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NATURAL DISASTER PREVENTION AND RESPONSE IN
THE AMERICAS AND FINANCING PROPOSALS

(Economic Commission for Latin America and the Caribbean - ECLAC)



UNITED NATIONS



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This document was prepared at the request of the Government of Colombia as a contribution to negotiations at the sixth Summit of the Americas.

EXECUTIVE SUMMARY

The Americas are extremely vulnerable to natural disasters. Available data show that such disasters are increasingly frequent throughout the region: a total of 2,555 in the past 40 years, causing 512,481 fatalities and affecting more than 232 million people. The Caribbean recorded the highest death toll from natural disasters in the Americas, highlighting it as an especially vulnerable area. Natural disasters in the Americas in the past decade are estimated to have cost more than US\$446 billion. They are more than a barrier to eradicating poverty and social inequality; they also hinder development. Developing countries, which have fewer resources to draw on when tackling the consequences of natural disasters, tend to take action after a catastrophe has struck, responding to emergencies and reconstruction needs in the aftermath instead of taking risk abatement steps in advance. The Economic Commission for Latin America and the Caribbean (ECLAC) is therefore recommending the consolidation of a region-wide framework for efficient disaster risk management, the incorporation of disaster prevention in national and local planning with clearly defined institutions and functions and the use of risk financing instruments that help to minimize the losses caused by disasters. Given the growing frequency of natural disasters in the region, it is vital that countries have readily available sources of financing to draw on in order to improve risk management and cope with disasters, and that they explore new sources of financing to that end. Because the region is extremely vulnerable to climate change, ECLAC has proposed that a regional adaptation fund be set up to complement the Green Climate Fund, drawing on South-South cooperation and providing the countries in the region with resources for adaptation programmes where the resources from the Green Climate Fund and the country itself are not sufficient.

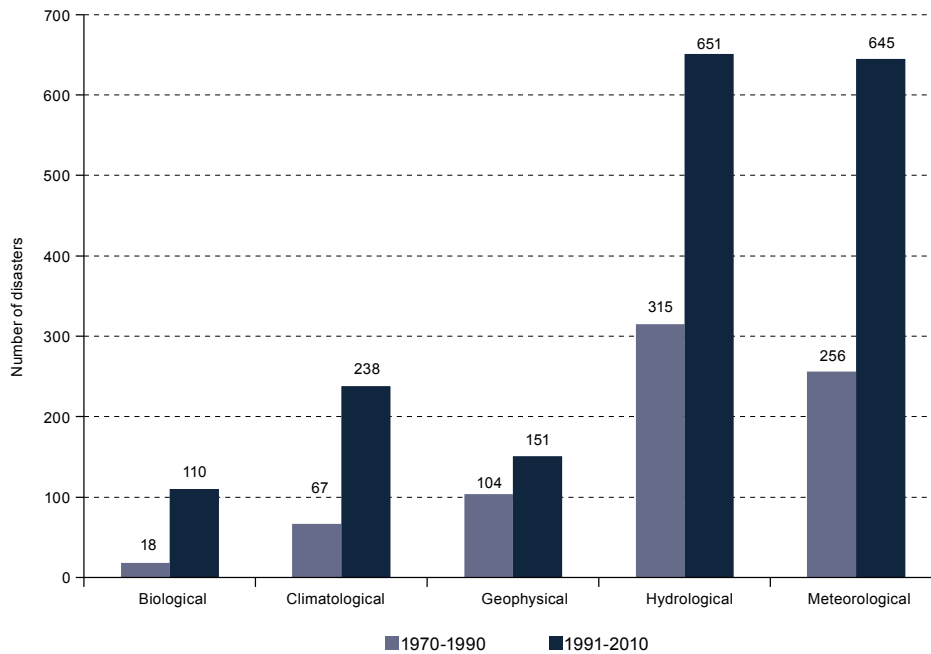
1. Assessment

The region's geography and topography make the countries of the Americas extremely prone to natural disasters,¹ especially hydrological and meteorological events. And factors relating to poverty levels, the proliferation of informal settlements and slums and poor housing make some population groups more vulnerable to the adverse effects of natural disasters to which the majority of the population is exposed (Narváez and others, 2008).

In the past 40 years, floods and storms have been the most common disasters to hit the Americas. Moreover, in the period 1991-2010 the number of hydrological and metrological disasters more than doubled compared with the period 1970-1990. Climatological disasters (forest fires, droughts and extreme temperatures) occurred 3.5 times more often in the past two decades than in the period 1970-1990 (see figure 1).

