

# CLIMATE INVESTMENT FUNDS

May 8, 2009

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## **SUPPLEMENTARY REPORT OF THE PPCR EXPERT GROUP**

**(Prepared by the PPCR Expert Group)**

## Introduction

1. At its meeting in January 2009, the PPCR Sub-Committee agreed to the following:

“With regard to the recommendation of the Expert Group that regional programs be developed for the Caribbean and South Pacific regions, the Sub-Committee requested the Expert Group to undertake further analysis, in collaboration with the MDBs and relevant regional organizations, with a view to recommending which cluster of countries should be included in each regional program. To assist the Expert Group in this work, the Administrative Unit, working with the MDB Committee, is requested to prepare further guidance to clarify the proposed objectives, organization and modalities of regional programs, indicating what kinds of activities or program components could best be undertaken at the regional level, what kinds of activities and program components would be better suited to implementation at the country level, and what would be the benefits, synergies and potential lessons to be learned from a regional approach.

The Sub-Committee also agreed that it is important to ensure an appropriate regional balance in the selection of pilots, and it requested the Expert Group to undertake further analysis of the countries in the Middle East and North Africa region with a view to adding a priority country from that region to the pilot program.

The Expert Group was invited to come back to the Sub-Committee with additional recommendations as early as possible. It was agreed that the Expert Group should finalize its report once the Sub-Committee had completed its selection of the pilot programs. The final report should be published on the website of the Administrative Unit.”

2. In response to the request of the Sub-Committee, the Expert Group has prepared the following reports on the selection of countries to participate in the program for the Caribbean region and the selection of a country from the Middle East and North Africa region to participate as country pilot program.

# **Supplementary Report of the Expert Group to the Steering Committee for the Pilot Program on Climate Resilience: Caribbean Region Country Selection**

Prepared by Leonard Nurse on behalf of the Expert Group

5 May 2009

## **1. Background and Introduction**

This supplementary analysis of the Caribbean Region (Table 1) was requested by the Sub-Committee (SC) for the World Bank's Pilot Programme for Climate Resilience (PPCR), after consideration of an earlier draft report submitted by the Expert Group (EG) in January 2009. While the present analysis takes into consideration additional guidance provided by the SC, the EG wishes to emphasize that this document is not intended to replace the report submitted earlier. To that extent, it should be read in conjunction with, and not separate from the earlier submission.

In its report of January 2009 the EG underscored the fact that, as in the case of other SIDS, the countries of the Caribbean were consistently ranked among the most vulnerable states anywhere in the world to climate change (Lal et al, 2002; IPCC, 2007). Although the severity of the impacts will vary from place to place, there is a list of climate change-related priority concerns that is common across the region. Sea level rise is expected precipitate higher rates of coastal erosion, amplify flood risk and result in some permanent loss of land. This may be exacerbated further by increase in the destructive potential of tropical storms, whose intensity is projected to increase. Salinity intrusion into coastal aquifers along with projected precipitation changes, will have a negative effect on water availability (Arnell, 2004). Caribbean countries have already experienced widespread coral damage and loss triggered by bleaching, in combination with other anthropogenic stresses. Under all climate scenarios, a higher incidence of bleaching is projected, as ocean temperatures continue to warm (Donner et al, 2005; IPCC, 2007; Oxenford et al., 2007). Loss of coral will also affect livelihoods, for example those dependent on tourism and fisheries.

Moreover, it was also pointed out that Caribbean countries face similar developmental constraints such as limited natural and human resource capacity, openness of their economies, high dependence on a narrow range of goods and services, high population densities and the effects of globalization (Tompkins, 2005; IPCC, 2007). Most of the countries are also low-lying, with some coastal areas below mean sea-level (e.g. Guyana, parts of Belize and The Bahamas). In all countries a high percentage of the population and much critical infrastructure are located along the coast<sup>1</sup>. The EG concluded that across the region, these factors are very likely to be exacerbated by the projected adverse effects of climate change.

