THE WORLD BANK

Catastrophe Risk Financing in LCR:

Recent Solutions and Challenges Ahead

SYNOPSIS

The International Bank for Reconstruction and Development has helped several Latin American and Caribbean countries access financial markets to provide funds to cope with future disasters. Innovative financial initiatives supported by the IBRD enabled Costa Rica to quickly access funds after an earthquake in January 2009. Such initiatives will also allow Haiti to quickly draw upon desperately-needed money in the wake of the catastrophic earthquake there.

Challenge

As the massive earthquake that struck Haiti early in 2010 illustrated so tragically, many countries in Latin America and the Caribbean are highly exposed to a range of natural disasters. According to the United Nations' recent Global Assessment Report, nine of the world's top twenty countries that are most exposed to disaster economically are in the Latin America and Caribbean Region, with an annual expected loss for the region of more than US$2 billion.

Natural disasters have too often derailed development programs, erasing gains accumulated over years of effort. Emerging economies are particularly impacted, as they generally experience rapid growth in infrastructure and economic activities without the means to establish appropriate planning and building standards. Growing populations and a greater concentration of assets in disaster-prone areas are resulting in more severe disaster-related losses. The expected increase in the frequency and intensity of hazardous weather events because of climate change is likely to exacerbate this trend.

World Bank member countries have increasingly asked the institution for assistance with catastrophe risk financing before disasters occur. Without systems in place to mitigate the impact of natural disasters, governments are faced with potentially greater tragedies both in terms of human life and financial losses when catastrophes strike. Accordingly, many developing countries have placed disaster mitigation high on their development agendas and are increasingly interested in a variety of risk financing solutions to better protect their fiscal balances and improve response capacity.

Results

As more countries have taken pro-active steps to address the risks related to adverse natural events, the World Bank, through the International Bank for Reconstruction and Development (IBRD) has responded by creating a suite of products and services, many of them developed and tested in Latin America and the Caribbean. By using pre-arranged financing mechanisms, countries are better able to respond when a disaster strikes, rehabilitating essential services to pre-disaster economic production levels more quickly and thereby diminishing the economic impact of the disaster. New financial instruments are also used to buffer the impact of disasters on fiscal balances while economic activity recovers.

- Following the 6.2 magnitude earthquake that hit Costa Rica in January 2009, the government was able to draw down US$15 million of a special credit line (a Catas-

trophe Deferred Drawdown Option or Cat DDO) for disaster recovery. The World Bank was able to provide funds within 24 hours following the request from the Government. Guillermo Zuñiga, Minister of Finance, talking after a visit of the earthquake-affected area, indicated that "**the type of assistance offered by the Bank is beneficial to Costa Rica as it involves an efficient way to insulate our economy and have resources available in advantageous conditions, if they were to be needed.**" Since the World Bank created Cat DDOs in 2008, three countries—**Costa Rica** ($65 million), **Colombia** ($150 million), and **Guatemala** ($85 million)—have signed up for the innovative financing vehicles. For Costa Rica, the Cat DDO was a timely addition to its menu of catastrophe risk financing products. In addition to the access to immediate liquidity, the Cat DDO has offered Costa Rica a possibility to improve and consolidate its risk financing strategy for the country.

