

# **Consultancy for Development and Design of an integrated National Adaptation Plans (NAP) for the Agriculture and Water Sectors**

## **Inception Report**

---

**BELIZE**

## Table of Contents

Acronyms and Abbreviations.....	4
1.0 Introduction and Background.....	5
1.1 Objective.....	5
1.2 Scope of Work.....	5
2.0 Proposed Approach and Work Plan.....	7
2.1 Methodology .....	9
3.0 Country summary of results and findings of desktop review .....	22
Country context .....	22
Socio-economic context .....	22
Bio-physical resources .....	22
Climate trends, projections and scenarios .....	23
Climate trends.....	23
Sectoral.....	24
Addressing Climate Change in Belize.....	26
Timeline history of development .....	26
Legislative and Regulatory Mechanisms .....	28
Institutional framework/governance structure .....	30
Gaps Identified.....	32
Relation and alignment with national development context .....	43
4.0 Work plan .....	49
5.0 Assumptions, Risks and Risk Mitigation .....	56
6.0 References.....	58
7.0 Annexes .....	59
Background.....	59
Objective.....	60
Scope of Work.....	60
Qualifications and Experience.....	61
Duration of Work .....	62
Location of Work.....	62
Expected Deliverable and Schedule.....	62
Institutional Arrangements .....	63
Reporting Requirements .....	63

## List of Tables

TABLE 1: SUMMARY OF CLIMATE CHANGE IMPACTS ON SECTORS OF THE BELIZEAN ECONOMY .....	26
TABLE 2: TIMELINE HISTORY OF PROGRESS TOWARDS ADDRESSING CLIMATE CHANGE IN BELIZE .....	28
TABLE 3: MINISTRIES, AGENCIES AND CLIMATE CHANGE MANAGEMENT FUNCTIONS .....	32
TABLE 4: CAPACITY ASSESSMENT OF CRITICAL FACTORS FOR ADDRESSING CLIMATE CHANGE IN BELIZE (J-CCCCP, 2016) .....	34
TABLE 5: RECOMMENDED ADAPTATION STRATEGIES FOR THE AGRICULTURE SECTOR .....	39
TABLE 6: ELEMENTS OF THE BELIZE FRAMEWORK FOR SUSTAINABLE DEVELOPMENT (GSDS 2015) .....	43

TABLE 7: WORK PLAN - DESIGN AND DEVELOPMENT OF BELIZE NAP .....	
48 TABLE 8: RISK MANAGEMENT PLAN FOR DEVELOPMENT OF THE NAP FOR BELIZE .....	52

## List of Figures

FIGURE 1: GENERALIZED NAP PLANNING PROCESS WITH SPECIFIC INSERTS FOR THE BELIZE NAP PROCESS (UNFCCC 2012) .....	
9 FIGURE 2: STEPS TO BE TAKEN TO DEVELOP THE M&E FRAMEWORK AND PLAN FOR THE NAP .....	15
FIGURE 3: SCHEMATIC FOR CONDUCT OF A CLIMATE RISK AND VULNERABILITY ASSESSMENT FOR THE BELIZE NAP DEVELOPMENT PROCESS .....	16
FIGURE 4: AIM TO ALIGN ADAPTATION OPTIONS WITH NATIONAL AND SUSTAINABLE DEVELOPMENT PLANS .....	20
FIGURE 5: INTERACTIONS BETWEEN CLIMATE CHANGE, VULNERABILITY, AND SUSTAINABLE DEVELOPMENT GOALS AND POLICIES .....	21
FIGURE 6: AVERAGE MONTHLY RAINFALL IN BELIZE SOURCE: NATIONAL METEOROLOGICAL SERVICE OF BELIZE, 2015 .....	24
FIGURE 7: GANTT CHART FOR NAP DEVELOPMENT FOR BELIZE .....	46

## List of Annexes

ANNEX 1: TERMS OF REFERENCES FOR THE BELIZE NAP.....	
55 ANNEX 2: MATRIX FOR STAKEHOLDER ANALYSIS .....	60
ANNEX 3: AIM OUTLINE FOR ALIGNMENT OF ADAPTATION OPTIONS WITH NATIONAL DEVELOPMENT .....	61

## Acronyms and Abbreviations

APAMO	Association of Protected Areas Management Organizations
BNCCC	Belize National Climate Change Committee
CC	Climate Change
CCA	Climate Change Adaptation
CCCCC	Caribbean Community Climate Change Center
DRM	Disaster Risk Management
FCPF	Forest Carbon Partnership Facility
GCC	Global Climate Change
GDP	Gross Domestic Product
GSDS	Growth and Sustainable Development Strategy
GoB	Government of Belize
ICA	Institutional Capacity Assessment
J-CCCP	Japan-Caribbean Climate Change Partnership
LDC	Least Developed Countries
LEG	Least Developed Countries Expert Group
MAFFESD	Ministry of Agriculture, Fisheries, Forestry, Environment and Sustainable Development
MCCA	Mainstreaming Climate Change Adaptation
M&E	Monitoring and Evaluation
NAMAs	Nationally Appropriate Mitigation Actions
NAPs	National Adaptation Plans
NCCO	National Climate Change Office
NCCPSAP	National Climate Change Policy Strategy and Action Plan
NEMO	National Emergency Management Organization
NFP	National Focal Point
OECS	Organization of Eastern Caribbean States
PACT	Protected Areas Conservation Trust
R-PP	Readiness Preparation proposal
PMU	Project Management Unit
PSIP	Public Sector Investment Programme
SIB	Statistical Institute of Belize
TOR	Terms of Reference
UNCSD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

