



**Policy Options to Support  
Climate-Induced Migration in Asia and the Pacific**  
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## **Introduction**

Human migration – including forced displacement – is expected to become one of climate change’s key impacts upon societies. Though the amplitude of these migration movements remains difficult to forecast, climate change might become the major driver of migration in the 21<sup>st</sup> century. The nature and the amplitude of these migration movements will be determined, to a large extent, by the policy responses that will address the social dimensions of climate change. Thus an appropriate attention to the subject now can help prevent forced displacement and improve the resilience of the most vulnerable countries and communities.

In Asia and the Pacific, these impacts will be further compounded by non-climate related natural disasters and other environmental changes, making it the region where most migration and displacement is likely to happen. Asia and the Pacific is disproportionately affected by natural disasters: in 2010, the three countries that were hit by the most disasters were the People’s Republic of China, India and the Philippines. Between 1974 and 2003, about half of disasters worldwide took place in Asia and the Pacific<sup>1</sup>. In the decade 2000-2009, it accounted for 85% of global fatalities related to disasters.

Climate-induced migration is part of the broader framework of migration dynamics. As such, we do not consider in this paper that climate change induces a distinct category of migrants, but rather interplays with other drivers of migration. Similarly, we consider that migration is one of a number of possible responses to climate change. The policy responses and normative frameworks that address climate-induced migration remain scattered and highly inadequate. A key reason for this in Asia and the Pacific is the lack of reliable data about the nature and extent of population movements in general, and especially those related to environmental changes. In particular, little is known about the factors that induce some of those people affected by climate change to migrate while others stay behind. As a result of

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<sup>1</sup> Source: EM-DAT, International Disaster Database, [www.emdat.be](http://www.emdat.be).

this lack of information, the very nature of migration is generally not well understood, and climate-induced migration had until recently received much less attention than economic or conflict-induced migration.

ADB has been active in the study and analysis of climate change, including the way that climate change will impact upon migration patterns in Asia and the Pacific. As of now, very few mechanisms, frameworks and instruments address this kind of migration, and regional cooperation is very limited. Building on an initial study, ADB has undertaken a major technical assistance project with the aim of proposing policy options to support climate-induced migration in the region (RETA 7408).

This paper aims to introduce and stimulate the discussion during the policy dialogues that ADB and IOM are organizing in Geneva (9 June 2011) and Bangkok (16-17 June 2011). It is hoped that these policy dialogues will provide a major input to the recommendations of policy actions to support climate-induced migration. This paper first outlines some key initial facts on climate-induced migration in Asia-Pacific, then goes on to suggest some policy options, including funding mechanisms.

It should be noted that this discussion paper should in no way be interpreted as reflecting the official position of ADB or IOM on this issue.

## **1 Climate-Induced Migration in Asia and the Pacific**

Asia and the Pacific will be amongst the global regions most affected by the impacts of climate change, be they slow-onset changes or brutal catastrophic events. Such impacts include significant temperature increases, changing rainfall patterns, greater monsoon variability, sea-level rise, floods, and more intense tropical cyclones (Cruz et al. 2007). Asia and the Pacific is particularly vulnerable because of its already high degree of exposure to environmental risks, high population density, particularly at the coasts, and the high vulnerability of particular social or economic groups. Within Asia and the Pacific, climate change is expected to take the heaviest toll on the Pacific, South Asia, and Southeast Asia. Globally, 8 of the 10 countries with the greatest number of people living in low-elevation coastal zones are located here. As a result, it could experience population displacements of unprecedented scale in the coming decades.

At the same time, Asia and the Pacific has undergone massive and rapid socioeconomic transformation. It is home to 4 billion people, representing 60% of the world's population. It is also home to the most important source of international migrants worldwide. Migration within countries, especially from rural to urban areas, is another major factor of social transformation. One of the most striking demographic trends in Asia and the Pacific in recent decades has been an increase in the level and complexity of population mobility. Existing migration corridors and channels are expected to be further used by future migrants, including those displaced because of environmental disruptions. The capacity of some of these channels could be overwhelmed because of additional fluxes of migrants.

Countries and populations of Asia and the Pacific will be affected by climate change in different ways, leading to various migration scenarios. While most climate-induced migration will occur within countries, there is also likely to be an increase in cross-border migration. These migration flows will amplify the broader trend of rapid urbanization and leave the cities with a lack of resources to accommodate the influx of migrants, especially if cities continue to develop following Western models of urbanisation. Large-scale migration could thus threaten social cohesion and stability in receiving communities.