- **Over the last ten years**, Mexico developed a self-insurance fund for financing disaster recovery (Fondo de Desastres Naturales or FONDEN), that relies on market-based financial instruments. In 2006, as part of this strategy, Mexico, with the technical assistance of the World Bank Group, issued a catastrophe bond —the **Cat-Mex bond**—with a historically low interest rate spread. The US$160 million issue provided cover against the risk of earthquakes in three regions surrounding Mexico City. This was the first time a sovereign country had issued a catastrophe bond. Mexico was the first country to use **the MultiCat program**, a flexible catastrophe bond platform developed by the Bank that allows for the issuance of cat bonds with multiple perils, regions and countries. Mexico **issued a US$290 million series of notes in October 2009** using this platform, which was well received and oversubscribed in the market. The 2009 issuance provides US$290 million of coverage over three years for three specific risks—earthquakes (three areas around Mexico City), Pacific hurricanes (two areas) and Atlantic hurricanes (namely the area around Cancun). "**The partnership between Mexico and the World Bank, under its MultiCat Program, has allowed us to efficiently transfer a pool of catastrophic risk —earthquake and hurrican—to the market for the first time, and we are very satisfied with the results achieved**," said Alejandro Werner, Vice Minister of Finance, Government of Mexico. "**We are also very proud to have contributed to the creation of this platform that also makes a new set of catastrophe risk management instruments available to other members of the World Bank.**"
- In 2007, the World Bank Group helped the Caribbean Community (CARICOM) establish the **Caribbean Catastrophe Risk Insurance Facility (CCRIF)**, a Caribbean-owned "parametric" insurance pool, which offers fast payout to its 16 Caribbean member countries upon occurrence of pre-defined hurricane strengths and earthquake magnitudes within defined geographical locations. The instrument allows for fast payout because it is independent of actual damages. This type of parametric instrument will normally be attractive for governments to finance early rehabilitation activities and to fill the public financing gap in the period where governments will be raising additional funding for reconstruction purposes. CCRIF offers participating countries an efficient and transparent vehicle to access the international reinsurance and capital markets. The facility became operational on June 1, 2007, and has been recognized by the insurance/reinsurance industry for its innovation. As a self-sustaining entity, CCRIF relies on its own reserves and reinsurance to finance itself.

The donor community contributed to initial reserves and participant countries paid one-time participation fees. In 2009, its third year of operation, CCRIF successfully placed more than US$130 million

of coverage in the international reinsurance and capital markets. As part of CCRIF's reinsurance placement, the World Bank Treasury placed a portion of the catastrophe risk in the capital markets through a cat swap in 2007, 2008 and 2009. The US$30 million swap between IBRD and CCRIF was the first transaction to enable emerging countries to use a derivative transaction to access the capital market to insure against natural disasters. It was also the first time a diversified pool of emerging-market countries' catastrophe risk was placed in the capital markets. While the creation of CCRIF was supported by IBRD and largely driven by IBRD member countries, participation in the insurance pool is not limited to IBRD countries. The CCRIF is preparing to make a payout of US$7.75 million to the Government of Haiti as a result of the magnitude 7.0 earthquake which struck close to Port-au-Prince, Haiti, in January 2010. The recent earthquake was of sufficient magnitude to trigger the full policy limit for the earthquake coverage. CCRIF is hopeful that the rapid payment of funds under Haiti's policy will assist the government and people of Haiti in addressing immediate needs as they begin the recovery and rebuilding process.

- The **Central American Weather Risk Management Program**, which offers **index-based crop insurance products**, has been developed in **Guatemala, Honduras,** and **Nicaragua**. The program is currently operating in **Nicaragua**, where 2500 hectares of export crops, with a value of US$41.6 million, were insured in 2008.

Approach

The World Bank Group advocates **catastrophe risk financing** as an important element of the strategic framework for disaster risk management. Catastrophe risk financing is most effective when a government adopts a strategy of retaining some risks on its balance sheet and transferring others to the private sector. The World Bank Group team works with the client to determine what instrument or combination of instruments is most appropriate depending on the probability and the severity (the expected losses) of the specific catastrophe risks. National reserve funds, supplemented by **contingent financing** if needed, can efficiently address small and recurrent losses. **Insurance and/or reinsurance** more efficiently cover larger, but less frequent, losses while losses from major natural disasters can be transferred to the capital markets through securities like **catastrophe bonds**. Naturally, international donor assistance in the aftermath of catastrophe remains an essential element of the strategy for financing recovery from major disasters. The following table outlines key characteristics of different risk financing instruments.