## 1.0 Introduction and Background

The Japan-Caribbean Climate Change Partnership (J-CCCP) aims to support eight Caribbean countries in advancing the process of low-emission risk-resilient development by improving energy security, and integrating medium to long-term planning for adaptation to climate change. Interventions under the Project include supporting policy innovation through the development of a number of Nationally Appropriate Mitigation Actions (NAMAs) and National Adaptation Plans (NAPs) and implementing actual technology that is both low-emission and advances climate risk management, including demonstration in the target countries. The participating countries are Belize, the Commonwealth of Dominica, Grenada, the Republic of Guyana, Jamaica, St. Lucia, St. Vincent and the Grenadines, and the Republic of Suriname. The project is funded by the Government of Japan and is being implemented by the United Nations Development Program (UNDP), with UNDP Barbados & the OECS subregional office as lead agency.

Consequently, the UNDP, together with the Government of Japan, is providing assistance to these countries to support the integration of climate change considerations into their national and sectoral planning and budgeting processes, which are in line with the existing United Nations Framework Convention on Climate Change (UNFCCC) endorsed framework for NAPs. It is envisaged that this work will contribute to the regional effort towards the mainstreaming of adaptation actions into the development framework, support concrete actions for inclusion into national fiscal space and greater access to international climate finance for implementation of priority actions.

The J-CCCP encourages policy innovation through three outcomes:

1. Outcome 1: NAMAs and NAPs to promote alternative low-emission and climate-resilient technologies.
2. Outcomes 2: Adoption and implementation of mitigation and adaptation technologies.
3. Outcomes 3: Strengthened knowledge networks through shared South-South and North-South experiences. These should lead to Low Emission Climate Resilient Development. This activity to develop a NAP for Belize, in collaboration with the Government of Belize, (GoB) seeks to address Outcome 1.

### 1.1 Objective

The objective of this activity is to provide technical assistance to the relevant government counterparts in Belize on design and development of a NAP roadmap and an integrated NAP for the Agriculture and Water Sectors.

### 1.2 Scope of Work

The scope of work will include implementing activities in support of prioritizing climate change adaptation actions, developing a national adaptation roadmap to guide the integration and implementation of identified actions, as well as formulating an integrated NAP for the agriculture and water sectors for Belize. The work will be completed with

guidance from the GoB and relevant in-country stakeholders, and in close consultation with the J-CCCP Project Management Unit (PMU) within UNDP Barbados and the OECS sub-regional office, along with UNDP Belize. The process will be guided by the Least Developed Countries Expert Group (LEG) technical guidelines for NAP development published by the UNFCCC and will utilize lessons learned and produced by the NAP Global Network, among others.

In keeping with the UNFCCC Technical Guidelines for NAP development for LDCs, a five-step process has been designed for this activity. These are supported by additional project management and communication tasks, which will be outlined further. The five steps for NAP development for Belize, as outlined in the Terms of Reference (Annex I), will include:

#### A. Stocktaking and Gap analysis

Review the work conducted under the J-CCCP Baseline Assessment (2015) and any other previous studies and identify any relevant additional information needed for a complete in-country assessment of the NAP situation as it is related to the agriculture and water sectors. The stocktaking and gap analysis will also consider regional strategies and action plans related to adapting and building resilience to climate change, and the monitoring and evaluation framework associated with such strategies and action plans.

Areas for review will include, but not be limited to the following:

- a. Current climate and climate scenarios
- b. Existing sector plans, strategies and policies
- c. National capacities and resources (e.g. Information management systems, programmes, human resources and policies etc.) needed to engage in the NAP process
- d. Institutional framework for adaptation planning
- e. Barriers to planning, design and implementation of adaptation activities (e.g. systems, data, institutional and legislative frameworks, human capacity and expertise etc.)
- f. Sustainable development efforts most at risk from climate change
- g. Outline the gaps to be addressed based on analysis of the information collected including a review of relevant national policies and international commitments.
- h. Expected impact of climate change on social development, as well as issues related to social inequality and poverty
- i. Linkages between existing adaptation strategies and Disaster Risk Management activities
- j. Outline the gaps to be addressed based on analysis of the information collected

#### B. Identification of NAP mandate

- a. Through the process of stakeholder consultations, identify the needs and prioritize the gaps to be addressed
- b. Define the scope for the NAP process for the sector and the institutional framework for development and implementation based on the ranking of national and sector specific priorities.

#### C. Formulation of NAP strategy and roadmap

- a. Development of strategy document (roadmap) for the NAP process, which will outline the key stakeholders and their responsibilities as well as the strategic actions and sequential steps for development and implementation. This strategy will also outline potential donor agencies/ sources of funds to support climate adaptation programmes.

- b. Monitoring and Evaluation plan for the NAP process
  - c. Capacity Development Plan to address the needs and gaps within the identified sectors
- D. Undertake climate risk and vulnerability assessment
- a. Analyse current climate information to identify trends to support the planning processes
  - b. Using existing climate models, climate data and climate studies to define future climate risks and levels of uncertainty. Where necessary, local level resolution/ data capture will be undertaken to address information gaps.
  - c. Assess vulnerability to climate change at the sectoral and national levels
  - d. Rank identified climate risks and vulnerabilities and align them with appropriate adaptation options
- E. Development of National Adaptation Plan
- a. Identify scenarios and pathways for adaptation actions
  - b. Appraise, prioritise and rank identified adaptation options
  - c. Develop integrated National Adaptation Plan for the agriculture and water sectors for submission to national government for review and national approval
  - d. Validate draft document with relevant stakeholders and complete final NAP document.