Conversely, migration can also be considered as part of a personal adaptation strategy and does not necessarily signal a failure to adapt. Indeed, in many circumstances, out-migration can serve as a way of coping with climate change, as well as a mechanism to reduce poverty and increase resilience in affected areas. In the near future, migration – most likely circular or temporary migration – will be a more common form of adaptation and response to the impact of climate change than the displacement of entire communities, which will occur as a last resort once adaptation possibilities and community resilience are exhausted. The most vulnerable groups however, including poor women, the elderly and socially marginalized, often lack the resources that would allow them to migrate, and are thus unable to use migration as an adaptation strategy.

Climate change is expected to exacerbate poverty and health problems, but will also interplay with other environmental disruptions. Asia and the Pacific was the region most affected by disasters during the last decade, accounting for 85% of global fatalities due to natural disasters during 2000–2009. The number of catastrophic

events has more than doubled since the decade of 1980–1989.

In **East Asia**, several of the People's Republic of China's megacities are located in coastal and inner valley areas vulnerable to coastal and riparian flooding and inundation. An increasing number of cities are also vulnerable to earthquakes because of poor land use management, poor governance, lack of compliance to building regulations, etc. These at-risk populations are projected to grow substantially. In the region, more than 60% of the people depend directly on agriculture for their livelihoods, a large number of them in poverty, and the majority of the population in hot spots is now rural. Climate related events are expected to contribute to rural–urban migration substantially, which means a much larger urban population than now as early as in 2020. Despite that, the People's Republic of China has already the largest number of people (almost 80 million) living in cities at less than 10 meters above current sea level. The country has also implemented some major relocation programmes as a way to combat desertification.

In **Southeast Asia**, coastal flooding poses the greatest risk induced by climate change, with around one-third of the Southeast Asian population living in high-risk areas. These populations are concentrated in Indonesia, Myanmar, Philippines, Thailand, and Viet Nam (including Jakarta, Manila, Bangkok, and Ho Chi Minh City). Southeast Asian megacities are growing rapidly, due to both natural growth and rural–urban migration, and many of them are located in zones of seismic risks. Urban vulnerability is also linked to food security: in Viet Nam, for example, the rice growing areas of the Mekong delta are highly vulnerable to salinisation. Southeast Asian countries figure prominently among countries with the largest numbers of urban dwellers in coastal areas at risk of inundation (with 3 of 10 of the world's countries with the highest populations in low-elevation coastal zones) as well as in those with the largest proportions of their national populations at risk of coastal inundation. Another considerable threat is the risk posed by cyclones. With regard to migration, the region is characterised by a wide diversity in migration patterns: while some countries tend to send migrants abroad, others are more of receiving countries.

**South Asia**, with around a quarter of the world's population and continuing high levels of poverty, is also an area at risk of being affected by the impacts of climate change, in addition to being a zone prone to earthquakes. Large populations in India live in areas likely to experience increased riparian flooding and increasing water

stress as a result of climate change—major factors that will lead to lower agricultural productivity. A significant number will also be affected by coastal flooding, while others will be displaced because of coastal and riverbank erosion. Bangladesh also figures prominently in global discussions of climate change, given its millions of poor living in the deltaic regions and already subject to severe environmental hazard. The country is already at high risk of severe or catastrophic environmental hazards, with flood risk from sea surges, river flow, and local rainfall events, as well as coastal and riverbank erosion. Moreover, migration is increasingly being used within India and Bangladesh as a coping mechanism in the face of environmental and economic challenges (Afsar 2005, Siddiqui 2005). With changes in environmental and climatic conditions, Bangladesh will increasingly face the challenge of resettling and rehabilitating the affected population. The country's international networks will, therefore, play a vital role in times of future environmental crises. In Nepal, climate change impacts, such as more extreme monsoon rainfall and associated landslides and floods, would impoverish many Nepalis in the hill and mountain valley regions. Furthermore, glacial lake outburst floods will become more frequent, leading to a potentially significant increase in migration to other areas. Pakistan has also long been subject to floods and other major disasters – last year, floods of the Indus River displaced more than 17 million people. With an average elevation of 1.5 metres, the Maldives could see their very existence at threat because of rising sea level. The highest peak of the country's 1190 islands is only 2.3 metres, and the population is scattered over 200 islands.

The concept of climate-induced migration is not new in **Central Asia**. The region has experienced some of the world's most dramatic environmental crises of recent years, with water problems predominant. A large part of the region's population lives in areas at high risk of increased water stress due to climate change. Population growth in hot spots in each of the Central Asian countries indicates that, except for Kazakhstan, almost all of the population in the region is living in areas at risk of climate change impact, and the impact is almost entirely increased water stress as a result of reduced rainfall and runoff. The impact of climate change is exacerbated by a high degree of socioeconomic vulnerability. Average incomes are low, poverty is high, and governance is often weak, while many are reliant upon agriculture for livelihood.