Instrument	Disbursement	Cost of financing (multiplication factor)
Reserve Funds	Fast	1–2
Budgettary reallocation	Moderate	1
Contingent Credit Line (CAT DDO)	Fast	1
Loans (World Bank and others)	Slow	1
Donor contributions	Slow	0–1
Traditional Insurance	Slow	2–6
Parametric Insurance	Fast	2–5
Catastrophe Bonds	Fast	2–5

World Bank Group financial solutions for catastrophe risk management package knowledge, convening power, financial expertise, lending instruments and South-South partnership for knowledge exchange or risk pooling that can help governments plan for and reduce the human and financial costs of disaster recovery.

Summary Timeline

- In 2005, the World Bank established a regional coordinator for Latin America and the Caribbean who coordinates all activities related to disaster risk in the region.
- **June 2007**: World Bank assists CARICOM in establishing **CCRIF**.

BOX 1

Innovation in Catastrophe Risk Financing

The Bank has played different roles in assisting countries access catastrophe risk financing instruments available in the market. IBRD acted as an arranger in the structuring of a Catastrophe Bond, provided advice in establishing Risk Insurance Facilities, acted as an intermediary with the market in a CAT swap, and provided direct financing through contingent loans.

Contingent Credit Lines: The CAT DDO (Catastrophe Deferred Drawdown Option) is a contingent policy loan instrument offered by IBRD that allows countries that are pro-active about reducing their risk to adverse natural events to draw funds immediately after a disaster. It offers IBRD-eligible countries immediate liquidity of up to US$500 million or 0.25 percent of GDP (whichever is less) at regular IBRD lending rates to respond to natural disasters. This instrument is also the first to address the problem of moral hazard in donor funding of disaster recovery, by requiring countries to establish and maintain a disaster risk management program that is monitored by the World Bank.

Catastrophe Bonds: Cat bonds transfer risks to capital market investors by allowing the issuer to not repay the bond principal and instead use these funds for disaster recovery if a major disaster occurs. The MultiCat Program allows governments to use a standard framework to buy insurance on affordable terms by issuing catastrophe bonds. The objectives of the program are to facilitate public access to affordable insurance coverage, enlarge the traditional investor base for catastrophe bonds by offering yields uncorrelated with financial markets, and ensure governments' access to immediate liquidity to finance emergency relief and reconstruction work after a natural disaster. The program supports a wide variety of structures, including the pooling of multiple risks (earthquakes, floods, hurricanes and other wind storms) in different regions. Each bond issued under the platform carries the MultiCat brand name and uses a common legal structure and documentation, with the World Bank acting as arranger.[1]

Risk Insurance Facilities: Self-sustaining insurance pools offer parametric coverage, akin to business interruption insurance, against natural disasters. The WBG provides advisory services to help countries establish national or regional vehicles to pool risks and access international catastrophe reinsurance markets on competitive terms.

CAT swaps: Swaps are contracts whereby parties agree to exchange cash flows. In a catastrophe swap, an insurer agrees to make periodic payments to another party, and the other party agrees to make payments to the insurer in the event of a specific catastrophic event. IBRD executed a CAT swap with the CCRIF and a back-to-back swap with the market, effectively transferring the catastrophic risk to the market.

- **March 2008**: IBRD offers contingent financing through **Cat DDO** to middle income countries (September 2008: Costa Rica contracts first Cat DDO).
- **October 2008**: IBRD intermediates first **weather derivative** for a developing country.
- **October 2009**: World Bank launches MultiCat catastrophe bond issuance platform.

IBRD Contribution

IBRD's contribution to catastrophe risk financing is grounded in its expertise, convening power and market access. This supports two complementary catastrophe risk financing product lines: the Cat DDO and emergency lending; and advisory services in areas such as strengthening domestic property insurance markets, helping establish multi-country facilities, and intermediating in the market.

In the case of the Cat DDO, the Bank leverages its balance sheet to provide middle-income countries with an instrument that is not otherwise available in the financial market. It also draws on its technical expertise to advise client countries in the design and implementation of risk management programs. In the case of the **MultiCat (Cat Bonds)**,

the Bank acts as technical advisor and intermediary in the processing of highly innovative transactions.

