



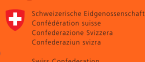
ACP OBSERVATORY ON MIGRATION
OBSERVATOIRE ACP SUR LES MIGRATIONS
OBSERVATÓRIO ACP DAS MIGRAÇÕES

Slowly, but surely: *The environment, climate change and migration in ACP countries*



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Background Note

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ACP Observatory on Migration

The ACP Observatory on Migration is an initiative of the Secretariat of the African, Caribbean and Pacific (ACP) Group of States, funded by the European Union, implemented by the International Organization for Migration (IOM) in a Consortium with 15 partners and with the financial support of Switzerland, IOM, the IOM Development Fund and UNFPA. Established in 2010, the ACP Observatory is an institution designed to produce data on South–South ACP migration for migrants, civil society and policymakers and enhance research capacities in ACP countries for the improvement of the situation of migrants and the strengthening of the migration–development nexus.

The Observatory was established to facilitate the creation of a network of research institutions and experts on migration research. Activities are starting in 12 pilot countries and will be progressively extended to other interested ACP countries. The 12 pilot countries are: Angola, Cameroon, the Democratic Republic of the Congo, Haiti, Kenya, Lesotho, Nigeria, Papua New Guinea, Senegal, Timor-Leste, Trinidad and Tobago, and the United Republic of Tanzania.

The Observatory has launched research and capacity-building activities on South–South migration and development issues. Through these activities, the ACP Observatory aims to address many issues that are becoming increasingly important for the ACP Group as part of the migration–development nexus. Documents and other research outputs and capacity-building manuals can be accessed and downloaded free of charge through the Observatory’s website (www.acpmigration-obs.org). Other upcoming publications and information on the Observatory’s activities will be posted online.

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**Slowly, but surely:
*The environment,
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migration in ACP countries***

In the history of mankind, people have always migrated to cope with environmental changes. Now more than ever, the environment, the detrimental effects of climate change, and their links to migration are brought to public attention. This is of particular relevance for the African, Caribbean and Pacific (ACP) Group of States. The link between migration and the environment is twofold: migration can be induced by environmental change while at the same time migration flows can impact on the environment. Environmental change, in most cases, does not directly displace people. Instead, it interacts with economic, socio-cultural and political push- and pull-factors and increases an already high vulnerability stemming from economic weakness and a high dependence on the environment (Black et al., 2011; Kniveton et al., 2009; Laczko and Aghazarm, 2009).

Six out of the twenty countries with the highest level of displacement following natural disasters in 2008 were ACP countries, accounting for almost 700,000 people in Africa alone (IDMC and OCHA, 2009). Yet the bulk of migration influenced by environmental change is expected to be triggered by slow-onset changes, such as increased droughts, heat waves and floods, among others. The environmental degradation of livelihoods is expected to cause higher volumes of internal rural-rural or rural-urban movements (Gemenne, 2011; Laczko and Aghazarm, 2009). Comprehensive data on this relationship is lacking, especially for ACP countries, making it difficult to devise national and regional adaptation plans. This is key if migration is not only to be considered as the last option, but as a possible adaptation strategy.

This background note aims to shed light on the concepts, observation and data challenges in relation to migration and environment in ACP countries, outline available prominent facts and figures in ACP countries, highlight the effects of the migration - environment nexus on human development and provide recommendations for policymakers in ACP countries.

Definition of migration influenced by environmental change

“Where environmental change can be identified as affecting the drivers of migration, and thus is a factor in the decision to migrate.”

This concept acknowledges that migration is already occurring in most parts of the world as a result of five broad categories of ‘drivers’: economic, social, environmental, demographic and political. (Government Office for Science, 2011 in ACP Observatory on Migration, 2011)

1. Concepts, observations and data challenges

What is migration in the context of environmental degradation and climate change?

The definitions regarding migration in the context of the environment and climate change are highly contested. The terms “climate refugee” or “environment refugee”, which are widely used in the media, are rejected by many scholars, international organizations and governments, because on the one hand they are legally inaccurate and on the other hand might have implications for the existing levels of protection for political refugees (Renaud et al., 2011; Zetter, 2009). The recent Foresight Report (Government Office for Science, 2011) has proposed a definition (see box), which is intentionally broad to include all phenomena of migration influenced by environmental change, be it voluntary or forced¹, internal or international, permanent or temporary. This definition is also used by the ACP Observatory.

