

**CARIBBEAN PLANNING FOR ADAPTATION
TO
GLOBAL CLIMATE CHANGE (CPACC)**

***A GUIDE TO THE PREPARATION OF COUNTRY PAPERS
ON
NATIONAL CLIMATE CHANGE ISSUES***

***In Support of the Implementation of Component 4:
Formulation of a Policy Framework for Integrated (Adaptation) Planning and Management***

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PREFACE

This template is designed as a simple, technical guide which National Focal Points may wish to consult in the preparation of an “*Issues Paper*”, as part of their contribution to the implementation of CPACC Component 4, ‘**Formulation of a Policy Framework for Integrated (Adaptation) Planning and Management**’. From the outset, it became evident to all parties that the formulation of an appropriate policy framework would require clear identification and understanding of the likely threats posed by global climate change.

Against this background, it was agreed that the implementation of Component 4 would benefit from the documentation of what each participating Member State perceives to be the critical issues, in the context of its own national circumstances. For while the entire Caribbean region is highly vulnerable to climate change impacts, the severity of the threat varies from country to country. Moreover, notwithstanding the proven utility of generic approaches to problem-solving in many circumstances, the CPACC project adheres to the view that in order to achieve successful implementation of Component 4, the proposed policy, legal and institutional framework must be ‘customized’ to respond to the specific needs of each country. It is anticipated that the *Issues Paper* would therefore be one of the principal instruments used to achieve this goal.

It was further agreed that the *Issues Paper* should be prepared by the countries themselves, based on their own understanding and perception of the climate change threat, in relation to national priorities. In addition, successful implementation of Component 4 will require complete ‘ownership’ of the process at the national level, thus it is vital to enlist the support of Member States from very early in the implementation phase. The task of producing an *Issues Paper*, assigned to each country, is therefore intended to help foster and nurture genuine ownership of the process.

A Brief Comment on the Template

It should be emphasized that this proposed template is intended merely to provide guidance, to the extent that countries desire it. In the preparation of their papers, countries should therefore not feel constrained to rigorously apply the template, if in their judgement the format is not appropriate to the needs of the country or a particular issue under discussion. Modification to accommodate local circumstances and priorities is to be encouraged. It is for this reason that considerable flexibility has been built into the design of the template.

Finally, it is intended that the output from this exercise will be a succinct reference document, which provides vital background information to facilitate sound decision-making, during the implementation phase. Countries are encouraged to focus on significant, priority issues, and to provide the information in summary or tabular format wherever appropriate, so as to make the document as user-friendly as possible.

PROPOSED TEMPLATE FOR PREPARATION OF NATIONAL ISSUES PAPER

1.0 INTRODUCTION

The purpose of this introductory section is to set the unique national context within which vulnerability and adaptation issues will be identified and discussed. Specifically, this short profile should focus on those key national assets, characteristics and circumstances whose sensitivity and vulnerability to climate change impacts are likely to be amplified.

- 1.1 **Physical Character** [e.g. land elevation; nature of coastal areas, including beaches at risk; special geological features, factors and /or processes such as land emergence or subsidence, etc.].
- 1.2 **Regional/Local Climatology and Related Phenomena** [e.g. variability and change in rainfall and temperature; frequency of floods and droughts; proneness to storms, hurricanes and other high-energy events such as northerly swells
- 1.3 **Important Ecological/Biological Attributes** [e.g. presence of wetlands; seagrasses; corals; other marine and coastal resources].
- 1.4 **Brief Socio-Economic Profile of Country** [main imports, exports; foreign exchange-earning sectors; location of key population centres, infrastructure and their vulnerability to climate change and sea-level rise; potential impact of changing international rules and regulations (e.g. WTO; low-tax regimes) on local economy, etc.].
- 1.5 **Other Factors/Phenomena** which can exacerbate vulnerability to climate change and sea-level rise [e.g. earthquakes; tsunamis; volcanic activity].