Finally, the **Pacific** region faces significant challenges from climate change,

especially rising sea levels, cyclones, droughts, and storm surges. Low-lying atolls and coral islands have drawn global attention to the potentially devastating impacts on small nations such as Tuvalu and Kiribati. The situation is exacerbated by a demographic crisis, including high population growth, especially in the Melanesia subregion, and a bulging youth segment. With the exception of Papua New Guinea, virtually the entire national populations of the island states are to be considered hot spots of substantial impact, although the coastal areas are most at risk. Some countries have already explored with Australia and New Zealand different plans for the relocation of their populations. In Papua New Guinea, the southern coast and several low-lying islands are vulnerable to the effects of an increase in sea levels, while substantial inland areas are vulnerable to riparian flooding. Two-thirds of the population at risk from coastal flooding resides in urban areas, while almost all of those at risk of riparian flooding live in rural areas. There has already been some relocation of people from the Carteret Islands off the coast of Papua New Guinea, due to the threat of inundation from a combination of subsidence, storm surge, and sea-level rise. Relocation from the islands of Bougainville also began recently.

## **2 Initial policy recommendations**

We propose to delineate our policy recommendations for Asia-Pacific around 6 overarching themes:

### **2.1 Recognise that migration can be part of the solution**

Climate-induced migration has often been portrayed in a negative light, one that presented the migrants either as resourceless victims or agents of conflicts. We believe it is important to recognize that:

- migrants are resourceful agents. Migration can also be a coping and/or adaptation strategy;
- migration represents an improvement of human security, and not necessarily a threat to security.

In many countries of the region, migration can touch upon a confluence of interests, as richer countries could accommodate migrants from poorer countries in order to fill in gaps in the labour market and sustain demographic and economic growths. At the same time, these migrants could send remittances to their families, which would diversify their sources of income and thus reduce their vulnerability to environmental changes. There are many examples of mutually-benefiting migration agreements throughout the region. Such agreements could be expanded as a way for communities affected by environmental changes to better cope with these changes. Overall, reducing the barriers to migration on a regional scale and facilitating regional

mobility could greatly benefit the migrants, the origin and destination countries in the context of climate change.

A major issue here is that in general the poorest groups have been least able to migrate due to their limited resources and connections. Yet they are the group most vulnerable to the impacts of climate change. Thus a key policy challenge will be to **facilitate migration as an adaptation strategy** to climate change. Policy and programme interventions will be required if the poor are to be able to enhance existing channels but also to encourage the development of new channels within countries. A particular group that requires attention are poorer residents of large cities vulnerable to climate change impacts. They often live in areas most at risk of experiencing both gradual and sudden environmental hazards. It is important that mechanisms and resources be made available to the poorest populations to encourage their participation in migration as a way of adapting to climate change. Too often, these vulnerable populations are forgotten by policy-makers. Any initiative aiming at better assisting those who leave should not forget those who are forced to stay; one should work towards the establishment of a genuine **right to mobility**.

While most climate change related migration will occur within countries, there is likely to be an increase in international migration associated with climate change impacts as well. The key here is on building upon the already substantial international migration corridors, as well as identifying the potential for new flows. Rather than establishing a new category of climate-induced migrants – which is very difficult for a number of methodological and political reasons – one should work within the existing migration categories to accommodate the additional, climate-induced migration. Few destination countries would be willing to accept a new category of 'climate change migrants'. A range of existing channels for migration are already in place, and the demographic reality in those low fertility and ageing countries is that there will be an increased need for migration to sustain their workforces in the future.

## **2.2 Improve the Data and Knowledge**

A major limitation of all policy initiatives will be the lack of data, and especially of quantitative data. In particular, for many states in Asia and the Pacific, there is a lack of appropriate data to:

- be spatially and temporally specific about the location, extent, timing and nature of climate change and its likely impacts ;
- establish accurately and comprehensively the contemporary patterns of internal

and international mobility.

Accordingly, there is a need for improved data collection, modelling and analysis of both climate change and migration for the individual countries in the region. Several countries may need external assistance to facilitate this.

The improvement of data needs to address both the collection of migration data and the downscaling of climate models. In many countries, statistical information on both internal and cross-border migration is not consistently collected. At the same time, support will be needed to downscale climate models so that they can be more precise in terms of the location of the most vulnerable areas.