Climate change:
“a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods”
(UNFCCC art.1, para.2)

Regarding the expected numbers of ‘environmental migrants’ worldwide, it must be acknowledged that due to a lacking broadly agreed methodological approach, existing numbers are all estimates and are based on two sources (Black, 2011; Gemenne, 2011). Several possibilities for the mitigation of environmental degradation and climate change exist, which, together with adaptation measures to build the resilience of States, households and individuals can alter the necessity or incentives to move (Zetter, 2009). At the same time, mitigation and adaptation measures may themselves displace a significant number of people via resettlement (De Sherbinin et al., 2011).

What is climate change? How is it related to the environment?

The changes in climate, which the [United Nations Framework Convention on Climate Change \(UNFCCC\)](#) mentions in its definitions of climate change (see box), are assumed to exacerbate environmental degradation. The resulting changes and impacts can be differentiated into “**climate processes**” or slow-onset changes such as desertification, sea-level rise, changes in rainfall

¹ This differentiation should not be seen as a clear-cut division but should instead be considered as a continuum, see Renaud et al., 2011; Brown, 2008.

patterns (overall increases or decreases as well as changing seasonality) or soil degradation through a decrease in water resources and an increase in wind-and water-induced soil erosion (Bilsborrow, 2009). The second type is “**climate events**” or sudden-onset hazards such as increased frequency of droughts and floods (Brown, 2008; McLeman, 2011).

As many of these impacts concern regions in tropical areas, coastal zones or semi-arid drought-prone areas, many ACP countries are already experiencing severe and diverse impacts of climate change on their environments which are expected to increase in the future. Such changes can only be observed through a change in the average climatic conditions, which are measured observing a range of proxy variables over a certain period of time (Zetter, 2009). Therefore, predictions for future changes are difficult to extrapolate and are mainly based on the establishment of different scenarios, depending on future demographic and economic development and efforts to decrease greenhouse-gas emissions, among others (Brown, 2008).

In some African regions a higher amount of rainfall, modified rainy seasons, shorter growing seasons and more intense floods have occurred, whereas other regions suffer from reduced rainfall resulting in drought and desertification
(UNCTAD, 2010)

Data collection challenges

Much of the slow onset migration influenced by environmental change is expected to occur within state boundaries. Besides documenting cross-border movements, most ACP countries have also censuses recording internal migration patterns. Yet, the great majority of these migration statistics do reveal different migration drivers and the influence of environmental change on them.

In addition to this, migration influenced by environmental change is a **cross-cutting issue** that affects several areas of international governance. Therefore, there is no single authority which is concerned with migration and climate change (McAdam, 2011). This complicates coordination of data collection across countries and hinders the comparative value of data.

2. Facts and figures: present situation and past trends in ACP countries

How are the environment, climate change and migration interconnected in the ACP regions?

“It is estimated that two-thirds of African land is already degraded to some degree and land degradation affects at least 485 million people or sixty-five per cent of the entire African population”
(UNECA, 2008:6)

This section gives an overview on key figures and trends, on the effects of the environment and climate change on migration and on the impact of migration movements on the environment, while looking at possible future developments. Due to the complex relationship between migration and environmental change, examples from the ACP regions, also from island States and land-locked countries will be used to demonstrate some of the causal relationships between the two. Ironically, the ACP Group of States, out of which half (40 countries) are Least Developed Countries (LDCs), are the least responsible for climate change. And yet now range **amongst the most vulnerable and affected countries** (UN-OHRLLS, 2009). This is due to already high environmental and population pressures combined with low economic power. Without appropriate mitigation and adaptation strategies, supported by the international community, including well-planned mobility, these countries will face more migration-induced environmental degradation and more people will resort to badly prepared migration. Migration has always been an adaptation strategy to climate change in most ACP countries and can become part of the solution in the face of climate change.