The World Bank Group also provided advisory services to **CARICOM** to establish the **CCRIF.** In addition, it used its convening power to bring donors and participating countries to join the initiative and the IBRD provided US$10 million to the initial reserves of the CCRIF. It also financed US$14.2 million in IDA special credits to the governments of four Caribbean countries (Dominica, Grenada, St Lucia, and St Vincent and the Grenadines) and a US$9 million IDA grant to the government of Haiti to finance the payment of entry fees and of annual insurance premiums for **CCRIF** during the first years of operations.

The World Bank Group is providing **technical assistance** to **Colombia**, **Costa Rica** and **Mexico** to review the catastrophe risk exposure of public assets and infrastructure and develop effective and affordable **catastrophe insurance programs to protect these assets**. In Costa Rica the World Bank Group is working with the national insurance company (INS) to design a dedicated vehicle to insure public assets. Results of preliminary work show that the proposed vehicle would improve coverage with a net savings of at least US$50 million over ten years.

Partners

- **MultiCat Program**. The World Bank leveraged its market expertise and contacts, partnering with the main players in catastrophe bond/reinsurance markets —Swiss Re, Goldman Sachs, and Munich Re—in the development of the **MultiCat Program**. The World Bank acts as arranger for the bonds issued under the program.
- **Caribbean Catastrophe Risk Insurance Facility.** CCRIF is the result of two years of collaborative work between CARICOM governments, key donor partners (i.e., Japan, United Kingdom's **Department For International Development**, the **Canadian International Development Agency**, the Agence Française de Développement, the Caribbean Development Bank, Ireland, Bermuda and the European Union), and the World Bank Group.

Next Steps

- **Cat-DDO.** Several countries in Latin America and the Caribbean and other regions have expressed interest in Cat DDOs and Peru is currently in the early stages of preparation of a possible Cat DDO. El Salvador, Panama, and the Dominican Republic are other countries that have discussed the instrument with the Bank. Bogota has indicated potential interest in a sub-national Cat DDO. Discussions are ongoing on how these could be included in country programs.
- **MultiCat Program.** With this latest addition to the World Bank's catastrophe risk financing tool box, the World Bank Treasury will continue outreach to staff about MultiCat's financial features and the program's place in designing comprehensive catastrophe risk management programs. In parallel, Treasury will resume dialogue with a small group of more advanced countries on possibilities for using MultiCat and will deepen its dialogue with market participants and capital market investors to bring more investors to catastrophe bond markets.
- **Caribbean Catastrophe Risk Insurance Facility.** CCRIF is currently developing a series of innovative products including: excess rainfall parametric insurance for member countries and hurricane coverage for the distribution grid of power utility companies in the region. The feasibility of a similar vehicle is being investigated for the Pacific basin, at the request of the South-Pacific Island Countries (Pacific Catastrophe Risk Financing Initiative).

LEARN MORE

The Caribbean Catastrophe Risk Insurance Facility
http://www.ccrif.org/

MultiCat program
http://treasury.worldbank.org/bdm/pdf/Handouts_Finance/Financial_Solution_MultiCat.pdf

Colombia CAT DDO
http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:22016811~menuPK:34463~pagePK:34370~piPK:34424~theSitePK:4607,00.html

Guatemala CAT DDO
http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:22141932~pagePK:34370~piPK:34424~theSitePK:4607,00.html

Costa Rica CAT DDO
http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:21903367~menuPK:51062077~pagePK:34370~piPK:34424~theSitePK:4607,00.html

MULTIMEDIA

Haiti Earthquake: World Bank Support
http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:22442021~menuPK:51416191~pagePK:64257043~piPK:437376~theSitePK:4607,00.html

Turkey: Earthquake protection
http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:22334324~menuPK:51416191~pagePK:64257043~piPK:437376~theSitePK:4607,00.html

Disaster risk management in Malawi (agriculture insurance), Indonesia (tsunami response) and Haiti (vulnerability reduction).
http://gfdrr.org/index.cfm?Page=9&ItemID=99