Finally, it is important to point out that qualitative information is also absent in many cases. There's a need to improve and increase the number of empirical studies on climate-induced migration, so that policy responses can rely on a more robust understanding of migration patterns, drivers, networks, etc.

### **2.3 Build Capacities**

For migration to play an effective role as an adaptation and response mechanism to the effects of climate change in a way that does not result in further deterioration of the living conditions of the communities affected, but instead facilitates an improvement in their well-being, it is necessary for appropriate policies and programmes to be formulated and operationalised. Effective management and governance of migration, both international and internal, will be required if migration is to play an effective role in responding to climate change. Building sound migration management capacity to enable this is, therefore, a fundamental, basic requirement.

In particular, it is important to improve the utilisation of current migration channels to accommodate climate-induced migration. These channels should be reinforced in order to allow for increased migration flows. The sending of remittances by migrants should be facilitated, as it can greatly reduce the vulnerability of families and communities living in regions at risk. Migration channels could also be improved through the provision of better, portable services for migrants, such as social benefit (with regard to health services in particular) or access to financial services.

When relocation is considered, it will be vital to learn from past efforts so that the schemes can be improved to better address the needs of the relocated populations.

Too often, migration is also not considered in national and local climate strategies.

Significant **awareness-raising** efforts will be needed in order to alert regional, national and local leaders about the importance of including migration in climate policies and strategies.

#### **2.4 Improve Governance and Cooperation**

It is expected that most migration will occur within national boundaries. However, both for reasons of equity and efficiency, international cooperation is most advisable. Promoting regional cooperation through dialogue and deliberation to enable knowledge sharing, risk pooling, and security provision for environment migrants – both internal and international – should therefore be on the core agenda. Security concerns will be particularly crucial in case of women climate migrants as they are highly exposed to personal security risks such as sexual violence and trafficking.

In some cases, it is expected that relocation and relocation of communities will be necessary. When inland relocation is not possible, as it could be the case for some island communities, international cooperation and support will be needed. In all cases, the participation of affected communities to the decisional process will be vital to limit negative impact on culture and social networks, and to ensure livelihood opportunities and social services after relocation.

Overall, adequate **protection frameworks** will be needed on regional and global scale. Currently, there are no international legal frameworks that specifically target the people displaced by environmental disruption. Numerous instruments and mechanisms exist however, but are little known, let alone implemented. It is important to gather these instruments together, publicise them, then work towards filling up policy gaps.

Such protection frameworks will be particularly important in the cases of forced displacement – be it because of a sudden or slow-onset disaster – and relocation.

#### **2.5 Mainstream Urban Management and Disaster Risk Management with Adaptation Policies**

The movement of people to cities, which will be reinforced by climate change, will require better urban planning – including incentives to settle in less vulnerable areas -, greater investment in basic infrastructure, and portable social benefits for migrants.

Evidently, cities – and in particular megacities – lack the carrying capacity to accommodate the likely influx of climate-induced migrants. Urban development patterns will need to be re-thought so that cities can grow in a more sustainable way and provide adequate services to their populations.

**Disaster risk management** is a key tool to boost the resilience of vulnerable communities. Climate-proofing of urban infrastructure can be a key part of disaster-risk management in the context of climate change. Regional cooperation should be strengthened in the field of disaster risk management, especially with regard to technology and knowledge transfer. Overall, disaster risk management should be further mainstreamed into adaptation policies, with a view to preventing forced displacement.

Further, adaptation policies of most developing countries have not yet considered the land use and public health risks that (large-scale) migration can cause. Therefore, it is important that adaptation funding also address the receiving urban areas, in order that urban in-migration and impact on urban settlements can be implemented as a component of climate change strategies. Possible areas of intervention would be affordable housing, slum rehabilitation, public health, water supply, sewage and sanitation.

## **2.6 Set up Sustainable Funding Mechanisms**

Significant funding will be required to facilitate a regional, holistic approach to migration. As part of this approach, the use of migration as an adjustment or coping mechanism in the face of climate change will need funds to be raised and channelled through mechanisms which distribute them in an effective and equitable way. Different funding schemes already exist, and are described in the following section. While some agencies and funding schemes have already begun to prepare for the migration impacts of climate change, more research, dialogue, and action will be needed both to evaluate the impacts on existing funding structures and to determine how they can be used and combined to address climate-induced migration.

There is a major role for bilateral funding arrangements between poorer nations at risk and better off countries. Different funding avenues could be used, and do not need to be limited to climate change-related mechanisms.