¹ The Centre for Research on the Epidemiology of Disasters (CRED) defines natural disasters as a situation or event which overwhelms local capacity, necessitating a request to a national or international level for external assistance; an unforeseen and often sudden event that causes great damage, destruction and human suffering.

Figure 1
TYPES OF NATURAL DISASTERS IN THE AMERICAS



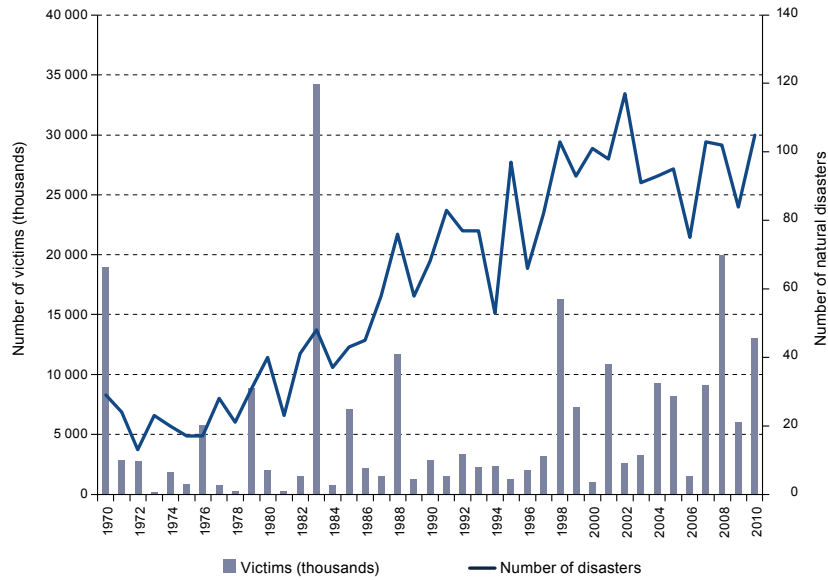
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of EM-DAT: The OFDA/CRED International Disaster Database [online] www.emdat.be.

A look at all types of natural disasters² occurring in the Americas since 1970 clearly shows they are increasing in frequency (see figure 2). On average, an estimated 62 natural disasters of varying magnitude strike each year. Over the past 40 years, a total of 2,555 natural disasters have occurred, causing 512,481 fatalities and affecting more than 232 million people through injury, displacement, evacuation, the need for emergency medical treatment or the loss of their home. South America and Central America recorded the highest number of people affected by natural disasters in the period 1970-2010, totalling 136 million and 38 million people respectively. The Caribbean, with the highest number of fatalities from natural disasters in the Americas, is the most vulnerable part of the region.

The increasing frequency of natural disasters in the region has compounded their economic impact, too. In each of the subregions of the Americas, more than 65% of the total number of disasters in the past 40 years has been in the past two decades. Natural disasters in the Americas in the past decade are estimated to have cost more than US\$446 billion, just over double the cost of the disasters that struck in the 1990s (see figure 3).

² See Below, Wirtz and Guha-Sapir (2009) for a full explanation of the typology and classification of disasters.

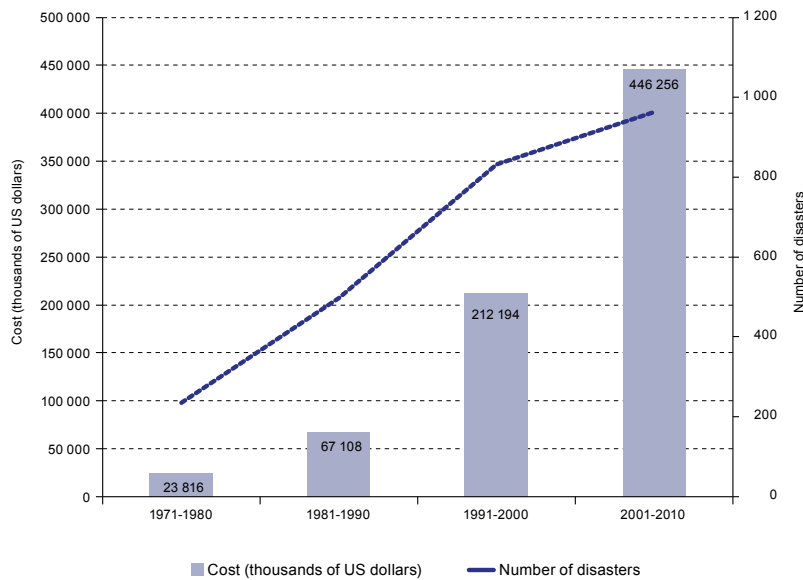
Figure 2
NUMBER OF NATURAL DISASTERS AND VICTIMS IN THE AMERICAS, 1970-2010



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of EM-DAT: The OFDA/CRED International Disaster Database [online] www.emdat.be.