## 2.0 Proposed Approach and Work Plan

The National Climate Change Policy, Strategy and Action Plan (2014) has defined a mandate for developing a NAP for Belize. The J-CCCP project is providing technical assistance towards development of the NAP, which is to also be guided by the UNFCCC NAP Technical Guidelines (LDC Expert Group 2012).

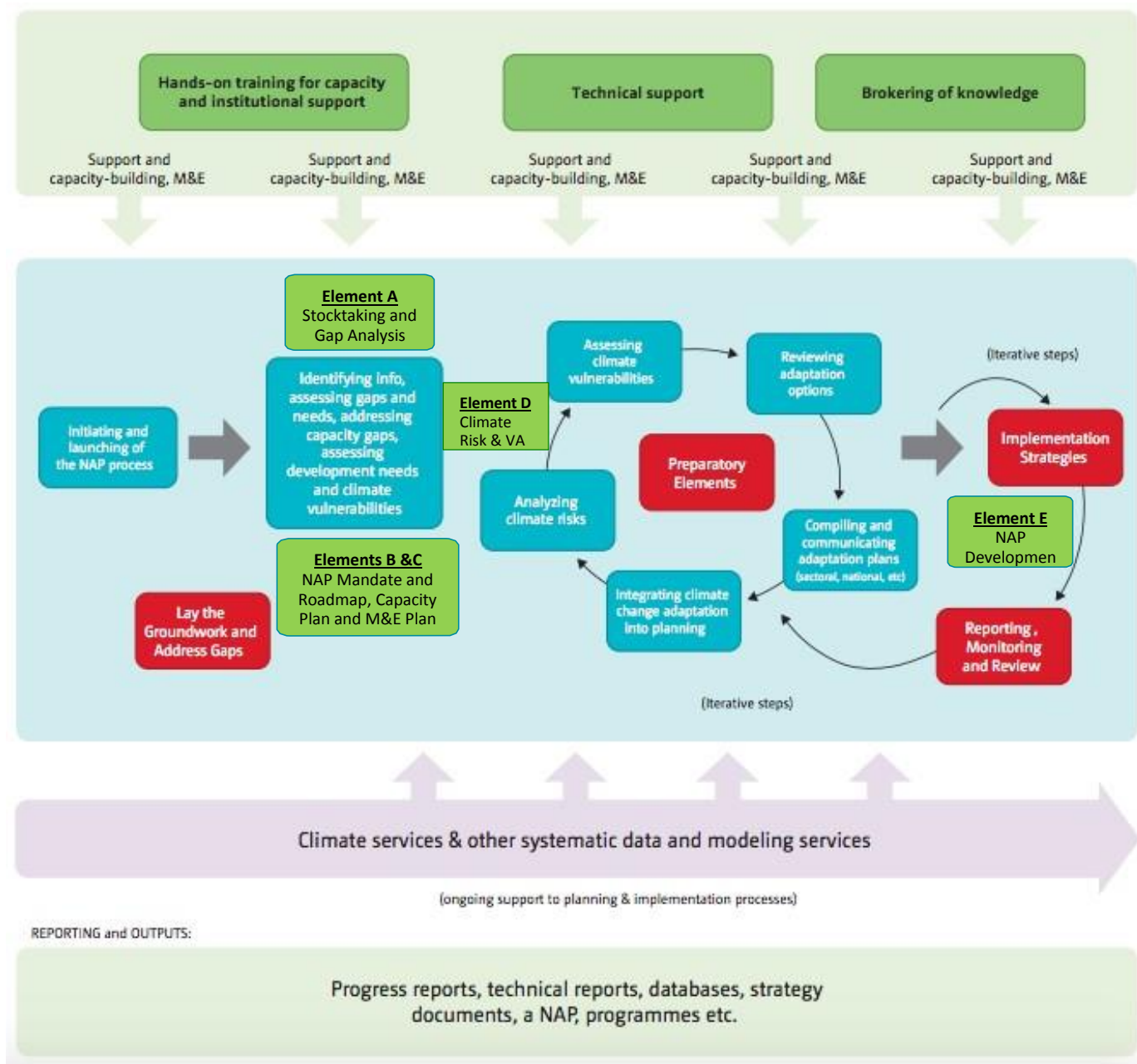
The NAP process as defined by these Guidelines is presented in Figure 1 and configured to highlight steps in the Belize process. This activity will focus attention on Elements A and B of the process, with some steps already in progress, and others to be conducted post this consultancy. These will be elaborated upon throughout the activity.

### **Goals of the National Climate Change Policy Strategy and Action Plan (2014)**

1. Guide the short, medium and long-term processes of adaptation and mitigation of Climate Change in accordance with national prospects for sustainable development in addition to regional and international commitments.
2. Ensure an integrated and well-coordinated approach to Climate Change adaptation and mitigation by fostering the development of appropriate administrative and legislative mechanisms in alignment with national sectoral policies and adaptation plans.
3. Provide guidance to mainstreaming along a low emission development pathway by focusing on the reduction of anthropogenic emissions of greenhouse gases.

**Figure 1: Generalized NAP Planning Process with specific inserts for the Belize NAP process (UNFCCC 2012)**





## 2.1 Methodology

The consultant will utilize a mixed-methods participatory approach for development of the NAP for Belize. This will involve a combination of documentary review and face-to-face consultations, in both individual and group settings (in workshops and focused group sessions). These are elaborated upon below and are based on the Deliverables defined by and contained within the Terms of Reference (Annex I).