### 3. Funding Issues

As climate change has captured the world's attention and new inter-governmental and other funds have been dedicated to mitigation and adaptation, migration still appears only rarely on the menu of acceptable adaptation strategies, either in academic papers, political dialogue, or the official literature of climate change funds. This section focuses on costs and sources of funding for climate-induced migration, highlighting governmental and inter-governmental activities that may be of interest to organizations such as ADB. At the same time, it should be noted that successful mitigation and adaptation will sometimes eliminate the need for migration. By introducing migration into the equation, resources and funds may be allocated more efficiently to help more people in more sustainable ways.

Some attention has been given to the question of whether new funding mechanisms are needed to accommodate climate-induced migration. The projected scale of the problem seems enough to warrant a new fund. However, considering the diverse circumstances of migration and the variety of funding mechanisms already available and in use, it is not clear what role a new fund would play, especially on the heels of a proliferation of climate change funds. As several funds are still young and under development, the first priority is to understand and collaborate with existing funds to ensure that climate-induced migration issues are considered adequately. New funding mechanisms should only be pursued if this process reveals gaps in existing mechanisms.

This section first considers the key drivers of costs associated with climate-induced migration, which are highly variable. Costs associated with refugee camps and disaster relief illustrate the bare minimum required to keep people alive, but also represent situations that a well-conceived climate policy seeks to avoid. As climate change introduces the potential for increased migration, one of the main policy objectives is to minimize the number of climate-induced migrants who end up in refugee camps, and to minimize the length of stay when a refugee camp is the only option. In a sense, the monetary outlay is only the tip of the iceberg when it comes to the cost of protracted refugee situations. The much larger cost is lost productivity. Given the large percentage of migrants who move to developing countries, the situation is increasingly being considered as a development opportunity. The threat of climate-induced migration should prompt renewed interest in investments targeting assimilation of long-term migrants into local economies.

### 3.1 Costs Associated with Climate-Induced Migration

Costs associated with migration form a key input into the evaluation of funding mechanisms and policy options. For the sake of simplicity, the focus is primarily on the direct costs of transportation, lodging, and survival. As is the case with any migration scenario, the costs of climate-induced migration are highly variable. To achieve sustainable economic growth and elimination of poverty, the cost of any program must be weighed against the benefits. In many cases, a program with a relatively low upfront cost will not have economic benefits that justify the cost.

While it is impossible to predict accurately the overall economic impact or cost (however defined) of climate-induced migration, some known costs associated with forced migration can be informative in assessing possible future funding needs for climate-induced migration. More important, understanding the main drivers of costs and the tradeoffs involved in migration-related decisions can help in the evaluation of policy options and in the structuring of appropriate funding mechanisms.

Among the factors that influence costs are the following:

- Permanency of relocation;
- Cause or purpose of relocation;
- Resources available to migrants;
- Infrastructure;
- Government and organizational structures;
- Special requirements (medical, children, orphans, widows, etc.);
- Number of people migrating together;
- Local economic and practical conditions.

The following list enumerates some of the costs associated with migration, focusing on a temporary post-disaster migration scenario:

Transportation

Shelter

Beds/cots

Linens, blankets, pillows

Towels, washcloths

Personal comfort kits – soap, shampoo, toothpaste, toothbrush, etc.

Food and drinking water

Medical

Communications (phone, Internet)

TV/Radio (community)

Washers/dryers (community)

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Power

Water (for purposes other than drinking)

Sanitation

Administration/management

Security

Special circumstances – disabilities, prescription drugs, mental health, pregnancy, other medical needs, etc.

Pets

Repairs to make existing shelter habitable

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For the special case of refugee scenarios, the budget of the United Nations High Commissioner for Refugees (UNHCR) over the past decade indicates widely varying costs generally ranging from under USD 30 to over USD 100 per refugee per year. These funds are used mainly to manage refugee camps and provide basic temporary shelter and survival needs for refugees. As the assistance provided to refugees is minimal and some refugees have access to other funding and resources (for example, some refugees engage in limited commerce in their host countries) the UNHCR budget gives at best a rough indication of the lowest costs that might be expected in climate-induced migration scenarios with similar characteristics.

It is important to note that refugee camps, though necessary as a temporary solution in some circumstances, represent a situation that a well-conceived climate policy seeks to avoid. Protracted refugee situations in particular often result in an economic deadweight loss when refugees are constrained by poor information, language barriers, restrictions on movement, limited economic activity, isolation from commercial centers, and lack of assimilation in local economies. Betts (2009) suggests the use of “targeted development assistance” in protracted refugee scenarios to enhance economic benefits to host countries while providing more durable solutions for migrants. More generally, over the long term, if the goal is to facilitate orderly and sustainable adaptation and (where necessary) migration, programs established primarily to relocate people may be less effective than holistic approaches that emphasize climate-resilient development.