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<sup>1</sup> See the First National Communication to the UNFCCC submitted by CARICOM countries.

**Table 1: Countries Comprising the Caribbean Region for Purposes of the Analysis  
(Data Source: CIA World Factbook, 2006)**

<b>Country</b>	<b>Area (km<sup>2</sup>)</b>	<b>Population</b>
Antigua and Barbuda	443	68,720
Barbados	431	279,300
Belize	22,966	279,500
Cuba	110,860	11.3 million
Dominica	754	69,030
Grenada	344	89,500
Guyana	214,970	765,300
Haiti	27,750	8.1 million
Jamaica	10,991	2.7 million
St. Kitts and Nevis	261	38,960
St. Lucia	616	166,300
St. Vincent and the Grenadines	389	117,500
Suriname	163,270	438,100
The Bahamas	13,940	301,800
Trinidad and Tobago	5,128	1.1 million

## **2. Conclusions of the EG Based on the Sub-Committee's Initial Guidance**

From the outset, the EG was unanimous in its conclusion that that there was no single, consolidated index that could represent a country's exposure, risk and vulnerability to climate change, in a meaningful way. Equally, it was neither practical nor meaningful to attempt to derive a single index that would reflect considerations such as '*country preparedness*' '*potential for learning*' and '*replicability*'. Thus, given this reality but following the guidance of the SC, the decision was taken to identify, evaluate and apply multiple criteria, which taken together might provide some reasonable representation of countries' relative vulnerability to climate change, as well as their capacity to participate effectively in the PPCR. Box 1, extracted from the EG's January 2009 report lists the ten 'screening criteria' that were used in the analysis. For ease of reference, the results of that exercise are reproduced in Table 2.

***Box 1: Indicators used to assess vulnerability and country preparedness***

- **LECZ:** % population in low elevation coastal zone, from CIESIN GRUMP dataset (proxy for exposure of country to sea-level rise and related hazards)
- **IWS:** % population with access to improved water source, from 2007 HDR (proxy for vulnerability to reduced water availability)
- **CVI:** Climate Vulnerability Index, developed by University of Oxford to combine considerations of water-related vulnerability with geographically specific contextual information (proxy for vulnerability to climate change impacts on water availability and related factors, broader in scope than the IWS)
- **FI:** % population undernourished, from 2007 HDR (proxy for vulnerability to food insecurity resulting from climate change hazards such as climatic desiccation, transient extremes, loss of agricultural land)
- **HDI:** Proxy for broadly defined adaptive capacity at the national level based on Human Development Index (HDI) ranking from the 2007 Human Development Report. A low ranking in the HDI (indicated by a high number), is interpreted as indicative of low adaptive capacity.
- **CDVI:** Climate Disaster Vulnerability Index, based on Brooks et al., 2005: Number of occurrences of a country in the upper fifth of a vulnerability ranking based on a composite vulnerability index constructed from 11 developmental indicators which are strongly related to mortality from climate-related disasters, subject to different weightings. Values from 0-13, with 13 indicating very high vulnerability regardless of weighting.
- **CDRIa:** Climate Disaster Risk Index (a), representing cumulative numbers affected by climate-related disasters from 1978-2007, scaled by 2007 national population, from World Bank IDA-related dataset, based on CRED EM-DAT dataset (proxy for historical risk from climate-related disasters, focusing on exposure and implicit vulnerability)
- **CDRIb:** Climate Disaster Risk Index (b), representing average performance across five indicators based on absolute numbers killed, percent of population killed and affected, and ratios of killed to affected, for climate-related disasters in the 1990s, from Adger et al., 2004 (proxy for historical risk associated with climate extremes, including considerations of coping capacity)
- **EVI:** Environmental Vulnerability Index (proxy for sensitivity of physical environment to short-term and long-term climate hazards, (used only for Pacific region)
- **RAI:** Resource Allocation Index, from World Bank IDA-related dataset (proxy for country preparedness in terms of ability to absorb funds and manage funds and projects, although not climate-specific)