Note: The number of victims comprises the number of persons killed or affected.

Figure 3
ESTIMATED COST OF NATURAL DISASTERS IN THE AMERICAS, 1970-2010



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of EM-DAT: The OFDA/CRED International Disaster Database [online] www.emdat.be.

According to estimates reported to the Centre for Research on the Epidemiology of Disasters (CRED), meteorological disasters (storms) accounted for 67% of natural disaster costs, followed by geophysical disasters (volcanoes and earthquakes), at 13%, and hydrological disasters (floods), at 11%. By subregion, South America and North America were hit by 63% of the natural disasters occurring in the Americas in the past 40 years and bore 88% of the costs.

2. Disaster prevention and response

Natural disasters are a major barrier to reducing poverty and social inequality and, in general, to progressing towards achievement of the Millennium Development Goals. This is especially the case in developing countries, which have fewer resources to effectively tackle the consequences of natural disasters. In the aftermath of a natural disaster there is usually a shift in priorities as governments postpone planned investments in economic and social development as well as investments needed to make the population less vulnerable.

With few exceptions, countries in Latin America and the Caribbean tend to act after a natural disaster strikes (IDB, 2007), reacting to deal with emergencies and reconstruction needs instead of investing in risk abatement—including disaster prevention—up front. It is likely that international aid in the form of physical and financial resources to assist countries hit by natural disasters is in some cases encouraging countries to give priority to post-disaster measures instead of preventive action.

There are arguments in favour of disaster prevention and risk reduction. Evidence shows that natural disasters are taking an increasingly heavy economic toll on the region and that many of its countries face financial constraints when responding to a disaster. Furthermore, climate change is making Central America and the Caribbean increasingly vulnerable to extreme weather events, including stronger hurricanes. Lastly, disaster prevention is cost-effective and the evidence shows that effective prevention depends not just on how much money is allocated but also on how well it is spent (United Nations and World Bank, 2010).

The data also show that there are marked differences between the subregions of the Americas with regard to the number of natural disasters and even more so in the magnitude of their impact. Only 15% of the natural disasters striking the Americas in the past 40 years hit the Caribbean, but they accounted for 47% of the fatalities caused by disasters during that period. The countries' natural disaster risk and aftermath preparedness vary along geographical lines as well.

This situation calls for the creation of regional mechanisms to encourage risk prevention and facilitate rapid response to natural disasters. It is therefore proposed that existing subregional bodies be used as a starting point to consolidate a regional framework to ensure efficient disaster risk management. The idea is to create a space to forge synergies and import good practices born of experience at bodies such as the Andean Committee for Disaster Prevention and Relief (CAPRADE), the Caribbean Disaster Emergency Response Agency (CDERA) and the Coordination Centre for the Prevention of Natural Disasters in Central America (CEPREDENAC). The framework should build on the progress already made by these bodies, such as the operational guide for mutual disaster assistance in Andean countries, which is designed to formulate operational procedures to facilitate existing mechanisms in the event of disaster situations requiring international aid (Narváez and others, 2008).

Furthermore, the countries in the region need to mainstream disaster risk management in national and local planning. This calls for clearly defined institutions and functions, as well as standards and regulations geared towards disaster prevention. Progress needs to be made in urban planning, land management, the monitoring of dangerous phenomena, earthquake resistance standards and stringent physical infrastructure construction regulations, the use of risk financing instruments and linkages between the private sector and disaster risk management. Chile, Mexico, Colombia and El Salvador have made substantial progress in these areas, which could be reviewed and replicated by countries that have yet to take preventive measures.