The consultant will work closely with the UNDP J-CCCP project management unit (PMU), UNDP Belize, and key stakeholders within the GoB to ensure that all relevant data and information are collected and in the relevant format. Furthermore, it will be essential to seek feedback and validate outputs at each stage in the NAP development

process. The UNDP J-CCCP team, in particular the National Focal Point (NFP), will assist with liaison and logistical support in country for data and information collection and scheduling of consultations and other face-to-face interaction. Access to country data and information for the initial stocktaking phase will be important.

The activity includes the following tasks that are aligned to various milestones and deliverables, which we will approach as outlined below. Noteworthy is that the “due dates” for deliverables may require adjustments in light of delays encountered.

### **Milestone 1: Inception report (due on 1/30/2017)**

**Task 1: Review of pertinent project, country and regional documentation as well as international guidelines on NAP development** including the J-CCCP project document and updates, initial Belize Mission report, reports on climate trends and projections, vulnerability assessments at the sectoral and national levels, national development planning documents, broader national context documents as well as literature that provide context on regional developments and international obligations and responses. Section 6.0 provides the initial list of documents already shared with the consultant, which are under review. Mention is made of other important documents needed and this communication will be ongoing throughout the consultancy.

The initial desk review will allow for an understanding of achievements and gaps towards development of a NAP. It will also guide the consultant towards developing structured consultation and assessment instruments. The desk review will help to determine the potential challenges and obstacles and inform the development of a risk management plan for implementation. The review will also help to better understand the current state with development of the NAP; integration of climate change in national development; and critical issues that will have to be addressed. It will also help inform further requests for documentation and data. The review will guide development of an appropriate methodology for implementation of the project.

Section 3 of this Inception Report provides a summary of key findings from the initial literature review. These findings will help identify gaps and prepare next steps and will also be important in the determination of useful methods of interaction with stakeholders.

*Output of task 1 is a summary literature review and insight on efforts already completed towards development of the methodology and tools to be applied.*

**Task 2: Finalize the combined consultancy approach and implementation plan** that reflects:

- a. Consultant’s selection of supporting team members, their roles and responsibilities
- b. Tasks to be undertaken in each phase of the NAP development process
- c. Proposed timelines for tasks and steps in the process
- d. Tools to be applied at different stages
- e. Implementation schedule with Assumptions and Risks identified
- f. Risk Management Planning
- g. Detailed logistical and administrative requirements / needs for the assignment

Based on the review of the literature and contact sheets provided by the UNDP J-CCCP team, we will make a determination of which stakeholders to involve in different stages of the process. Critical to the NAP development process however, are the:

- National Climate Change Office (NCCO) and the Ministry of Agriculture, Fisheries, Forestry, Environment and Sustainable Development (MAFFESD)

- Belize National Climate Change Committee (BNCCC) and its sub-committees

Also critical for engagement are:

- Horizon 2030- Coordinating Unit – Policy and Planning Unit at the Ministry of Economic Development, Petroleum, Investment, Trade and Commerce
- Growth and Sustainable Development Strategy (GSDS 2016-2019) - Ministry of Agriculture and Fisheries, Forestry, Environment and Sustainable Development
- Ministry of Agriculture and Fisheries, Forestry, Environment and Sustainable Development and its departments and agencies
- Ministry of Finance, Public Service, Energy and Public Utilities
- Ministry of Natural Resources
- National Meteorological Service
- Caribbean Community Climate Change Centre (CCCCC)

The draft consultation instruments will be prepared following a more in-depth review of documents and will be used to fill any identified gaps in data and information needed for the development of the NAP. These will consist mostly of open-ended questions that could provide insight on how the phases following NAP development will or could be rolled out. Coupled with these instruments, the consultant will prepare consultation schedules for each phase, to be reviewed and approved by the PMU and the GoB. It is being proposed that the GoB designate a Focal Point to lead on these reviews. This will help to minimize delays and maintain efficiency in the various phases.

Country context data and information will be sought from the Baseline Assessment (2016), supplemented by the Annual Reports of the Statistical Institute of Belize (SIB), among others.

*Output of task 2 is the draft Inception Report. This will be submitted to UNCD J-CCCP PMU. Approval of the Inception Report will be sought on submission in a desired 2-weeks review and turnaround time.*

## **Milestone 2: Stocktaking and Gap Analysis Report (due 4/28/2017)**

Milestone 2 is the second step in Element A of the NAP development process (Figure 1). Its objective is to identify available information on climate change impacts, vulnerability and adaptation and assess gaps and needs of the enabling environment for the NAP process. The TORs have outlined ten important elements to be addressed.

These are presented in Box 1. One other important element of the Stocktaking exercise is a stakeholder analysis, which will be required for Milestone 3. The kinds of questions to be probed include:

- Where do we stand regarding effective short- and long-term adaptation activities?

