prediction of climate migration, policy formulation, and national management.

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