2.0 KEY ISSUES WITH RESPECT TO CLIMATE CHANGE

The purpose of this section is to identify those critical issues, factors and processes (meteorological, climatological, biophysical, social, economic, cultural, political), which in the country's best judgement and based on available information, require urgent attention if meaningful strategies for adaptation to climate change and sea-level rise are to be designed and implemented. Wherever possible, it is recommended that clear linkages among interrelated variables be demonstrated, so that policy makers can be better apprised of the complexity and urgency of the challenges with which the country is confronted. Two simple, hypothetical examples might serve to illustrate the importance of such linkages:

- (i) where the data project a trend of decreasing rainfall and increasing vulnerability to drought, a national policy which encourages the development of numerous golf courses, without attention to augmentation of water resources from non-traditional sources (e.g. desalination, importation or other options which the particular country might deem appropriate to its circumstances) would aggravate the threat posed by global climate change.
- (ii) Similarly, in a country which is heavily dependent on coastal tourism for foreign exchange, but which is also low-lying, exposed to storm surge and periodic beach erosion, a policy which fails to restrict beach sand mining and the harvesting of coral reef materials, will enhance vulnerability to climate change and sea-level rise.

2.1. Impact of *Potential Changes in Sea-Level, Hurricane Characteristics, Storm Surge, Rainfall Patterns and Temperature*, on:

- i. **Beach and shoreline stability:** potential for shoreline advance [accretion] or retreat [erosion]; impact on distribution of beach sediment and sand budget.
- ii. **Marine ecosystems:** e.g. bleaching of corals; impact on mangroves and other wetlands, seagrasses and coastal biodiversity.
- iii. **Hydrological characteristics and water resources** e.g. river flow and runoff; salinity intrusion into coastal aquifers; effects of phenomena such as El Niño Southern Oscillation.
- iv. **Food and nutrition: agriculture and fisheries:** e.g. impact of soil salinization and water availability on crop production; potential impact of climate change on critical fish habitats such as coral reefs, seagrasses and mangroves.

- v. **Settlement and infrastructure:** e.g. threat to main cities/towns and their populations, which are overwhelmingly coastal; implications for critical services, utilities and other infrastructure; economic and social ‘costs’ of adaptation [irrespective of whether the response involves protection, accommodation, retreat or relocation, abandonment, or any other strategy].
- vi. **Tourism** [effects will be both direct and indirect] e.g. due to beach erosion and coastal land loss; impact on infrastructure; ecosystem degradation; increasing threat of water scarcity; higher winter temperatures in main markets may also reduce the necessity to travel to Caribbean, etc.
- vii. **Human health implications,** if any: e.g. potential impact of water scarcity on sanitation; possibility of increasing incidence of vector-borne diseases such as dengue fever, which is temperature-, rainfall- and humidity-sensitive; increase in incidence of biotoxins such as ciguatera, associated with ocean warming and increased algal blooms in warm tropical waters, which can contaminate fish and shellfish.
- viii. **Other key concerns,** if any (specific to the country).

2.2. Identification of Priorities: While all the issues identified above will be significant concerns, some are likely to be assigned a higher priority than others, in an overall national context. The purpose of this exercise is to provide a tool, developed by the countries themselves, which can assist in making pragmatic choices in the allocation of resources for adaptation, especially in circumstances where such resources may be limited.

In this section therefore, countries are requested to attempt a *ranking* of the preceding issues/concerns, based on their perception of national priorities. In completing the ranking, countries should feel free to apply any combination of criteria which they deem to be appropriate to their own circumstances. It is suggested that the output from this task can be a simple matrix, such as the example offered below.

Example of Matrix for Ranking Issues by Magnitude and Significance

ISSUES/CONCERNS	MAGNITUDE			SIGNIFICANCE		
	High	Medium	Low	High	Medium	Low
Fisheries		✓				✓
Tourism	✓			✓		
Agriculture			✓			✓

Alternatively, countries may opt for any other appropriate form of ranking, which they find meaningful and convenient. For instance, a simple, ranked listing of the issues with very brief explanations (if desired), would suffice. One example of such a format is given below.

Example of a Ranked Listing of Issues

ISSUES	RANK	REASON(S)
Tourism	1	Highest single foreign exchange earner; greatest single contributor to GNP; employs 40% of labour force.
Hydrology and Water Resources	2	Resource close to limit of carrying

capacity; data suggest increasing frequency of drought; constraint on all economic and social sectors.

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Agriculture

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Not a significant activity on coast; few persons engaged in activity; marginal contributor to national agricultural output.

3.0. INSTITUTIONAL AND LEGAL ARRANGEMENTS FOR RESPONDING TO ISSUES

It is expected that the output from this section will be a summary of existing institutional and legal arrangements for environmental management in general and coastal management in particular. The summary will provide a national context within which appropriate institutional and legal interventions supportive of adaptation activities, will be designed.