In ACP countries, the majority of the rural population depend on agriculture, pastoral farming or fishing. Deforestation and overexploitation of land result in **soil degradation and erosion**, constituting one of the most urgent problems for these people. Contrary to the widespread assumption that rapid on-set environmental disasters lead to the greatest amount of migration, in ACP countries migration influenced by environmental change is generally caused by slow-onset changes (Naik, 2009).

Competition over natural resources (such as water or land) may result in pastoral mobility influenced by environmental change, and competition for resources as well as changes in land use can lead to disputes (Ramphal Centre, 2011). Within the ACP countries not all population groups are likely to be equally affected by climate change. Lacking the means to migrate, the **poorest will suffer if they are trapped** in areas that are most vulnerable to climate change induced fast-onset events, such as low-lying river deltas or coastal zones. They also possess less coping strategies, such as planned migration in the case of slow-onset changes. Less poor people are also affected since they **migrate in quite significant numbers towards these more vulnerable delta regions**, especially large coastal cities, which are often poorly adapted to climate change (Black et al., 2011).

Seasonal and **circular migration** has always been used as an **adaptation strategy** to cope with the natural annual change of seasons. This is particularly the case in rural areas at early stages of environmental degradation in reaction to slow-onset changes (Kniveton et al., 2009).

Women now make up almost half of world-wide migrants (UN DESA, 2009). Yet, in the case of migration influenced by environmental change, **the evidence base as far as gender is concerned is very weak**: different studies in different regions report either a majority of male or female migrants (Naik, 2009). In planned migration, however, usually a male family member is chosen to migrate in order to increase the family's income, increasing women's vulnerability, as they often stay behind in the degraded environment. In the 2004 tsunami in Asia, more women than men died in Indonesia, India and Sri Lanka because they were less informed and stayed behind to look for their family (Oxfam International, 2005).

Myths:

Most migrants whose decision to move was influenced by environmental change:






- flee environmental disasters.
- cross borders and continents, moving from developing to developed countries.

Facts:


Most people move:

- linked to slow-onset environmental changes.
 - influenced by environmental change internally or regionally within the South.
 - towards environmentally vulnerable areas.
- ... and some may not move at all due to a lack of resources**


West Africa


-  Environmental changes can alter already existing migration patterns: In **Mali**, internal labour migration partly replaced international movements during the drought years between 1982 and 1989, and in **Burkina Faso** drought led to increasing food prices which further impoverished inhabitants and disabled them to migrate (Kniveton, 2009; Naik, 2009).
-  Farmers or cattle herders, rely heavily on the ecosystem for their livelihood, causing extreme vulnerability to environmental degradation, including climate change. Thus, **seasonal and circular intra-regional migration** has long been a coping strategy to recurrent fast and slow-onset environmental changes (Naik, 2009).
-  **Senegal** is highly vulnerable to gradual degradation processes, such as droughts, desertification, soil degradation, erosion and deforestation (Jäger et al., 2009). Rainfall has declined persistently since the late 1960s. Rural households use regional rural-urban seasonal migration as income diversifying strategy with one family member migrating to the city at the end of the growing season (Kniveton et al., 2009).
-  **Niger, a land-locked country in the Sahel, with three quarters of the country being covered by deserts**, faces interrelated accumulating environmental problems exacerbated by climate change. Extreme weather events, such as floods, droughts, extreme temperatures and stormy winds, are becoming more frequent. These changes cause water scarcity, soil degradation and water and wind erosion of lands. Negative impacts on agriculture and cattle breeding, the country's main income sources are immense (Republic of Niger et al., 2006). Pastoralists' natural coping strategy of moving with their herds following the rain becomes less efficient. Conflicts between these pastoralists and sedentary farmers about soil and water resources are intensifying. Pastoralists then revert to overgrazing or seeking new income-generating activities, such as selling firewood. This leads to deforestation, which further deteriorates the environment (Warner et al., 2009a).
-  In the densely populated region of Agulu-Nanka in south-eastern **Nigeria**, gully erosion affects about 2.5 million people. The menace has already started in the 19th century and has been aggravated by the clearing of the original vegetation, the development of infrastructure and the increasing changes in climate patterns. These changes lead to flooding and sudden erosion with devastating effects on the local population. Human and livestock life, houses and land have been lost and people have been displaced permanently (Leighton et al., 2011).