### **Box 1: Key elements to be assessed in the stocktaking and gap analysis phase**

- a. Current climate and climate scenarios
- b. Existing sector plans strategies and policies
- c. National capacities and resources (e.g. Information management systems, programmes, human resources and policies etc.) needed to engage in the NAP process
- d. Institutional framework for adaptation planning
- e. Barriers to planning, design and implementation of adaptation activities (e.g. systems, data, institutional and legislative frameworks, human capacity and expertise etc.)
- f. Sustainable development efforts most at risk from climate change
- g. Outline the gaps to be addressed based on analysis of the information collected including a review of relevant national policies and international commitments.
- h. Expected impact of climate change on social development, as well as issues related to social inequality and poverty
- i. Linkages between existing adaptation strategies and Disaster Risk Management activities
- j. Outline the gaps to be addressed based on analysis of the information collected

- What data and knowledge are available to assess current and future climate risks, vulnerability and adaptation?
- How can the storage and management of this data and knowledge best be coordinated?
- What gaps can be identified regarding the capacity, adequacy of data and information, and required resources to engage in the NAP process?
- What barriers exist to effectively plan for, design and implement adaptation?
- Who are the key stakeholders to be involved in the NAP development process and what are their mandates? What would be their proposed roles and responsibilities? What are the impediments to carrying out their responsibilities?
- How are themes of gender and youth being addressed in climate change efforts?
- What are the ways in which gender and youth are considered and incorporated in climate change adaptation planning and implementation?
- Is there a Knowledge, Attitudes and Perception (KAP) for the Public Education and Outreach strategy for climate change? How is adaptation treated with and what is the status of KAP for key target stakeholder groups?

These questions, among other pertinent ones, will be addressed through a two-pronged approach, outlined in Tasks I below.

### **Task I: Review documentation and conduct stakeholder consultation**

Step I.1 An in-depth documentation review will provide context and highlight the key issues and challenges to NAP development and more broadly to climate change adaptation in Belize, both at the national and sectoral levels. It will be important to also review documents that provide context on the nexus between national development and climate change. It will also focus attention on the linkages between climate change adaptation and disaster risk management as well as those between priority sectors for the NAP (agriculture and water) and other priority drivers of development, such as tourism. It will be important to understand the justification for selection of the two priority sectors, including any legislative requirements. Regional strategies will also be explored for alignment and synergies. A stakeholder analysis will also be undertaken, using available information on relevant stakeholders. Annex 2 provides a matrix to be used for analysis. This will help in a determination of stakeholders to involve in the process as well as in establishing an institutional framework for the NAP.

*Other critical document needs include detailed back-end data collected and analyzed for the Baseline Assessment Report (such as the Excel sheet used in the SNAP assessment) and Horizon 2030 Medium Term Framework.*

Step I.2. Stakeholder consultation via a multi-stakeholder meeting and individual face-to-face semi-structured interviews, supplemented by telephone and Skype meetings.

An initiation meeting will be held with key stakeholders to: introduce the consultant; present the approach to development of the NAP; discuss key needs and agree on roles and responsibilities of key stakeholders. Guided by the results of Step I.1, the consultant will design and administer an interview questionnaire to capture outstanding information from the documentary review. In order to hold highly productive meetings, the guided questions will be shared with relevant stakeholders prior to the meetings to allow for preparation. Post-interview sessions may be followed with telephone and Skype discussions, where warranted. These steps will help fill gaps in information from Step I.1. The contents of the questionnaire will be determined by the findings of the documentary review.

Step I.3 Conduct a Global Climate Change Institutional Capacity Assessment (ICA). The GCC ICA was developed by USAID (July 2015) and is a participatory tool<sup>1</sup> used to assess capacity to address climate change. The tool focuses on five key areas including: (i) Governance; (ii) Information, Data & Analysis; (iii) Strategic Planning; (iv) Resources; and (v) Implementation, Monitoring & Evaluation & Knowledge Management. The ICA will be conducted with the

---

<sup>1</sup> <https://www.climatelinks.org/resources/global-climate-change-institutional-capacityassessment>

NCCO, a central entity to the NAP process, along with personnel from other relevant departments of the parent Ministry that provides support to the NCCO. The ICA results will help complete the gap analysis for overall coordination, implementation and reporting by the NCCO, a central entity to the process. The product of this exercise will be a baseline ICA, which will provide information on critical capacity development needs for the NCCO. This tool can be used at regular intervals to determine change in capacity of the NCCO to address climate change issues. The process will allow for capacity building for the NCCO to self-administer the tool in future iterations. The ICA will be conducted over a one-day duration.

*The outputs of Task 1 will be an initial outline of the current state of play for adaptation planning and implementation, including the climate trends, projections and scenarios; existing policies, programmes, projects, and plans; governance structure and institutional arrangements; barriers to adaptation planning and implementation and alignment with the national sustainable development agenda; capacity gaps and potential actions, monitoring and evaluation needs and a stakeholder analysis.*

**Task 2: Drafting and Finalization of the Stocktaking and Gap Analysis Report:** The results of Task 1 will be analysed to produce the draft Stocktaking and Gap Analysis Report. A final report will be produced based on feedback from the J-CCCP PMU and in-country stakeholders.

*Output of Task 2 is the Stocktaking and Gap Analysis Report*

### **Milestone 3: Identification of NAP mandate and formulation of NAP strategy and roadmap (TOR Steps 2-3)**

#### **Step 2: Identification of NAP mandate**

The Stocktaking and Gap Analysis Report will provide findings of major gaps and challenges. During the conduct of the Baseline Assessment in 2016, a gap analysis was conducted using the SNAP tool. Gaps were prioritized by stakeholders and the Baseline Assessment Report provides a detailed account of the process, stakeholders involved and the results. The GCC ICA conducted with the NCCO, through this consultancy, will also be incorporated in the findings. The consultant does not wish to perpetuate consultation fatigue with stakeholders. Rather, in a workshop setting, these would be validated and confirmed. The workshop will be used, in part, to commence development of the monitoring and evaluation and capacity development plans.