- 3.1 Allocation of Responsibilities** (*de jure* and *de facto*), by Ministries/Departments, for coastal resources management matters. This may be presented as a table or list of primary coastal resources management activities, indicating the agency to which responsibility is assigned. An example of such a partial listing is provided below.

Example of Table Showing Allocation of Selected Coastal Management Responsibilities

COASTAL MANAGEMENT FUNCTION	AGENCY RESPONSIBLE	GOVERNMENT MINISTRY
Building Development Control Within Coastal Area	Town Planning Dept.	Finance and Planning
Regulation/Design/Construction of Civil Works	Engineering Dept.	Public Works
Protection/Management of Coral Reefs, Seagrasses and Mangroves	Fisheries Division	Agriculture
Sand Mining and Mineral Extraction	Geological Unit	Mines and Natural Resources
Water Quality Monitoring; Setting of Coastal Water Quality Standards	Public Health Inspectorate	Health and Environment
Enforcement/Marine Surveillance	Marine Division of Police; Coast Guard	Defense and Security

- 3.2 Legislation and Statutory Provisions:** As for 3.1 above, countries are invited to prepare a summary (table or list) of relevant, existing legislation governing coastal management issues. It is expected that the listing would at least include the title of the statute, a brief statement (1-2 sentences) of its objectives, and the name of the agency or Ministry responsible for enforcing provisions of the statute. Along with the output from 3.1 above, this summary will assist in the identification of areas of legislative and institutional overlap, gaps and other deficiencies which may hinder implementation of an effective policy framework, for responding to climate change.

- 3.3 Other Relevant Institutional Considerations** (if any): To the extent that it is deemed appropriate, countries may provide any additional information of an institutional nature, which would be helpful in the implementation process [e.g. relevant, international conventions to which the country is a signatory or has ratified; lack of capacity within departments to effectively fulfil their mandates, etc.].

4.0 TOWARDS AN ADAPTATION POLICY

In this section countries will begin the process of enunciating *general* or *guiding principles* which should inform the selection, design and implementation of climate change adaptation strategies. These guiding principles should logically emerge from the key national concerns identified in the preceding section. While the main objective is to establish general principles, countries are encouraged to identify *specific adaptation options* which would lessen the anticipated impacts of climate change on any (or all) of the sectors dealt with in section 2.0. In addition, countries will begin to identify opportunities and constraints resulting from global climate change.

Below are two examples which seek to differentiate between a general or guiding principle and a specific adaptation option. They are offered merely as guidance, and do not purport to have any significance to any specific country or sector within any country.

Example A: General or guiding principle relevant to beach and shoreline stability:

Activities such as beach sand mining and the destruction of coral reefs, which will enhance the threat of increased erosion posed by climate change and sea-level rise, should be strictly controlled and regulated.

Example B: Specific options for coping with increasing soil salinization and inundation in coastal area:

Where practicable and cost-effective, existing vegetation will be replaced by more salt-tolerant species (*halophytes*), and the substitution of mariculture for agriculture will be pursued.

- 4.1. **Guiding principles**, by issue (refer to section 2.1, i – vii, above). For each issue identified as constituting an area of national concern, list 2 or 3 guiding principles, which might usefully underpin a broad adaptation strategy to deal with this concern.
- 4.2. **Specific options**, by issue (refer to section 2.1, i – vii, above). For any or all issues included in 2.1, list some specific adaptation options which might be considered for implementation, taking relevant, local circumstances into account.
- 4.3. **Opportunities (if any) and constraints**: e.g. diversification of the tourism product with a focus on non-coastal assets (which may be threatened by climate change) may be considered an ‘opportunity’. On the other hand, the lack of trained coastal engineers and limited availability of capital might be definite ‘constraints’ to the implementation of certain coastal protection options.

5.0. SUMMARY AND CONCLUSIONS

It is suggested that this section might consist of two or three paragraphs which summarize the priority (top 3 or 4) concerns and proposes a few (2 or 3) key guiding principles which could form the core of the country’s adaptation policy.

The conclusion might also highlight any significant constraining factors which, in the country’s judgement, could impede the successful implementation of a policy framework for adaptation to climate change.