Central Africa


 In Central Africa, deforestation, resulting partly from forced migration movements, entails an irreversible loss of biodiversity (Bilborrow, 2009).

East Africa

 In the Horn of Africa, decline in rainfall over the past two decades combined with conflict has led to food scarcity, since pastoralists' traditional routes have been cut by ongoing fighting. This, in turn, has led to cross-border armed conflicts over scarce key resources such as pasture and water arose in Sudan, Kenya, Ethiopia and Uganda (IOM, 2009a).

 In **Kenya**, in the Lake Turkana region, recurrent droughts have destroyed pastoralists' livelihoods in the already semi-arid region. In an initiative by IOM, alternative sources of livelihood were found in cooperation with the Kenyan Ministry of Fisheries Development: Pastoralists were provided the means to start deep lake fishing, to grow drought-resistant crops and to construct shallow wells and water pans for better water harvesting (IOM, 2010a)


 Recently, it was shown that while in Kenya improved soil quality reduces temporary labour migration flows, it slightly increased migration in **Uganda**. This contradicts the widespread opinion that soil degradation automatically triggers migration away from rural areas, confirming the complexity of the climate change-migration nexus (Cray, 2011).

 The countries of the **Greater Horn of Africa** still struggle with the aftermath of the 1980s and 1990s drought-related large population movements. In the case of **Ethiopia** these movements were directed by the government to resettle populations away from rural areas in the Highlands, creating one of the largest mass movements of people anywhere in the world. The region faces yet another drought, **this time the worst one** in 60 years.




Fleeing East Africa's worst drought in 60 years, this Somali family is heading for Kenya, which hosts the world's biggest refugee camp Dadaab.
© IOM, 2011 (Photo: Ikovac)


In the 1990s food prices tripled and famine, exacerbated by the ongoing conflict in **Somalia**, caused intra-regional mass migration flows mainly from Somalia to Kenya. As a result the world's largest refugee camp (in Dadaab) was established, hosting more than 447,000 refugees (IOM 2011c). In 2009 drought was followed by displacement of people and livestock in northern **Tanzania**. Movements are predominantly internal rural-urban, perpetuating existing problems in urban slums. In 1994, during Rwanda's civil war, over 400,000 people fled to Tanzania causing the border village of Kasulo to boom from 1,000 residents to become Tanzania's second most densely populated area. For survival, trees were chopped down causing deforestation and soil erosion (Permanent Mission of Greece Geneva and IOM, 2009). Severe droughts have affected most parts of the country, making an increase in cross border migration, particularly to Mozambique and Kenya, more likely.


 Apart from being exposed to seasonal floods, coastal erosion and heavy rainfalls, **Madagascar** is the most vulnerable African country to tropical cyclones whose frequency has increased in the last years. The island was hit by six cyclones in 2006 and 2007, and by three in 2008. They did not only trigger storm losses but also erosion, leading to the destruction of infrastructure and livelihoods. Migration has become a survival strategy. Local communities, although highly attached to their land, have asked for assistance with voluntary relocation to nearby safer areas in order to remain as close as possible to their rice fields (IOM, 2009a; c).


Southern Africa

 **Mozambique**, with about 2,700 kilometres of coastline, many international rivers ending there and parts of the land area lying under sea level, **is extremely vulnerable** to the adverse effects of environmental degradation and climate change (Jäger et al., 2009; MICOA, 2007). After independence in 1975 and during the subsequent civil war, forced population resettlement was part of both, the Frelimo and the Renamo government policy. In the last ten years, the country has not only been haunted by droughts, but was also hit by flooding and tropical cyclones several times (2000, 2001, 2007, 2008), devastating many low-lying deltas (IOM, 2009a). Subsistence farmers and fishers, living along the Zambezi River were the most affected, displacing hundreds of thousands of people. The majority of inhabitants that were resettled to higher areas still depend on international aid since their crops had been destroyed for two consecutive years (Warner et al., 2009b). This resettlement created additional strains on the environment and further


predictions indicate a continued trend in increasingly unpredictable levels of precipitation, extreme events and weather patterns (Warner et al., 2009a).