**Task 1: Review of documentation including the Baseline Assessment Report (2016)** and other documents and collate key findings that will be useful for Milestone 3. There is a comprehensive J-CCCP Baseline Report (2016) for Belize that provides a good foundation for the work to be conducted under this consultancy. For example, a capacity assessment was conducted with stakeholders and capacity gaps prioritized. The consultant will build on this work, complemented by other documents such as the Growth and Sustainable Development Strategy (2015), which also outlines a capacity development plan at the national level. Efforts will be made to align the NAP with the GSDS as well as Horizon 2030.

*Outputs of Task 1 will be an initial design of NAP mandate and roadmap, outline of capacity and M&E gaps as well as preparation of tools to be used for stakeholder consultations. These include individual stakeholder interview guides and workshop tools.*

#### **Task 2: Conduct in-country stakeholder engagements**

##### **Step 2.1 Prepare for and host a 2-days workshop to:**



## I. Achieve consensus on elements of the mandate and road map

- a. Purpose: To establish clear responsibilities for government agencies and all other stakeholders;
- b. To specify key actions, milestones and outputs of the whole NAP process over the next planning cycle (typically 5 years)
- c. To finalize the scope of the NAP process and the institutional framework for development; and
- d. implementation based on national and sector specific priorities.

## II. Prepare key initial elements of the capacity development and monitoring and evaluation plans.

### Step 2.2 Conduct additional individual consultations as needed following on the workshop

The consultant will carry out any additional follow up meetings with key stakeholders to complete the data gathering phase for Milestone 3.

### **Task 3. Draft NAP Mandate, Road Map and Strategy Document as well as commence preparation of the Capacity Building and Monitoring and Evaluation Plans**

The consultant will utilize all gathered data and information and results of Tasks 1-2 to draft the key documents. The draft NAP mandate and roadmap document will be based on information collected and agreements made with stakeholders and will be delivered for review and feedback by J-CCCP PMU and GoB stakeholders.

This phase of the process will be utilized to commence drafting of the capacity development and monitoring and evaluation plans, but development of both documents will continue to the final phase of the consultancy. Both documents will be finalized as annexes to the NAP in the final stage of the process.

#### Capacity Development Plan

The draft capacity development plan for the NAP will address, among other things, capacity of the key stakeholders who will coordinate and monitor progress on the implementation of the NAP. The capacity plan will focus attention on capacity needed to implement the adaptation plans for the agriculture and water sectors as well as capacity development of key stakeholders who will coordinate implementation and monitor progress on the implementation of the NAP. To complete the plan, activities will continue to the final Milestone.

#### Monitoring and Evaluation Plan

The M&E plan supports the NAP process by providing a framework within which the monitoring of climate change impacts, financial resources, and adaptation performance, as well as monitoring and evaluating adaptation results can provide valuable information for adaptation planning and decision-making. It is intended that the M&E systems for adaptation will guide decision makers to be targeted in resource allocation, improve accountability, help steer adaptation plans and activities and foster learning on adaptation. The monitoring and evaluation plan will include a Knowledge Management component. The knowledge management component, will be developed collaboratively to create the conditions for NAP success by: facilitating collaboration across core NAP actors (including with external stakeholders); the sharing of lessons learnt, innovations, and the channelling of performance information back into the strategy to inform policy development, budget allocations, and programme design and management The

#### **Box 2: Proposed features of the NAP mandate include:**

- ✚ Designation of a leader (person and institution) for the NAP process
- ✚ Elaboration of specific steps to be taken to implement the mandate
- ✚ Budget for the NAP process, or an indication of allocated national resources and plans for raising additional funds;
- ✚ Indicative timeline of key milestones and outputs of the NAP process;
- ✚ Instructions on how the formal outputs would be processed and approved
- ✚ Reporting instructions on the outcomes of the NAP process over time for each key stakeholder group (ministries and other entities)

development of the M&E plan will commence in this phase but will continue into the final Milestone: NAP development.

Following the definition of the focal goals of the NAP in Milestone 5, the consultant will employ a six-step process to develop the M&E plan (Figure 2).

#### *M&E Plan Development Steps for Milestone 3*

Step 1 – Conduct a needs assessment through secondary data review and consultations with the agencies that will be involved in the NAP process. A survey will be administered with key agency leads. The survey will be issued to distinct groups of NAP stakeholders representing different institutions and levels of the M&E systems. This will be done in a workshop setting with follow up electronically if necessary.

Step 2 – Develop adaptation hypothesis (based on the emerging NAP adaptation goals linked to strategic adaptation outcomes/ change that is being assessed through NAP interventions and critical success factors that must be in place for the proposed changes to be achieved). Participatory workshop sessions will be used to refine the adaptation hypothesis.

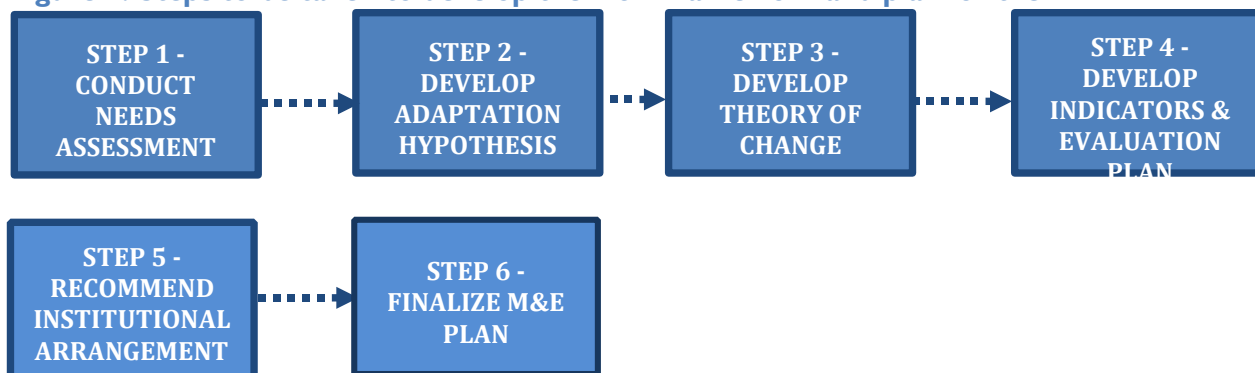
Step 3 – Develop the NAP's theory of change for adaptation - The goal and the strategic outcomes will be used to prepare a change process that will serve as the core of the NAP's M&E plan.