### **3.2 Funds for Climate-Induced Migration**

Public and private funding mechanisms include the following:

1. Personal savings, remittances, and other private funds
2. Public grants and aid
3. Private donations
4. Loans subsidized or guaranteed by public entities

5. Equity investments, bank loans and other private credit
6. Public insurance pools
7. Private insurance and risk transfer

In general, the choice of funding mechanism mirrors the economics and the mechanics of the migration scenario.

No international funding source, development agency, or relief organization is dedicated exclusively to climate change and migration, but at least three categories of funds and organizations may be directly linked to climate-induced migration. As there is not always a clear distinction between funds and other organizations, this section includes discussion of funds as well as agencies and organizations that may provide goods and services as well as funding for climate-induced migration. While the emphasis here is on public and inter-governmental funding sources, it is important to keep in mind that the private sector provides the largest share of funding related to climate change and migration (*source...*). Also, a large number of NGOs and privately funded charities are engaged in activities related to climate-induced migration.

### **3.2.1 Organizations Dedicated to Migration**

While funding mechanisms dedicated exclusively to migration are rare, resources for migration under certain circumstances are provided by organizations dedicated to migration.

The United Nations High Commissioner for Refugees (UNHCR) is the primary inter-governmental agency dedicated to managing refugee situations. The UNHCR was established under the 1951 Convention relating to the Status of Refugees, including some assistance for internally displaced persons (IDPs). In 2009, UNHCR flagged climate-induced migration as a serious concern but raised objections to changing the legal definition of “refugee” to include climate or environmental criteria. UNHCR anticipates its roles in facilitating climate-induced migration to include general environmental sustainability, disaster reduction, urban policy, and to the extent needed, support for people displaced by war or violence precipitated by climate change and advocacy for people who become stateless due to climate change.

The International Organization for Migration (IOM) is the main inter-governmental organization dedicated to migration in general. IOM works to help ensure the orderly and humane management of migration, to promote international cooperation on migration issues, to assist in the search for practical solutions to migration problems

and to provide humanitarian assistance to migrants in need, including refugees and internally displaced people. IOM's first policy and research activities regarding the link between migration and climate change date back to 1992 and IOM has since published widely on this subject and participated actively in policy dialogue and awareness raising, nationally and internationally. The impact of climate change has also been felt in IOM's operational activities, with more than 500 funded projects since 2000 in the context of IOM's response to environmental migration. In line with IOM's comprehensive approach to human mobility, activities range from humanitarian response to displacement caused by natural disasters to the promotion of adaptation to gradual environmental degradation through migration and development activities. In general terms, IOM's response aims to increase communities' resilience to underlying risk factors and expected changes in their natural environment, thus preventing forced migration; to promote migration as an adaptation strategy; and to build the capacity of governments in addressing environmental migration.

IOM 1035 Funding Facility provides special support to IOM Developing Member States and Member States with Economy in Transition for the development and implementation of joint government-IOM projects to address particular areas of migration management. Since its inception in 2001, the Facility has supported over 200 projects in various areas of IOM activity and has benefited over 85 Member States. The Facility has and is funding pilot Migration and climate change/environment projects (Egypt, Mauritius, Kenya).

In addition to inter-governmental organizations, the governments of some Asian countries have implemented large-scale relocation initiatives supported by government funding. Examples include Sri Lanka, People's Republic of China, and Viet Nam.

### **3.2.2 Disaster Relief Resources**

Disaster relief is provided by numerous charities and public entities. United Nations Central Emergency Response Fund (CERF) and Red Cross and Red Crescent Societies are among the first to respond, coordinating the efforts of various government bodies and charities to deliver medical help, food, temporary shelter, and other necessities to victims. Over the longer term, funding for recovery may be supplied through government bodies, insurance, and financial institutions including

development banks. NGOs, such as Care International and Oxfam, and other private charities also play a significant role in providing disaster relief.

Disaster relief organizations typically facilitate short-distance migration to camps or other temporary shelter with the intent of returning migrants to their homes as soon as the affected area is habitable again. When disasters necessitate long-term or permanent migration, funding may come from public or private sources depending on individual circumstances.

In recent years, international organizations including ADB, World Bank, and the International Federation of Red Cross and Red Crescent Societies (IFRC) have increasingly promoted the benefits of arranging ex-ante disaster funding through general preparedness combined with risk transfer mechanisms available in insurance and capital markets. Insurance penetration is particularly low in Asia in spite of an abundance of reinsurance capacity for Asian catastrophe risk.