 In **Angola**, between 1960 and 2006 the average annual rainfall seems to have decreased. Yet, rainfall patterns also appear to become more intense and unpredictable. Seasonal flooding is a periodic phenomenon. In 2009 the country suffered from one of the severest floods in many years. The southern region was hit by heavy rainfall and flooded, making more than 80,000 people homeless and leading to internal migration (Angola Today, 2011; British Red Cross, 2009; IOM, 2009a).

 Landlocked **Lesotho** is a particularly vulnerable country, characterized by a highly variable climate. Furthermore, 85 per cent of the population lives in rural settings, earning their living through subsistence agriculture. Droughts occurred periodically, yet between 1979 and 1996 incidences of droughts were at their gravest in almost 200 years with the longest drought lasting from 1991 to 1995. Related environmental stresses include soil erosion, land degradation and desertification, which are aggravated by climate change (Ministry of Natural Resources Lesotho et al., 2007).

 Diminishing crop production and crop failure can then lead to food insecurity. In the Southern Lowlands the coping strategy of pastoralists has been to migrate to nearer towns for work during years of low agricultural productivity. As a consequence, large-scale rural-urban migration of young people is occurring and the effects of climate change are likely to exacerbate this trend (Ministry of Natural Resources Lesotho et al., 2007).


Caribbean


 In the Caribbean half of the population lives within 1.5 kilometres of the coast where important infrastructure and economic activities are located (Gallina, 2010). With most Caribbean cities located on the coast, there is an increased likelihood of being vulnerable to the common cyclones, hurricanes and floods occurring even more often and in a more intense manner due to climate change. Weather events, including droughts and heat waves, are expected to arise more often (IOM, 2009a).


 Furthermore, deforestation exacerbates people's vulnerability during hurricanes and floods since it makes landslides more probable (Jäger et al., 2009). In June 2011 the first major rainfall of the Atlantic hurricane season caused **flooding and landslides in Haiti**. Displaced persons in emergency


camps often relocate temporarily for a longer or shorter period of time during the hurricane season. Agricultural productivity being the main source of livelihood, landslides are a major threat to wellbeing of communities (Martin, 2009).

The Pacific

 The low-lying Small Island States of the Pacific are already affected by climate change induced sea-level rise and by increasing tropical cyclones, floods, storms and landslides. Displacements occur in **Kiribati**, **Papua New Guinea** and **Vanuatu** (Gallina, 2010). The islands will suffer from accelerated erosion of their coastlines, where the majority of the population lives. Further sea-level rise threatens freshwater supplies through saltwater intrusion, and increases vulnerability to waterborne diseases and deteriorated drinking water (Leighton et al., 2011).

 **Timor-Leste** experiences a number of extreme weather events during the year. Climate change is predicted to cause heavier and more fluctuant rainfall and to make the country hotter and drier, affecting the main income source of subsistence agriculture in rural areas. Deforestation leading to erosion and a fast population growth are other major problems whose accumulating effects increase the risk of environmentally-induced displacement (IOM, 2009a; UNDP, 2008).

 **Papua New Guinea** is the region's largest and most populated country with a constantly rising population, which is still mainly rural. This makes the country particularly sensitive to environmental change: it is likely that urbanization will be chosen as an adaptation strategy to climate change, exacerbating people's vulnerability, since most cities are located at the coast and already face flooding. Internal forced displacement has already begun: in December 2008, flooding caused by abnormally high tides on the northern coast led to the displacement of 75,000 people. There is the risk of flash flooding across the highlands and coastal flooding along the south coast (ADP, 2009). Due to salt water intrusion, stocks of emergency food supplies have been running low in the low-lying Carteret Island, leading to resettlement to Bougainville, a higher situated island (UNHCR, 2010).