Since the 1990s, ECLAC has been developing and implementing a methodology for evaluating the socio-economic impact of disasters in the countries of the region. It has determined that the consequences of disasters require a systematic, coherent approach to risk reduction. This policy should be regarded as a key component of the development processes under way in the countries in the region (ECLAC, 2007), since appropriate disaster prevention, mitigation and response is related to development. The disaster risk management assessment carried out by ECLAC and the Inter-American Development Bank (IDB), in which five countries in the region were taken as case studies, found that the effectiveness of the risk management system is undermined by institutional weaknesses, which are in turn related to a lack of clarity about how shared responsibilities are to be delineated between agencies and levels of government, a lack of human resources training in institutions, insufficient coordination between sectors and between the local and national levels, and a shortage of economic, technical and structural resources at the local level for effective risk management (ECLAC, 2007).

The countries in the region can take advantage of technical assistance opportunities offered by the IDB for the design and implementation of integrated disaster risk management plans focusing on the definition of risks; prevention and mitigation; financial risk management; and the strengthening of institutions for the purposes of preparedness, response and recovery. Similarly, the World Bank offers disaster risk management support by increasingly incorporating risk reduction into investment programmes.

Clearly there are differences in the region with regard to disaster prevention and response. The Caribbean in particular has to contend with significant financial constraints, institutional weaknesses and limited technical capacities and is dependent on the support of the Americas to be better prepared for dealing with the hydrological and meteorological events that will very likely occur in the future. Moreover, the region in general needs to make progress towards efficient disaster risk management that reduces its vulnerability and minimizes the economic repercussions.

3. Financing for disaster prevention and response

The income level of the countries of Latin America and the Caribbean, together with inadequate—or in some cases non-existent— risk management systems and the lack of financial provision for dealing with disasters largely explain why the countries in the region lack the financial resources needed for timely emergency response and post-disaster reconstruction. Recent studies show that between 70% and 80% of disaster resources come from loans granted after a disaster has struck, from transfers to the communities affected and from post-disaster donations and aid, whereas pre-disaster financial measures (reserve funds or insurance policies) are only used to cover 20% of disaster expenditures (IDB, 2007).

The Disaster Deficit Index reflects the macroeconomic and financial risk to which countries are exposed and measures the fiscal vulnerability caused by disasters (Cardona and others, 2008, 2010; Marulanda and others, 2008, 2010). Index estimates for 19 countries in Latin America show that 14 of them are economically incapable of coping with extreme disasters, even if they stretch their borrowing to the maximum (SELA, 2010). The indicators for the countries of Central America and the Caribbean pose the most cause for concern and should be a warning sign because these regions are most likely to be hit by extreme hydrological and meteorological events.

Against this backdrop, and given the increasing frequency of natural disasters in the region, it is vital that countries have readily available funds that they can draw on to improve risk management and provide disaster response. ECLAC is urging the countries in the region to take steps towards catastrophe insurance programmes covering seismic risks and towards hydrological and meteorological disaster risk transfer, and to focus on the State's obligation to insure public infrastructure as a mechanism for minimizing losses and mitigating the financial impact of disasters.

Both the IDB and the World Bank have set up major funds for Latin America and the Caribbean to improve financial risk management, some of which have already been drawn on by countries such as the Dominican Republic and Colombia. The IDB has an integrated approach to the management of the financial risks associated with natural disasters. This approach is based on preventive action, specifically: strengthening institutional capacities to efficiently manage contingent liabilities; improving fiscal and budgetary planning so that countries have reserve funds and are better prepared to cover the costs arising from natural disasters; and developing financial instruments and mechanisms to meet extraordinary needs.

The financial instruments include the US\$600 million stand-by credit facility designed to help countries in Latin America and the Caribbean to cope with the effects of disasters. To draw on the facility, the country in question must have been hit by a disaster and have an integrated disaster risk management programme in place.

The IDB also offers countries in the region insurance facilities for efficient natural disaster risk management, which can even be used to transfer financial risks relating to climate change, agriculture and food security. This instrument enables countries to access international capital and risk-transfer markets, reduce losses and lower the fiscal burden of governments caused by storms, floods, hurricanes, earthquakes and other disasters occurring often in the countries of Central America and the Caribbean. In Colombia and Mexico, subsidized government insurance policies are already available for the agricultural sector covering weather damage to crops. In Colombia the insurance also covers agricultural infrastructure losses (ECLAC, 2007).

The World Bank has a disaster risk management portfolio that includes emergency recovery programmes, multisector risk mitigation programmes (covering earthquakes, floods, cyclones and other disasters) and risk financing instruments. Instruments include the Caribbean Catastrophe Risk Insurance Facility (CCRIF) and the Catastrophe Risk Deferred Drawdown Option (DDO), which functions as parametric insurance and guarantees the availability of funds with the advantage that there is no commitment fee if the resources are not drawn. In the region, this stand-by credit line has been approved for Costa Rica, Guatemala and Colombia for a total of US\$300 million, and for Peru for an additional US\$100 million, to strengthen the capacity of governments to allocate resources in the aftermath of catastrophes, as well as to promote risk reduction policies and actions.