#### *M&E Plan Development Steps for Milestone 5*

Step 4 – Identification and development of indicators & evaluation strategy - Generate a list of adaptation and resilience indicators that capture inputs, outputs, outcomes and impact (from the short to the long-term). Step 5 – Recommend institutional arrangements - based on Climate Risk Management scorecard for participating agencies and stakeholder mapping.

Step 6 – Finalize the M&E plan – reflecting NAP –related indicators and collaborative learning & evaluation questions, description of data collection, management and analysis mechanisms, and implementation timelines

**Figure 2: Steps to be taken to develop the M&E framework and plan for the NAP**

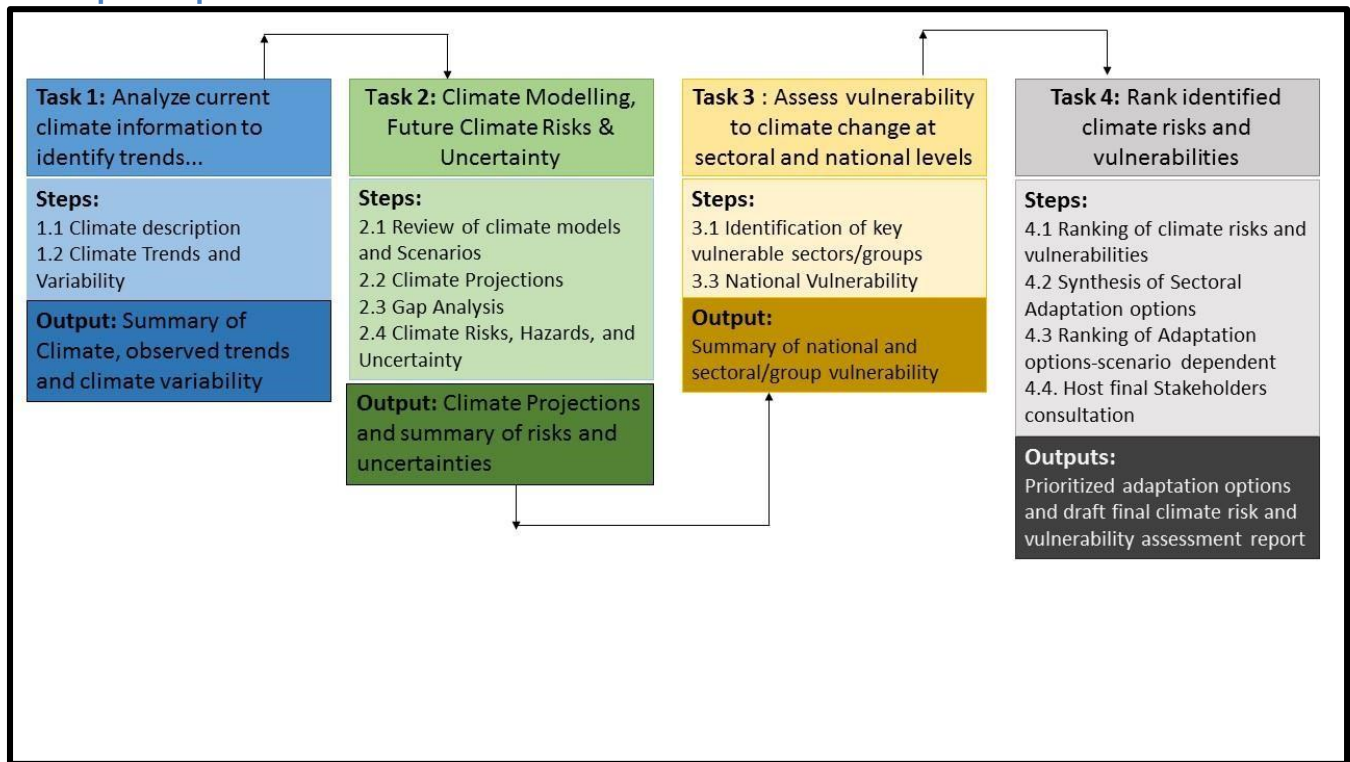


Outputs of Task 3 and Milestone 3 are the NAP mandate and roadmap, draft capacity development plan and monitoring and evaluation plan

#### **Milestone 4: Climate Risk and Vulnerability Assessment Report (TOR Step 4)**

The tasks associated with this Milestone will be undertaken in parallel with those for Milestone 3. This section outlines the steps to be undertaken in the conduct of a climate risk and vulnerability assessment for Belize. Ultimately, the assessment will form inform the NAP and therefore is critical to its success. There are four specific tasks to be carried out for completion of the climate risk and vulnerability assessment, which are aligned to the United Nations Framework Convention on Climate Change (UNFCCC) NAP Technical Guidelines. The schematic (Figure 3) depicts the sequential ordering. The steps outlined below provide activities to be undertaken for each task and the expected outputs.