**Table 2: Vulnerability indicators for the Caribbean region**

ISO3 V10	Country	LEC Z	CDRIa	IWS	FI	HDI	CVI	CD VI	CDRI b	RAI
ATG	Antigua and Barbuda	31	188	91	-	57	-	-	-	-
BHS	Bahamas	88	27885	97	8	49	-	-	-	-
BRB	Barbados	4	3	100	<2.5	31	-	-	-	-
BLZ	Belize	40	62	91	4	80	-	-	-	-
CUB	Cuba	13	114	91	<2.5	51	-	-	-	-
DMA	Dominica	7	132	97	8	71	-	-	-	3.85
GRD	Grenada	6	58	95	7	82	-	-	-	3.68
GUY	Guyana	55	212	83	8	97	-	-	-	3.42
HTI	Haiti	9	62	54	46	146	-	13	5	2.86
JAM	Jamaica	8	80	93	9	101	-	-	-	-
KNA	Saint Kitts and Nevis	17	29	100	10	54	-	-	-	-
LCA	Saint Lucia	4	50	98	5	72	-	-	-	3.97
VCT	Saint Vincent	9	20	-	10	93	-	-	-	3.83
SUR	Suriname	76	5	92	8	85	-	-	-	-
TTO	Trinidad and Tobago	13	0	91	10	59	-	-	-	-

It was the conclusion of the EG that no single country in the region retained a consistent ranking when all agreed indicators were applied. Notwithstanding, the analysis indicated that two countries, Haiti and Guyana, ranked *highest* with respect to vulnerability indices and *lowest* on socio-economic indicators. A third country, Dominica, also scored high on vulnerability, although its ranking based on socio-economic criteria was not as low as that of either Haiti or Guyana. It was on this basis and taking all the above observations into consideration, that the EG recommended the implementation of a regional project for the Caribbean, that includes Haiti, Guyana and Dominica.

### 3. Additional Guidance of the Sub-Committee

Subsequent to the submission of the January report, the EG was invited to revisit its earlier analysis of the Caribbean region, based on additional guidelines developed by the SC. These guidelines are set out in a document dated April 6, 2009, titled “Guidance Note on PPCR Regional Programs”. The guidance focuses on the following sub-headings:

- i. Objectives and rationale of a regional approach;
- ii. Types of activities at the regional level;
- iii. Types of activities to be undertaken at the national level;
- iv. Organization and modalities; and

- v. Benefits, synergies and potential lessons to be learned from a regional approach.

#### 4. Methodology

An extensive search of the literature since submission of the January 2009 report, has yielded no new, comparable data or indices on exposure, risk or vulnerability to climate change for the countries of the Caribbean. Similarly, while some climate modeling studies for the region are ongoing<sup>2</sup>, a comprehensive set of validated results is yet to be published. Moreover, while the modeling will provide outputs at the sub-regional level (e.g. Northern, western, eastern and southern Caribbean), it is unlikely that these results will be at a sufficiently fine resolution to support a meaningful comparison of vulnerability, by country. Hence, the EG holds the view that there is as yet no sound quantitative basis for ranking Caribbean states on the basis of their individual exposure and risk to climate change. To that extent, the results presented in Table 2 remain valid.

It was therefore decided to re-examine the suite of available socio-economic indicators which, if carefully selected, could be used as further *qualitative* indicators of vulnerability and adaptive capacity. It would be recalled from the earlier report that the 2007 Human Development Index (HDI) was the indicator applied as a proxy for general adaptive capacity at the country level. For purposes of the current analysis, eight variables some of which are incorporated into the consolidated HDI, were selected and compared by country, as additional filters for the region.

A key factor driving the selection was the availability of data across countries, since a comparative ranking was being undertaken. On this basis, the variables virtually self-selected: data for 5 variables were reported for all fifteen countries, while information for the other 3 indicators were available for fourteen states. The variables chosen are life expectancy, GDP per capita, adult literacy, mortality rate for children under age 5, infant mortality rate, access to an improved water source, access to improved sanitation, and percentage of food imported<sup>3</sup>.