Another instrument is the multi-country catastrophe bond platform; it has been used by countries in the region such as Mexico, which issued a bond (up to US\$450 million) to cover earthquakes measuring more than 7.5 on the Richter scale and to help it to deal with emergencies (ECLAC, 2007). The World Bank also has a Global Facility for Disaster Reduction and Recovery and the Multidonor Disaster Prevention Trust Fund, which enables countries to finance —by means of donations— investments in disaster prevention, disaster risk assessments and the establishment of disaster risk management institutions (IDB, 2007).

Given the need for resources to address the impacts of natural disasters in the region, ECLAC recommends that countries explore new sources of financing to that end. Brazil, Chile, France, Norway and the United Kingdom have made some headway in identifying innovative sources of development financing by means of international charges to combat hunger, disease and poverty. France, for example, has been levying a tax on airline tickets since 2006 to finance the purchase of medication to treat HIV/AIDS, tuberculosis and malaria. ECLAC is urging consensus on the need to identify additional sources of financing for disaster prevention and response and suggests setting up a working group to explore the feasibility of and potential for mechanisms such as taxes on the purchase of polluting cars, vehicle fuel consumption, the purchase of weapons, the use of credit cards, and wealth taxes, above a technical threshold.

Lastly, a group of experts should be tasked with carrying out a technical study using historical data to measure the link between temperature and precipitation and the meteorological, hydrological and climatological disasters that have struck the region and drawing on medium- and long-term climate scenarios to predict the number of disasters that could occur in the future. The findings of the study, together with data on the cost of past disasters, could be used to estimate the size of the fund or stand-by credit facility or for financing disaster response. The technical study should also determine the financing framework and the bodies that will administer it.

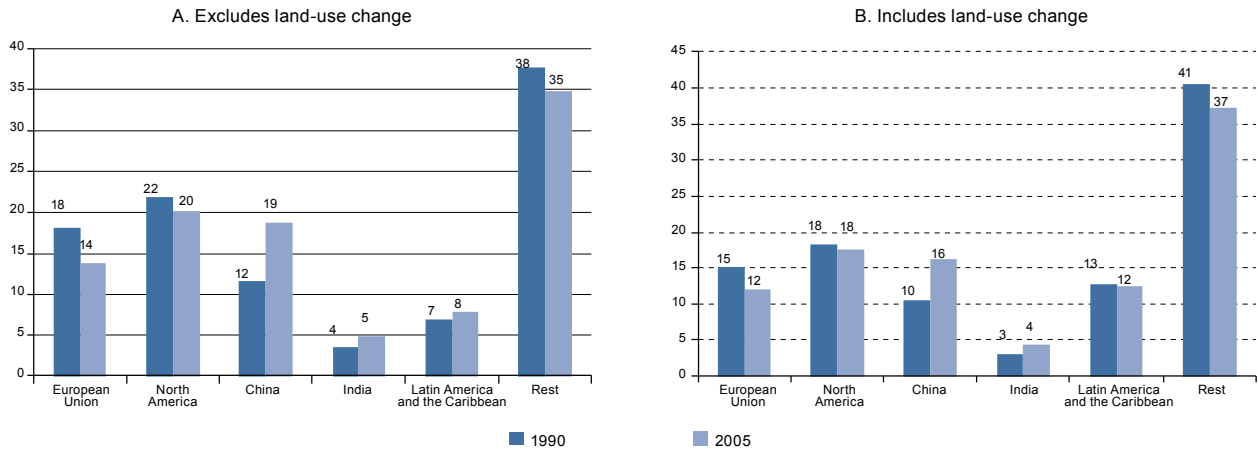
4. Regional vulnerability to climate change

Climate change is a global problem with significant repercussions for Latin America and the Caribbean. Despite their low level of emissions compared with other regions (see figure 4), the countries of Latin America and the Caribbean are extremely vulnerable to the effects of climate change. Regional and national studies have shown the impacts of climate change on the economies, poverty levels and biodiversity of the region (Galindo, 2009; ECLAC, 2009, 2010a, 2010b, and ECLAC/IDB, 2009 and 2010).

