Introduction
There were three (3) overarching aims for the research; confirmation of weather-related events as a real threat to the resilience of the Caribbean region, especially low income households in agriculture and tourism; assessment of the implicit and explicit demand for microinsurance; and assess potential implementation options. The specific project objectives were:

i. Understand the needs of low income groups in managing loss and damage from weather-related events.
ii. Inform policy discussions on loss and damage in the UNFCCC process.
iii. Use the results of the market demand survey to inform product design and implementation in the Caribbean in 2012.

Project Methodology
The project methodology involved three (3) main components: a literature review on background issues in the Caribbean related to climate change, extreme weather events, poverty, coping mechanisms and microfinance; a demand survey of 1,059 low income persons in Agriculture and Tourism in Belize, Grenada, Jamaica and St. Lucia in order to assess their coping mechanisms and implicit (need) and explicit demand for weather-related microinsurance; and interviews with financial institutions and representative organizations. The rationale for the structure of the sample was to include persons at risk of loss of goods/customers or loss of employment due to extreme weather.

In relation to the interviews with financial institutions and representative organisations, these were to investigate the potential for distribution channels for a microinsurance product as well as to get another view on the risks and coping mechanisms utilised by their clients/members.

Weather Hazards in the Caribbean
The countries of the Caribbean are vulnerable to a number of weather-related hazards including droughts, floods and hurricanes. These latent threats have also been increasing in intensity. As an example of the manner in which these hazards have presented themselves in recent years, between 2002 and 2007, Jamaica experienced five hurricanes (including Ivan and Emily), two storms and a seven-month drought (Campbell and Beckford, 2009). Hurricane Ivan devastated Grenada in 2004 and Hurricane Emily made landfall in 2005 while recovery efforts from Ivan was still ongoing (Kairi Consultants Limited, 2008). For Belize, in 2010, Hurricane Richard caused severe wind damage to housing and agriculture in Belize, with more than half of the total damage to the economy being in the agricultural sector (Tzul, 2010).

In quantifying this loss for these four countries, CRED data indicates that over the last 30 years, flood and tropical storm damage had affected 1.5 million persons directly and caused over US$5 billion in damage. For the future, the news is not encouraging. Bueno, Herzfel, Stanto and Ackerman (2008) estimate the costs of climate change for the Caribbean as nearly US$6 billion per year by 2050, and the decline of coastal tourism by 16% by 2080 due to shrinking beaches. In addition, and as a more immediate effect, Crowards (2005) notes that in the year of a disaster, tourist arrivals drop by 2.8% with a reduction of approximately 13% in the growth rate. While it is noted that growth returns in subsequent years, on average it does not return to its pre-disaster levels until three (3) years later.

The Caribbean Catastrophe Risk Insurance Facility (CCRIF) (2010) estimates that the effect of climate change in housing, tourism and agriculture could increase expected losses by 1% to 3% of GDP by 2030, with hurricane damage having the potential to account for as much as 90% of all damage. Carby’s (2011) estimation of current annual losses from natural disasters in the Latin American and Caribbean region is US$3.3 billion, up from US$700 million two decades previous. Rasmussen (2004), looking specifically at the OECS, estimates that damage from hurricanes, which hit approximately every 2.5 years, costs approximately 2% of the affected country’s GDP. In controlling for land mass, Rasmussen (2004) suggests that the OECS is one of the most disaster prone regions in the world, being 12 times more exposed than the average. As this information confirms, climate change and extreme weather have a dramatically negative effect on the Caribbean region.

Survey Results
For the survey of low income persons in agriculture and tourism in Belize, Grenada, Jamaica and St. Lucia, a sample target of 275 persons per country was set with a target of 1100 overall. Following collation and cleaning of the data, 1059 responses were deemed suitable for analysis.

The urban/rural ratio was 1:1, while 64% of respondents were the head of their household, and 52% had completed at least a secondary education. In addition, the average household was operating at 113% of the poverty line (i.e. they were 13% above the poverty line and would therefore be considered vulnerable).

<table>
<thead>
<tr>
<th>Main Job</th>
<th>Males (%)</th>
<th>Female (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture/Fisheries</td>
<td>39.4</td>
<td>16.8</td>
<td>30.5</td>
</tr>
<tr>
<td>Vendor</td>
<td>12.9</td>
<td>43.9</td>
<td>25.1</td>
</tr>
<tr>
<td>Catering</td>
<td>4.7</td>
<td>8.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Hotel/Restaurant Worker</td>
<td>4.8</td>
<td>11.1</td>
<td>7.4</td>
</tr>
<tr>
<td>Taxi</td>
<td>17.0</td>
<td>2.0</td>
<td>10.5</td>
</tr>
<tr>
<td>General Services/Other</td>
<td>21.1</td>
<td>19.9</td>
<td>20.5</td>
</tr>
</tbody>
</table>

Overall, 49% of respondents indicated that they had a high/very high dependence on agriculture, 41% indicated that they had a high/very high dependence on tourists to their country, and 14% indicated that they were highly dependent on both sectors.