#### 5. Results

Each country was assigned a relative ranking based on the eight variables selected. The results are presented in Table 3. The values in parentheses represent the *relative ranking* for each of the fifteen countries for the specific variable. Evidently, the results would indicate that as the numbers in parenthesis increase, adaptive capacity decreases, while vulnerability increases. Examination of the table reveals that two countries, Haiti and Guyana, have consistently poor rankings on all seven variables considered. Haiti is assigned rank 15 on four criteria, 14 on one variable and 13 on the remaining three indicators. Guyana is ranked 7 on one variable, 14 on five indicators, and 13 on the other criterion.

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<sup>2</sup> These modeling exercises are being conducted by the Mona (Jamaica) and Cave Hill (Barbados) campuses of the University of the West Indies for (a) the western and northern Caribbean and (b) the eastern and southern Caribbean, respectively.

<sup>3</sup> This variable was chosen as a proxy measure of food security.

Since no other clear candidates emerged from the analysis, it was decided to compare the relative rankings for each country, according to the number of times that a country was assigned a rank in each tercile. With fifteen countries, the rankings could conveniently be grouped into terciles (1-5; 6-10; 11-15). The total occurrences are 7, i.e. the number of variables used in the analysis. Naturally, rankings in the bottom third of the grouping would suggest that low adaptive capacity (high vulnerability) and vice versa. Table 4 presents the results of this exercise.

Once more, Haiti and Guyana stand out, with all seven indicator rankings in the bottom tercile of all countries. The analysis indicates that 43% (3) of the rankings assigned to Jamaica are in the bottom tercile, while 57 % (4) fall in the middle tercile. Although five other states (Suriname, St. Vincent & the Grenadines, Dominica, St. Kitts and St. Lucia) have a similar number of rankings as Jamaica in the middle tercile, none of the former have more than 29% (2) of their rankings in the bottom tercile. It should also be pointed out that Jamaica is one of only two countries (the other being St. Vincent and the Grenadines<sup>4</sup>) without any indicator rankings in the top tercile. On the basis of the analysis presented above, Jamaica clearly emerges (along with Haiti and Guyana) as one of the leading candidates in the Caribbean region for the PPCR. Jamaica's position is further strengthened with the inclusion of the HDI, one of the key indicators used in the analysis presented in the EG's January 2009 report. With assigned HDIs of .736, .75 and .529 respectively, Jamaica, Guyana and Haiti rank in the bottom quintile of the group.

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<sup>4</sup> It is to be noted that unlike Jamaica with 43% (3) of its rankings in the bottom tercile, only 14% (1) of the rankings assigned to St. Vincent and the Grenadines' fall into this group.