The development and maturing of the insurance market in Asia would have numerous positive side-effects including improved prospects for post-disaster migration when necessary. Robust insurance markets would also reduce dependence on international aid, improve resources for modelling and managing risk (including climate-related risks), and help establish order and transparency in distribution of relief.

The Asian insurance market would also benefit from ongoing development of commodity and capital markets in Asia. Capital markets are increasingly used as a source of secure risk transfer capacity for peak natural catastrophe risks in advanced economies in North America, Europe, Japan.

“Displacement insurance”, or insurance to cover the costs of migration may be available, but generally would need to be connected to objective and measurable parameters that are closely linked to the reason for migrating. The following examples illustrate risk transfer and funding mechanisms that may be useful in the context of climate-induced migration, most of which include some degree of interplay between insurance and commodity and capital markets:

- **Catastrophe bonds** (“Cat bonds”) facilitate the transfer of large amounts of natural catastrophe risk (typically in the US\$ 1-200 million range) to capital market investors, who risk losing all or part of their investment in the event of

a natural catastrophe exceeding certain thresholds. Cat bonds are currently used mostly for “peak risks” such as Miami hurricane and Tokyo earthquake – catastrophe risks of such scale and concentration to strain the capacity of even the largest reinsurers. One reason for the relatively low cost of catastrophe insurance for Asian megacities outside Japan is that they still present a diversifying risk for reinsurers due to their low insurance penetration. However, the economics and demographics of these cities suggest that capital market capacity will become an important resource to sustain any large increase in catastrophe insurance utilization.

- **Weather derivatives** are used to manage a variety of risks related to temperature, rainfall, and other objective measures of the weather.
- Capital markets may also present attractive means of transferring longer-term risks associated with climate change, such as risks associated with **rising sea levels**. With some characteristics similar to a catastrophe bond or weather derivative, a financial product could be constructed with payments linked to a sea level index. However, as many of these risks will take a number of years before their impact is felt, the new financial product would need a carefully balanced structure to keep premiums affordable, to provide attractive long-term returns to investors, and to provide a sufficiently secure source of payments in the event of rising sea levels.

### 3.2.3 Climate Change Funds

Concern over climate change has spawned an unprecedented proliferation of new international funding mechanisms beginning with the United Nations Framework Convention on Climate Change (UNFCCC) in 1994. Among the climate change funds, some are dedicated to reducing the causes, while others also address the effects of climate change.

The Global Environmental Facility (GEF) is the largest climate change fund and includes several smaller funds for different purposes, of which the Special Climate Change Fund (SCCF) and the Least Developed Countries Fund (LDCF) are the most likely to be of interest in the context of climate-induced migration. Two others, the Adaptation Fund and the Green Climate Fund also have their roots in UNFCCC.

Other inter-governmental climate change funds and initiatives of potential interest of administering or accommodating climate-induced migration in Asia Pacific include the ADB Climate Change Fund and climate related activities of the World Bank.

Several country and regional programs have been initiated to formalize commitments to the international community, to support and supplement the efforts of international organizations, and in some cases to engage in bilateral climate-related activities and assistance. Among the country and regional funds that could relate to climate-induced migration are the Global Climate Change Alliance (EU), the International Climate Fund (UK), the International Climate Initiative (Germany) the MDG Achievement Fund (Spain), and the Indonesia Climate Change Trust Fund.

In most cases, however, the purposes and operations of new climate change funds are still under development and funding for climate-induced migration is at best a theoretical possibility. A review of funded projects reveals little or no evidence of funds being used for migration of any kind. Where funding for relocation is included, e.g. in adaptation funds, it is not clear how often its purpose is to accommodate the project rather than to facilitate.

Climate change funds will become a meaningful resource for migration only to the extent that (1) their structures are appropriate for accommodating migration, and (2) funds are willing to consider migration as a valid means of adaptation. However, in spite of the growing number of funds, existing funds are already strained and more resources may be required to add to the list effective management of climate-induced migration.

### **3.3 Prospects for Climate-Induced Migration Funding**

Considering current funding constraints, the lack of any fund dedicated exclusively to climate-induced migration, and the potential for climate change to cause significant increases in both internal and cross-border migration, the question to the most effective mechanism for funding climate-induced migration remains. Isolated funding for migration may not produce the most optimal results either politically or economically, while an integrated strategy bears the challenge to dedicate adequate focus to the beneficial option of migration.