Nearly 70% of respondents had some form of self-employment while, as an indicator of the level of informality, 61% of businesses were not registered.

Extreme Weather, Coping Mechanisms and Implicit Demand
In demonstrating the at-risk nature of these populations, 42% of the sample had experienced some loss due to extreme weather since 2000, with some respondents experiencing multiple losses.

• 26% experienced house damage due to flooding or high winds
• 38% experienced loss of customers or employment

The coping mechanisms actually utilised by the respondents in the aftermath of the last ‘disaster’ are outlined in the table below. Overall, the dominant response, as seen with previous studies in the region, was the use of savings by 36% of sample; followed by borrowing (12%) and government assistance (9%).

Of greatest concern from these results were respondents not ‘repairing or replacing’, doing nothing, not knowing what to do or ‘waiting’.

Interpreting these overall results suggest that approximately 11% of the sample was at risk from not countering any of the adverse effects of these events and this inaction may have more detrimental longer term effects than utilising high stress coping mechanisms such as selling assets or taking children out of school.
The Demand for Weather-related Microinsurance and Risk Management Approaches in the Caribbean

Overall the results indicate that the coping strategies utilised are medium level stressors. As indicated by Sebstad et al.’s (2006) classification, these medium stress coping strategies have the longer terms impact of depleting financial reserves, increasing indebtedness, and interference with family life. For governmental support, this further exacerbates a dependence culture among those affected; as does the inclination to just ‘wait’ for something to happen. This inclination to not repair/replace etc., which should be considered high level stressors, have longer terms impacts such as: loss of productive capacity, loss of income sources, further depletion of assets, loss of access to finance, untreated health problems and social isolation. The level of these ‘do nothing’ responses suggests there is an implicit demand for insurance as a low stress coping strategy. In addition to querying coping strategies, and also related to the implicit need for insurance, respondents also conducted a self-assessment as to their risk-exposure from a number of scenarios. The most prominent risk was loss of customers or loss of job, noted as being a high or very high risk by 33% and 30% of respondents respectively. The other issue of concern was that 28% perceived themselves at a moderate to very high risk of house damage due to high winds. In total these results suggests the there is an implicit need for weather-related microinsurance in the region.

The Demand for Weather-related Microinsurance in the Caribbean

Despite there being a high level of implicit demand for weather-related microinsurance in the region, there is only a moderate explicit demand demonstrated by the study. Overall, 23% exhibited a high/very high demand for the product, while 33% indicated a moderate level of demand.

However, this demand is differentially distributed across the countries with a high/very high demand of over 28% in all the countries with the exception of Belize (17%).

Summation

The Caribbean is an at-risk region from extreme weather events and low income persons are experiencing losses due to extreme weather: 42% had experienced a loss since 2000. In coping with these events, low income persons are utilising medium stress responses, with a worrying number ‘waiting’ or ‘doing nothing’ as a response. The research has shown that there is an implicit demand (need) for microinsurance in the region with approximately 31% considering themselves at a high/very risk of losing income due to extreme weather; while 23% of respondents stated a high/very high explicit demand.

Given that the threats exist and that there is both implicit and explicit demand for microinsurance in the region, the next steps involve the design, marketing and implementation of a weather-based index insurance product for low income persons that adheres to the principles of microfinance: non-complex, innovative, easily accessible, and appropriate in terms of timeliness; both at it relates to income streams and post-disaster needs.

References


Project Background

The project was undertaken with financial support from the German Development Corporation (GIZ) through the Munich Climate Insurance Initiative (MCII). The project was coordinated by Dr. Jonathan G. Lashley with regional research support from Caribbean Development Research Services (CADRES).

Dr. Jonathan Lashley is a Fellow at the Sir Arthur Lewis Institute of Social and Economic Studies (SALISES) of the University of the West Indies (UWI), Cave Hill Campus, Barbados. He is a geographical economist specialising in enterprise development for sustainable development. His research seeks to address the issues of poverty and socio-economic development in the Caribbean via the building of resilience through microfinance, education and entrepreneurial development. He has undertaken several regional projects for governments and international donor agencies in these areas and continues to seek to address the gap between social policies and economic policies in the Caribbean. Dr. Lashley can be contacted at lashley@caribsurf.com and his profile can be seen at: www.cavehill.uwi.edu/salises/staff/

CADRES is a regional research organisation that conducts social and political economic research, across the Caribbean. This organisation has been in existence since 1990 and in this time has worked for several Caribbean governments, political parties and national, regional and international organisations. The primary work of CADRES relates to political polling; however it has conducted considerable work outside of this area and as such has built up a cadre of associates in the individual islands who have an intimate knowledge of the local landscape. CADRES can be contacted at CADRES@sunbeach.net.