Scientific evidence shows that the increase in anthropogenic greenhouse gas emissions, besides being linked to increases in temperatures, alterations in precipitation patterns and rising sea levels, is also increasing the intensity of extreme weather events (IPCC, 2007).

The impact of global climate change is so profound that the need for adaptation and mitigation is endangering long-term development. This calls for collective action by countries to mitigate its effects. To that end, Latin America and the Caribbean should invest in adapting to the needs arising from the emerging climate scenario and propose activities that help to cut their emissions in keeping with development objectives.

Figure 4
REGIONAL SHARE OF GLOBAL GREENHOUSE GAS EMISSIONS
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Climate Analysis Indicators Tool (CAIT) Version 7.0. (Washington, DC: World Resources Institute, 2010).

Limiting the rise in the global average temperature to no more than 2 degrees Celsius above pre-industrial levels entails a shift in the approach to development in favour of sustainability and technological progress that enables economies to grow based on lower carbon emissions and greater social inclusion and equity. These changes in turn require price-based public policies that send the right signals; fiscal reforms that are compatible with environmental protection; macroeconomic policy objectives that are consistent with environmental policy goals; and regulations designed to minimize environmental degradation and internalize the costs of damage.

Recent climate change summits have moved the subject to the top of government agendas. With the conclusion of the Copenhagen Accord and the Cancun Agreements progress was made in key areas such as the creation of the Green Climate Fund, to which industrialized countries contribute funds to finance climate change mitigation and adaptation in developing countries. Developed countries pledged resources totalling US\$30 billion for the period 2010-2012, to be allocated in a balanced manner between adaptation and mitigation, and a further US\$100 billion per year from 2020 onwards.

The Transitional Committee was set up to design the structure, operation and governance of the Green Climate Fund, including guidelines and the manner in which disbursements are made, supervised and evaluated. Although progress has been made in the negotiations on financing, it is not yet clear whether the only mechanism for accessing Green Climate Fund resources will be the Nationally Appropriate Mitigation Actions (NAMAs) and the National Adaptation Programmes of Action (NAPAs). Numerous issues still need to be defined before North-South financing becomes a reality. Discussions are under way on the types of projects that could be financed with these resources, the percentage of funding to be provided by the Green Climate Fund and the proportion that should be financed by countries with their own resources. It is still unknown whether the Green Climate Fund will operate based on a joint financing model or another model. Based on the North-South international financing framework, operated through the Green Climate Fund, it is also unclear whether the resources granted to a developing country may be combined with third-country contributions if the resources provided by the beneficiary country are not sufficient for project implementation.

In view of the above, ECLAC suggests that the countries in the region join forces to propose region-wide standards for the Green Climate Fund. It is important that Latin America and the Caribbean adopt a regional position as well as national positions on the rules of the Fund. This would enable regional adaptation plans to be accepted, including joint financing, where applicable, drawing on South-South cooperation instead of just sources within the country. In that context, discussions should be held on how a common regional approach could operate to achieve acceptance of South-South cooperation as a means of complying with Green Climate Fund rules.

A regional adaptation fund should be created to complement the Green Climate Fund. Based on South-South cooperation, it would provide countries in the region with resources to finance adaptation projects if resources from the Green Climate Fund and from the country itself are not sufficient.

To draw up this proposal two regional working groups will need to be created to define the fund's objectives, composition and operation. The first working group will submit its proposals to the Green Climate Board; the second will define the regional adaptation fund's operating rules and determine how to comply with Green Climate Fund rules.

ECLAC recommends that a regional plan should be drawn up on appropriate adaptation measures geared towards natural disaster response. The plan should cover the impact of disasters on agriculture, livestock farming and urban infrastructure. To that end, a regional working group should be set up and tasked with quickly defining the rules for a regional programme of action, the requirements to be met by the programmes, the impacts that they could cover, whether the programmes will include damage reparations, action relating to the construction of new preventive infrastructure, food security and other forms of human security. Furthermore, the working group should establish a framework that prevents problems relating to country moral hazard and should determine priority actions.

Lastly, ECLAC recommends setting up a working group to carry out a technical study to achieve long-term consensus in Latin America and the Caribbean on macro-actions and targeted adaptation measures to tackle disasters. The study should contain a long-term mapping of climate zones showing areas that are vulnerable to flooding or drought, hurricanes or coastal and marine dynamics, which will be incorporated in the regional adaptation plan.

The figure below summarizes the proposal put forward by ECLAC for the creation of a regional adaptation fund.

Diagram 1