INTERNATIONAL CONFERENCE

Rethinking Migration: Climate, Resource Conflicts and Migration in Europe, 13 -14 Oct. 2011 [www.network-migration.org](http://www.network-migration.org) and [www.geographie.uni-bremen.de](http://www.geographie.uni-bremen.de)

<b>Appendix: Existing funds that can address climate-induced migration</b>							
<b>Fund</b>	<b>Type</b>	<b>Established</b>	<b>By</b>	<b>Purpose</b>	<b>Budget</b>	<b>Sources</b>	<b>Migration Relevance</b>
United Nations Central Emergency Response Fund (CERF)	Disaster relief	2006	UN	Respond to emergencies resulting from natural disasters	USD 360+ Mn	UN donors	Evacuation and temporary shelter
World Bank Global Facility for Disaster Reduction and Recovery (GFDRR)	Disaster relief	2007	World Bank	Support disaster risk reduction and recovery projects	USD 68 Mn	World Bank	Disaster preparedness, relief, development
Asia Pacific Disaster Response Fund (ADB)	Disaster relief	2009	ADB	Incremental grants to restore life-preserving services after disaster	Up to USD 3 Mn per event	ADB	Evacuation and temporary shelter
International Federation of Red Cross and Red Crescent Societies (IFRC)	Disaster relief	1859	Independent	Direct and immediate disaster relief, coordination of relief operations	Variable, USD 2-500 Mn	Private donors	Temporary shelter for disaster migrants until they can return home
United Nations High Commissioner for Refugees (UNHCR)	Migration	1951	UN	Provide for refugees under 1951 Convention	USD 2 Bn	USD 40 Mn from UN; remainder from government and private donors	Cover political refugees and statelessness due to climate change
International Organization for Migration (IOM)	Migration	1951	US, Belgium, other countries	Facilitate orderly migration	USD 619 Mn	Donors	Funding for migration may include some climate-induced migration
Global Environmental Facility (GEF)	Climate Change	1991	UNFCCC	Wide ranging environmental and climate objectives	USD 1+ Bn (climate only)	Donors	Possibility of migration as adaptation
Special Climate Change Fund (SCCF)	Climate Change	2001	UNFCCC/GEF	Climate change objectives including adaptation and mitigation	USD 133 Mn	GEF/donors	Possibility of migration as adaptation
Least Developed	Climate Change	2001	UNFCCC/GEF	Climate change objectives including adaptation and	USD 224 Mn	GEF/donors	Possibility of migration as adaptation

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Appendix: Existing funds that can address climate-induced migration							
Fund	Type	Established	By	Purpose	Budget	Sources	Migration Relevance
Countries Fund (LDCF)				mitigation			
Adaptation Fund	Climate Change	2009	UNFCCC	Adaptation	USD 216 Mn	Donor countries	Possibility of migration as adaptation
Green Climate Fund	Climate Change	2010-11	UNFCCC, World Bank	Climate friendly development	Initial organization and funding in progress	Donor countries	Possibility of migration as adaptation
ADB Climate Change Fund	Climate Change	2009	ADB	Mitigation, clean energy	USD 40 Mn	ADB	Possibility of migration as adaptation
Global Climate Change Alliance	Climate Change	2007-8	EU	Climate change objectives including adaptation, access to other funds	USD 226 Mn	EU participants	Possibility of migration as adaptation
International Climate Fund	Climate Change	2008	UK	Climate resilient development, adaptation	USD 837 Mn	UK	Migration as adaptation, climate-resilient development
International Climate Initiative	Climate Change	2008	Germany	Climate change objectives including adaptation	USD 493 Mn	Germany	Possibility of migration as adaptation
MDG Achievement Fund	Climate Change	2007	Spain	Climate change objectives including adaptation	USD 89.5 Mn	Spain	Possibility of migration as adaptation
Indonesia Climate Change Trust Fund	Climate Change	2010	Indonesia/ bilateral	Facilitate access to global funding	USD 8.5 Mn	UK, Australia	Possibility of migration as adaptation
Strategic Priority on Adaptation	Climate Change	2004	GEF	Pilot program	USD 50 Mn	GEF	Possibility of migration as adaptation
Pilot program for climate resilience (PPCR)/Strategic	Climate Change	2008	World Bank	Climate resilient development	USD 305 Mn	World Bank	Development as enticement to climate-resilient areas

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<b>Appendix: Existing funds that can address climate-induced migration</b>							
<b>Fund</b>	<b>Type</b>	<b>Established</b>	<b>By</b>	<b>Purpose</b>	<b>Budget</b>	<b>Sources</b>	<b>Migration Relevance</b>
Climate Fund							

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