**Table 3: Socio-Economic Indicators Used in the Analysis  
(Data Source: Human Development Report 2007/2008)**

<b>Country</b>	<b>Life expectancy, yrs, 2005</b>	<b>GDP per capita 2005, \$US</b>	<b>Under 5 mortality per 1000 live births, 2005</b>	<b>Infant mortality per 1000 live births, 2005</b>	<b>% pop. using improved water source, 2004</b>	<b>% pop. using improved sanitation, 2004</b>	<b>% food imported</b>
Antigua & Barbuda	73.9 (5)	12500 (5)	12 (2)	11 (3)	91 (9)	95 (6)	74.0 (4)
Barbados	76.6 (2)	17297 (2)	12 (3)	11 (2)	100 (1)	100 (1)	78.8 (5)
Belize	75.9 (3)	7109 (8)	17 (7)	15 (7)	91 (9)	47 (13)	55.19 (1)
Cuba	77.7 (1)	6000 (12)	7 (1)	6 (1)	91 (9)	98 (4)	90.9 (12)
Dominica	75.6 (4)	6393 (11)	15 (6)	13 (5)	97 (4)	84 (10)	72.9 (3)
Grenada	68.2 (13)	7843 (6)	21 (12)	17 (8)	95 (6)	96 (5)	---
Guyana	65.2 (14)	4508 (13)	63 (14)	47 (14)	83 (14)	70 (14)	80.8 (7)
Haiti	59.5 (15)	1663 (15)	120 (15)	84 (15)	54 (13)	30 (13)	93.8 (14)
Jamaica	72.2 (8)	4291 (14)	20 (9)	17 (9)	93 (7)	80 (11)	88.2 (11)
St. Kitts & Nevis	70.0 (10)	13307 (4)	20 (9)	18 (12)	100 (1)	95 (6)	85.7 (10)
St. Lucia	73.1 (6)	6707 (9)	14 (4)	12 (4)	98 (3)	89 (9)	81.3 (8)
St. Vincent & The Grenadines	71.1 (9)	6568 (10)	20 (9)	17 (10)	---	---	92.4 (13)
Suriname	69.6 (11)	7722 (7)	39 (13)	30 (13)	92 (8)	94 (8)	64.8 (2)
The Bahamas	72.3 (7)	18380 (1)	15 (5)	13 (6)	97 (4)	100 (1)	79.7 (6)
Trinidad & Tobago	69.2 (12)	14603 (3)	19 (8)	17 (11)	91 (9)	100 (1)	82.0 (9)

**Table 4: Number of Rankings in Each Tercile, Based on Socio-Economic Criteria  
(The HDI 2007/2008 for each country appears in parentheses)**

<b>Country</b>	<b>No. of Times Ranked in Top Tercile of Countries</b>	<b>No. of Times Ranked in Second Tercile of Countries</b>	<b>No. of Times Ranked in Bottom Tercile of Countries</b>
Antigua & Barbuda (.815)	5	2	0
Barbados (.892)	7	0	0
Belize (.778)	2	4	1
Cuba	4	1	2
Dominica (.798)	4	2	1
Grenada (.777)	1	3	2
Guyana (.75)	0	0	7
Haiti (.529)	0	0	7
Jamaica (.736)	0	4	3
St. Kitts & Nevis (.821)	2	4	1
St. Lucia (.795)	3	4	0
St. Vincent & The Grenadines (.761)	0	4	1
Suriname (.774)	1	4	2
The Bahamas (.845)	4	3	0
Trinidad & Tobago (.814)	2	3	2

## **6. Recommendations**

### **6.1 Option 1**

On the basis of the preceding analysis, and taking into consideration the conclusions presented in the EGs report of January 2009, Haiti, Guyana and Jamaica have emerged as the Caribbean's leading candidates for the PPCR. While it may be argued that Haiti (with an index of 2.9 on a scale of 1-6) ranks relatively low on capacity and governance criteria, it must be emphasized that the country also ranks high on vulnerability (including with respect to hurricane return periods<sup>5</sup>) and very low on socio-economic indicators. Furthermore, as the only LDC and poorest country in the Western Hemisphere, Haiti's vulnerability to the projected adverse impacts of climate change will be pronounced. The EG believes that high vulnerability and low adaptive capacity

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<sup>5</sup> As recently as the 2008 hurricane season, Haiti was severely affected by four tropical storms, two of which reached hurricane intensity.

are compelling reasons for recommending Haiti for consideration as a PPCR candidate. The EG therefore reaffirms its previous support for Haiti.

In summary therefore, the EG recommends Guyana, Jamaica and Haiti as the leading countries for participation in the PPCR.

## **6.2 Option 2**

Notwithstanding the recommendation offered in option 1, the SC may wish to recall that the Caribbean has successfully executed a number of regional climate change projects, spanning more than a decade. The list includes the following:

- Caribbean Planning for Adaptation to global Climate Change (CPACC) – executed in 12 English-speaking CARICOM countries
- Adapting to Climate Change in the Caribbean (ACCC) - executed in 12 English-speaking CARICOM countries
- Mainstreaming Adaptation to Climate Change in the Caribbean (MACC) - executed in 12 English-speaking CARICOM countries
- Special Adaptation to Climate Change Project in the Caribbean (SPACC) - executed in 3 English-speaking CARICOM countries

In addition, there are other related multi-country projects already that being implemented or approved, e.g.