 In the Small Island Developing State (SIDS) of the **Solomon Islands**, climate change is the most important developmental and environmental issue. The majority of the population is situated in low-lying coastal areas threatened by sea level rise. More than 80 per cent of Solomon Islanders live in rural areas

mostly depending on subsistence agriculture and fisheries. Temperature changes, salt-water intrusion and flooding as well as the increased intensity and frequency of tropical cyclones negatively impact on agriculture. Coastal erosion further reduces the area of arable land. A lot of coastal communities have already moved several times to higher areas within the last 15 years because of flooding and storms. In recent years, an increased number of people have also moved to Honiara (Ministry of Environment, Conservation and Metereology Honiara / GEF / UNDP, 2008).

3. The impact of migration, the environment and climate change on human development

Apart from the direct impacts of environmental change on human development, migration influenced by environmental change has its own effects on human development in the regions of origin as well as in the regions of destination (Boko et al. 2007; Black et al. 2008; Mimura et al., 2007). These two impacts shall be examined more in detail in this section.

Impact of migration influenced by environmental change in the regions of origin

As discussed by Bilsborrow (2009), the out-migration of young men in Kenya has had a negative impact on the labour-intensive agricultural sector. The loss of human capital, due to environmental degradation, has reduced the performance and agricultural output, leaving those left behind with reduced levels of economic productivity and diminished incomes. Apart from such possible negative impacts on human development of those staying behind, the **diversification of household incomes** through out-migration can positively influence the adaptive capacity of households, their resilience and development opportunities, for example through **transfer of knowledge and skills, remittances** or **technology, as in the case of Guinea** (Barnett and Webber, 2009; Tacoli, 2011). In such cases, migration can serve as a **development strategy**. At the same time, remittances can also lead to increased polarization between those households who do and those who do not receive remittances and can therefore have ambivalent impacts on development (Tacoli, 2011).

Impact of migration influenced by environmental change in the regions of destination

The impact of migration influenced by environmental change on regions of destination depends on a variety of factors. One of the common fears

about this type of migration is a mass influx of people into a region. These movements are expected to cause increased pressure on the environment and on scarce resources, such as freshwater or arable land, and population movements may thus lead to environmental degradation. This is a real threat, for example if camps for people displaced by sudden-onset disasters are not well managed, (e.g. poor waste management, uncontrolled felling of trees or mining) or if intensified land use leads to land degradation and crop failure (Permanent Mission of Greece Geneva and IOM, 2009; Boko et al. 2007). Such negative impacts could also occur in cases of an influx of migrants into urban areas with a lack of infrastructure, which can lead to insanitary livelihoods, health risks and pollution as well as an increased vulnerability to impacts of climate change for people living in slums (Permanent Mission of Greece Geneva and IOM, 2009). However, such negative impacts are not inevitable. Research shows that **good management of camp sites** for the displaced or resettled persons and the **involvement of the migrant community** as well as **the local community** in the activities can bring positive development opportunities for the region of destination. To improve the rights of persons displaced by natural disasters, the Inter-Agency Standing Committee has developed the [IASC Operational Guidelines on Human Rights and Natural Disasters](#), a tool for governments and international non-governmental humanitarian organizations to be followed in their disaster preparedness, response and recovery activities (IASC, 2009).

4. Good practices, conclusions and recommendations

Current migration policies often focus exclusively on reducing migration instead of being interdisciplinary and cross-cutting, trying to increase its benefits and reduce its costs (Barnett and Webber, 2009; GFMD, 2010). So far, few countries have elaborated specific policy measures to respond to the movements of people influenced by environmental change and none have a pro-active resettling policy for those affected by environmental disasters (Laczko and Aggazarm, 2009).

4.1 Good practices

Mobility as an adaptation strategy

In **Kenya**, the IOM projects *Mitigating Resource Based Conflict among Pastoralist Local Communities Including Refugee Host Community in Northern Kenya through Strengthening Youth Capacities to Adapt to Climate Change*

and *Emergency Livestock Support to Refugee Hosting Communities Affected by Protracted and Extreme Climatic Conditions in North West Kenya* are currently implemented. They aim at reducing the impact of drought-induced cross-border conflict amongst pastoralists by promoting pastoralists' internal and cross-border mobility needs as a climate change adaptation strategy and by supporting governments to develop a regional normative framework on migration and mobility.