- Mainstreaming Disaster Risk Management in the Organization of Eastern Caribbean States
- Regional Disaster Risk Management for Sustainable Tourism in the Caribbean
- Improvement of the Policy and Institutional Framework in the Organization of Eastern Caribbean States
- Support for Poverty Assessment and Reduction in Caribbean Countries
- Caribbean Carbon Neutral Tourism Project

The entire region has benefited considerably from these initiatives, particularly with respect to capacity building and training, institutional development, learning-by-doing from demonstration projects, strengthening of regional collaboration, public education and awareness-raising, and the engagement of key policy makers. While there are some differences, the countries of the Caribbean are generally exposed to a similar hazards, risks and vulnerabilities (climate and non-climate). To that extent there are many valuable lessons to be learned and shared among states, which can be leveraged effectively through the execution of a regional project. Equally important is the development of efficacious, cost-effective adaptation and risk-reduction strategies that will be required as components of the region's climate-proofing programme.

The region's long experience and success in the execution of multi-country programmes suggest that there would be low risk if another such initiative were recommended by the SC. The Caribbean has a proven track record with respect to institutional capacity for the execution of major regional projects. In this regard, the Caribbean Community Climate Change Centre (CCCCC) and the Caribbean Development Bank (CDB) are well-respected institutions that have

executed many regional programmes in collaboration with international agencies including the World Bank and the Inter-American Development Bank, and various donor countries. In fact, the Centre's excellent credentials both as a project implementing agency (IA) and executing agency (EA) are well known to the World Bank and the GEF. In addition, the Caribbean Community (CARICOM) has considerable administrative and coordination capacity, developed over several decades dating back to 1973. The CARICOM Secretariat reports to the Heads of Government, and can thus provide vital access to the region's high-level policy makers. A list of persons consulted from these institutions is provided at Annex 1.

Consequent upon the foregoing observations, and taking into consideration (a) the aims and objectives of the PPCR (b) the guidance provided by the SC (c) the region's priorities with respect to climate change adaptation and (d) the institutional and other capabilities resident in the region, the EG proposes the following alternative for the SCs consideration:

- A multi-country project drawn from a selection of states (including a sub-set from the OECS sub-region. that provides good spatial coverage, and is representative of the range of climate change risks confronting the region. The selection might include the three countries proposed in option 1.

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## **Annex 1**

### **Persons Consulted During Preparation of the Report**

- Ms. Cheryl Dixon – Operations Officer, Environment Division, Caribbean Development Bank, Barbados
- Dr. Kenrick Leslie – Executive Director, Caribbean Community Climate Change Centre, Belize
- Dr. Ulric Trotz – Science Advisor, Caribbean Community Climate Change Centre, Belize
- Mr. Carlos Fuller – Deputy Director, Caribbean Community Climate Change Centre, Belize
- Dr. Edward Greene – Assistant Secretary General, Human and Social Development<sup>6</sup>, CARICOM, and Chairman of the Caribbean Regional Task Force on Climate Change

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<sup>6</sup> The Human and Social Development Division of CARICOM has responsibility for matters relating to regional sustainable development...

## Supplementary Report of the Expert Group to the Steering Committee for the Pilot Programme on Climate Resilience: MENA Region Country Selection

Prepared by Nick Brooks and Shardul Agrawala on behalf of the Expert Group

24 April 2009

### 1. Introduction and background

In March 2009 the Expert Group (EG) for the Pilot Programme on Climate Resilience (PPCR) submitted a report to the Steering Committee (SC) on country selection guidance for the Middle East and North Africa (MENA) region. This report was an expansion of guidance submitted as part of the initial report on global country selection. The MENA report suggested three possible country/group selections for inclusion in the PPCR. The suggested selections were based on a combination of (i) a quantitative analysis of indicators representing vulnerability to three broad categories of climate change hazard (ii) a two-tier classification of countries on the basis of levels of risk and extent of vulnerability for each hazard category (see Table 1 below, reproduced from the original MENA report), and (iii) expert judgment.