In the **Solomon Islands**, the ongoing project by [UNDP, the Ministry of Environment, Climate Change, Meteorology and Disaster Management \(MECMD\) through its Climate Change Division, and of Agriculture and Livestock \(MAL\)](#) on *Enhancing resilience of communities in Solomon Islands to the adverse effects of climate change in agriculture & food security* is composed of community-based adaptation initiatives, institutional strengthening to promote climate resilient policy frameworks for the agricultural sector and climate change adaptation knowledge sharing.

... in disaster risk reduction

In the **Federated States of Micronesia** and **the Republic of the Marshall Islands**, a Disaster Mitigation, Relief and Reconstruction Programme, implemented by IOM, aims at providing humanitarian assistance for reconstruction and recovery after disasters. Emergency response capacity shall be increased by working with governments and concerned communities (IOM, 2009d).

In **Timor-Leste** the project "IOM Support to Disaster Risk Reduction in Timor-Leste, Phase II" aims at strengthening governmental institutions in their preparation and response to natural disasters, as well as at supporting community-based disaster risk management.

Migration as a proactive adaptation strategy needs to be integrated more systematically into the National Adaptation Programmes of Action (NAPAs) for LCDs (GFMD, 2010)

Disaster Risk Reduction:
"The conceptual framework of elements considered with the possibilities to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development."
(UN/ISDR, 2004:.. 17)

Research and capacity building

The [Global Environmental Migration Project](#), of the United Kingdom's Foresight Programme, has explored global patterns and impacts of migration on development over the next 50 years that will arise from environmental change, mainly in areas most affected by environmental change and migration. Its [final project report](#) has recently been published (Government Office for Science, 2011).


The [Hyogo Framework for Action \(HFA\)](#) is the best known legally non-binding international instrument on **disaster prevention, containing five priority areas of action for the period of 2005-15 (IOM, 2010b)**


The [Guiding Principles on Internal Displacement](#) provide an existing protection framework

The [Environmental Change and Forced Migration Scenarios \(EACH-FOR\) project](#) was funded by the European Commission and was realized by environmental scientists and migration experts. In 23 small-scale case studies around the world, the link between climate change and migration was explored. New large-scale specialized research, for example more specialized household surveys, should be the next research step to obtain more nationally representative studies. In accordance, the ACP Observatory on Migration plans in-depth studies in several pilot countries with the aim to foster policy adaptation and development. Two pilot studies are planned for 2011, namely in DRC and the Pacific region examining the links between the environment, migration and human development. Other countries may be studied in 2012. Due to often weak governance structures, capacity building for national officers is also needed (Laczko and Aghazarm, 2009) and one of the ACP Observatory's activities planned for 2013.


4.2 Recommendations

Supporting a stronger evidence base and capacities


 **Policy-oriented research on migration influenced by environmental change** should have a stronger focus on internal South-South migration, those immobile and those moving to environmentally vulnerable areas, in particular cities, giving greater weight to slow-onset environmental changes and examine how migration can be used as an adaptation strategy to climate change. In order to improve data collection and research methodologies, researchers need to work more inter-disciplinary.

 An independent **Commission on Migration and Environment Data (CMED)**, made up by international organizations such as IOM and UN agencies, could be created to develop a **Global Database on Migration influenced by environmental change**. This tool would contain practical guidelines on standardizing definitions, making better use of existing data sources, sharing them systematically, developing internationally comparable indicators of migration influence by environmental change, assembling a description of existing laws, policies and programmes pertaining to this type of migration at the national, regional and global level and suggesting policy solutions (Laczko and Aghazarm, 2009).

Regional organizations can play an important role in promoting multi-stakeholder cooperation across countries to assure more policy coherence, e.g. via assisting governments in developing national legislation, regional labour migration agreements, regional cooperation on DRR and CCA and regional disaster response systems (Barnett and Webber, 2009)

 **Capacities** of officials, communities and other stakeholders need to be strengthened to prevent forced displacement.


Integrate migration as an adaptation strategy into existing (policy) frameworks


 Climate change **adaptation strategies** (CCAs) allow people to remain in their original settlements by reducing vulnerability to and building resilience against climate change. CCAs include the adaptation of agricultural practices (e.g. drought resistant crops), the building of infrastructure like coastal barriers and dykes, voluntary labour migration and the planning of resettlement if it is impossible to remain (Martin, 2010). Voluntary temporary or circular labour can diversify family income and improve livelihood conditions of the region by transmitting financial and social remittances. To prevent misuse of remittances by beneficiaries, funds can be channeled through a remittances pool, allowing the government to subsidize and orientate sustainable development projects for migrants and their respective communities while assuring a participatory development process at both micro and macro level. This may lead to encourage environmental conservation and the return of migrants. In this case migration can be a beneficial strategy for climate adaptation as well as for development (Leighton et al., 2011). Therefore, policy measures need to **facilitate voluntary movements** out of vulnerable regions by providing **micro-finance schemes** and **education**, by facilitating


remittances, knowledge and skill-transfer to vulnerable communities and access to labour markets, by developing international temporary and circular labour migration schemes for environmentally vulnerable communities, particularly at less advanced stages of environmental degradation (GFMD, 2010; Barnett and Webber, 2009) and by reducing the barriers to return migration.


Resettlement should only be a strategy of last resort, ideally conducted with adequate time for preparation, following the proactive Resettlement with Development (RwD) approach.
(Barnett and Webber, 2009)

CCA and DRR are integrated into development projects, e.g. in Mauritius, Senegal, Mali, Zimbabwe, Timor-Leste, Haiti and Mozambique, aiming at raising national decision and policy makers' awareness of the necessity of integrating migration into national adaptation strategy and of investing in CCA and DRR
(IOM, 2009a)

 One adaptation strategy especially to fast-onset events is the strengthening of bilateral, regional and international disaster response systems. **Disaster Risk Reduction Strategies (DRRs)** identify three areas of action: the compilation of risk assessments, the establishment of early warning systems and the incorporation of risk reduction elements into national development plans (GFMD, 2010).

 The Caribbean Development Bank plans to establish a catastrophe insurance mechanism in form of a multi-donor trust fund, to protect micro finance institutions and the livelihoods of micro credit borrowers from natural disasters.

 Existing **social networks** also play an important role for the access by temporary or seasonal migrants to the labour markets of the regions of destination (Tacoli, 2011).

 The ongoing **urbanization** trend in ACP countries results in the increase of the number of migrants settling in cities. These are mainly found in coastal and lowland zones, thus exposed to a higher risk of climate change related events. By establishing **stricter implemented land zoning and building codes**, the mainly poor migrants could be deterred from settling in the most perilous areas. These low-cost alternatives would not address root causes but could contribute to preventing relocation at a later stage (GFMD, 2010).



Housing, Land and Property (HLP) rights:

Neither does the 1992 UN Framework Convention on Climate Change (UNFCCC) mention displacement and human rights, nor does the 1951 Refugee Convention incorporate the rights of 'environmental migrants'. While the mitigation dimension ranges high on international and national political agendas, adaptation strategies are still less addressed. This stands in contrast to the fact that climate change already triggers or is a contributing factor to migration, with a high probability of influencing even more on migration patterns in the future. In order to prevent conflict and to create sustainable solutions, it is thus indispensable to take into consideration human rights issue, such as HLP rights (Displacement Solutions, 2009).

Movements to environmental risk areas in urban and costal flood zones in ACP countries necessitate urban planning, including access to water, sanitation and food in cities in the South.
(Government Office for Science, 2011)

Since the majority of climate-induced migration will take place within national borders, the HLP rights need to be mainstreamed into national planning processes, via incorporating them for example into key documents like the [National Adaptation Programmes of Action \(NAPAs\)](#) (Displacement Solutions 2009; USAID, 2010).

One example of community involvement can be found in Papua New Guinea. The Integrated Carterets Relocation Programme of the [community-driven initiative Tulele Peisa](#) was created to find HLP solutions in the currently ongoing resettlement process from the Carteret Islands to the island of Bougainville (Displacement Solutions, 2009).

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