The SC subsequently requested more clear and specific guidance on country selection, based on a ranking of MENA countries in which each country was assigned a specific score or rank to indicate its suitability for inclusion in the PPCR relative to other countries in the region. This supplementary report is a response to that request.

**Table 1.** Summary of results of exposure, vulnerability and risk assessments for the three categories of hazard examined for the MENA region.

Climatic desiccation	Variability, uncertainty & extremes	Sea-level rise
<p>HIGH RISK (high confidence)</p> <ul style="list-style-type: none"> <li>• Highest vulnerability: <b>Mauritania, Jordan, Palestinian Territories.</b></li> <li>• High vulnerability: <b>Egypt, Morocco, Tunisia, Syria.</b></li> </ul> <p>POTENTIAL HIGH RISK (low confidence – unproven hazard):</p> <ul style="list-style-type: none"> <li>• Extreme vulnerability: <b>Yemen, Djibouti</b></li> </ul>	<p>HIGH RISK (high confidence):</p> <ul style="list-style-type: none"> <li>• <b>Djibouti, Mauritania</b></li> </ul> <p>POTENTIALLY HIGH RISK (low confidence – unproven vulnerability):</p> <ul style="list-style-type: none"> <li>• <b>Yemen</b></li> </ul> <p>COUNTRIES OF CONCERN:</p> <ul style="list-style-type: none"> <li>• <b>Morocco, Tunisia</b></li> </ul>	<p>HIGH RISK (high confidence):</p> <ul style="list-style-type: none"> <li>• Highest vulnerability: <b>Djibouti,</b></li> <li>• High vulnerability: <b>Egypt, Mauritania, Tunisia</b></li> </ul> <p>COUNTRIES OF CONCERN:</p> <ul style="list-style-type: none"> <li>• <b>Lebanon, Morocco</b></li> </ul>

### 2. Developing a country-ranking system

It is impossible to represent all of the factors considered in the original multi-criteria analysis, which combined qualitative and quantitative assessment, in a single quantitative index that captures all the relevant elements of risk, exposure, vulnerability, preparedness, replicability, potential for learning, and country-specific factors that were considered in the original MENA report. Ultimately country selection has to be informed by some degree of subjective judgment as to where assistance will be most appropriate and effective. The purpose of the risk analysis is therefore to guide and inform decision-making rather than to drive it.

Given the problems associated with combining all the considerations on which the original recommendations were based, this supplementary report provides a country ranking based on (i) risk scores assigned on the basis of country classifications in Table 1 above, and (ii) scores representing adaptive capacity, based on country rankings in the Human Development Index (HDI). Countries represented in Table 1 are assigned a risk score from 3-0 according to the scoring system in Table 2. The range of HDI ranks represented by these countries was divided into thirds, and scores of 3, 2 or 1 assigned to countries in the lowest third (high numerical value / low HDI ranking indicating lower adaptive capacity), middle third, and highest third (low numerical value / high HDI ranking indicating higher adaptive capacity). The resulting four sets of scores (three representing risk associated with specific categories as hazard and one representing general adaptive capacity, with high values indicating high risk or low adaptive capacity) were summed to create an ordinal ranking of countries based on considerations of overall risk (Table 3).

**Table 2.** Risk scoring system for the three categories of hazard considered in the MENA analysis. Where a country is not represented in a risk category for a particular category of hazard, it is assigned a score of zero for that hazard.

Climatic desiccation		Variability, uncertainty & extremes		Sea-level rise	
High risk (high confidence) - highest vulnerability	3	High risk (high confidence)	3	High risk (high confidence) - highest vulnerability	3
High risk (high confidence) - high vulnerability	2	Potential high risk (low confidence – unproven vulnerability)	2	High risk (high confidence) - high vulnerability	2
Potential high risk (low confidence – unproven hazard)	1	Countries of concern	1	Countries of concern	1

**Table 3:** Ordinal Ranking Based on combination of risk scores for specific categories of hazard and adaptive capacity scores derived from the HDI.

Country	Climate Dessication Score (3,2,1,0)	Var., uncert. & extremes score (3,2,1,0)	SLR score (3,2,1,0)	HDI score (3,2,1)	TOTAL SCORE
Djibouti	1	3	3	3	<b>10</b>
Egypt	2	0	2	2	<b>6</b>
Jordan	3	0	0	1	<b>4</b>
Lebanon	0	0	1	1	<b>2</b>
Mauritania	3	3	2	3	<b>11</b>
Morocco	2	1	1	2	<b>6</b>
Palestinian Terr.	3	0	0	1	<b>4</b>
Syria	2	0	0	1	<b>3</b>
Tunisia	2	1	2	1	<b>6</b>
Yemen	1	2	0	3	<b>6</b>

### 3. Other considerations

The original Terms of Reference for the PPCR EG indicated a number of criteria to be considered in addition to those represented in the above analysis, including eligibility and preparedness. Eligibility considerations include eligibility for overseas development assistance (ODA) funding under OECD/DAC guidelines, country preparedness, and whether countries are highly vulnerable Least Developed Countries (LDCs) including small island states (although participation in the PPCR is not restricted to LDCs). Table 4 indicates country status (i.e. LDC or other income category), based on the OECD DAC list of ODA recipients for 2008, 2009 and 2010.

All of the countries considered in this supplementary report are currently eligible for ODA according to the OECD-DAC list of Aid Recipients for 2008, 2009, 2010.

Table 4 also includes country scores for the World Bank's Resource Allocation Index (RAI), although these are available only for the three LDCs. The RAI provides an indication of a country's preparedness to manage assistance and deliver results through development projects, with higher scores indicating greater preparedness. Of the three LDCs, Mauritania has the highest RAI score of 3.4.

**Table 4.** Country status according to OECD DAC guidelines on ODA assistance, and (final column) country scores in World Bank's Resource Allocation Index (RAI), where data are available.

Country	LDC	Low Income	Lower Middle Income	Upper Middle Income	RAI score
Djibouti	X				3.1
Egypt			X		
Jordan			X		
Lebanon				X	
Mauritania	X				3.4
Morocco			X		
Palestinian Terr.			X		
Syria			X		
Tunisia			X		
Yemen	X				3.2

### 4. Results and recommendations

The ordinal ranking of countries based on their overall risk (including considerations of vulnerability, exposure to hazard, and adaptive capacity) is as follows:

1. Mauritania
2. Djibouti
3. Egypt, Morocco, Tunisia, Yemen
4. Jordan, Palestinian Territories
5. Syria

## 6. Lebanon

**On the basis of the above analysis, the EG’s priority country for participation in the PPCR is Mauritania.** Mauritania has the highest risk score, is an LDC, and has the highest RAI score (indicative of preparedness) of the three LDCs in the region. Mauritania is also ODA Eligible in the OECD-DAC 2008-2010 list of aid recipients.

**A close second recommendation is Djibouti.** Djibouti’s risk score is also significantly higher than the remainder of the MENA countries. Djibouti is also ODA Eligible in the OECD-DAC 2008-2010 list of aid recipients and an LDC. Its small size may make it easier to implement PPCR activities.

There is also a “second-tier” of countries which are clustered closely in terms of risk. This tier includes Egypt, Morocco, Tunisia and Yemen. A good case can be made for any or all of the countries in the group as well. *However, it should be emphasized that Mauritania and Djibouti have risk scores far exceeding this second tier cluster.*