**Figure 3: Schematic for conduct of a climate risk and vulnerability assessment for the Belize NAP development process**



### **Task 1: Analyse current climate information to identify trends to support the planning processes**

**Step 1.1 Climate description:** Through review of authoritative literature, provide information on the general climate of Belize (1960-1990) as demonstrated by weather parameters including but not limited to- rainfall (rainy and dry seasons) and temperature. This will present the baseline against which changes (observed and projected) can be measured. The literature will include:

- Belize's Third National Communications to the UNFCCC, 2015
- National Climate Change Policy, Strategy and Action Plan to Address Climate Change in Belize, 2014
- Vulnerability and Assessment Report: "Enhancing Belize's Resilience to Adapt to the Effects of Climate Change, 2014

**Step 1.2 Climate Trends and Variability:** Review the current state of knowledge related to observed climate variability, and trends for Belize as manifested in temperature and rainfall among other parameters. Climate trends that can support the planning and decision-making will also be elaborated where possible. Data and information will be obtained from several reports including those listed above and others such as:

- Mainstreaming Climate Change into Belize's Development Process- A succinct assessment of climate change risks and adaptation opportunities for the Tourism, Coastal Zone and Fisheries Strategies, 2015
- National Climate Resilience Investment Plan (NCRIP), 2013

*Output for task 1: Textual and tabular summary of the climate of Belize, observed trends and climate variability.*



**Task 2: Using existing climate models, climate data and climate studies, define future climate risks and levels of uncertainty. Where necessary local level resolution/ data capture may be undertaken to address information gaps**

Step 2.1: Review of Models and Scenarios: This will provide a description of the climate models used, resolution of data as well as the scenarios used for making climate projections. Downscaling has been done to 25km resolution using the PRECIS model. This was used in the development of the NCCPSAP (2014).

Step 2.2: Climate projections for Belize: a detailed examination of the projected changes relative to baseline (1960/1990) and how the future climate will differ from the present. Implications of these changes will also be expounded

Step 2.3: Gap Analysis: including details of missing data, new considerations not included in previous modelling work, (smaller resolution modelling, new scenarios including use of Representative Concentration Pathways (RCPs)).

Sept 2.4: Articulation of Climate Risks and Hazards, and Uncertainty

Sources of information: these will include *inter alia* the following literature:

- National Climate Resilience Investment Plan (NCRIP), 2013
- Belize's Third National Communications to the UNFCCC, 2015
- National Climate Change Policy, Strategy and Action Plan to Address Climate Change in Belize, 2014
- Vulnerability and Assessment Report: "Enhancing Belize's Resilience to Adapt to the Effects of Climate Change, 2014

*Outputs for task 2: Climate projections for Belize and summary of climate risks, hazards and uncertainties*

**Task 3: Assess vulnerability to climate change at the sectoral and national levels**

Step 3.1 Identification of Key vulnerable sectors/groups: based on perusal of reports, studies and national documents, liaison with key sector representatives, provide an account of key sectors and groups that are vulnerable to climate change. This will take into consideration social, economic and physical aspects of vulnerability, including issues of gender and poverty.

Step 3.2: National Vulnerability: an assessment of how sectoral vulnerability contribute to national vulnerability and links between both levels.

*Output for task 3: Summary of national vulnerability and ranked vulnerable groups and sectors.*

**Task 4: Rank identified climate risks and vulnerabilities and align them with appropriate adaptation options**

Step 4.1: Ranking of Climate Risks and Vulnerabilities (including key sectors, and groups): Ranking will be based on consensus of key stakeholders on three risk categories: The Probability of a given hazard, the likelihood of impact occurrence, and the magnitude of the consequence (UNFCCC, 2012).

- The probability of a given climate hazard: High, Medium, Low
- The Likelihood of impact occurrence: Virtually Certain, High, Moderate, Low

- Magnitude of the Consequence: considerations include: Internal Operations, Capital and operating costs, Number of People Impacted, Public Health, Economy, Environment

Step 4.2 Synthesis of Sectoral Adaptation options: a harmonized compilation of sectoral adaptation options, which collectively improve national climate resilience and enhance climate adaptation.

Step 4.3 Ranking of adaptation options: based on available future scenarios (at the national and regional levels) rank adaptation options through consensus and consultations with key stakeholders. Considerations to include feasibility, costs/benefits, and urgency of actions.

Step 4.4 Costings for the prioritized adaptation actions: will be determined and a financing strategy developed that outlines existing and future sources of financing to be pursued. Sources of financing to be given consideration include GoB budgetary allocation, external bi-lateral and multi-lateral and other international sources of funding, among others.

Step 4.5 Host final sector Stakeholders: to gain initial consensus on ranking of adaptation options and to establish the Goal of the NAP (this workshop session is being combined with Task 1 for Milestone 5).

Step 4.6 Draft Climate Risk and Vulnerability Assessment Report for feedback by J-CCCP and GoB stakeholders.

Step 4.7 Finalize Climate Risk and Vulnerability Assessment Report based on feedback from J-CCCP and GoB stakeholders.

Sources of Information will include:

- National Climate Change Policy, Strategy and Action Plan to Address Climate Change in Belize, 2014;
- Mainstreaming Climate Change into Belize's Development Process- A succinct assessment of climate change risks and adaptation opportunities for the Tourism, Coastal Zone and Fisheries Strategies, 2015
- Growth and Sustainable Development Strategy for Belize, 2015
- Vulnerability and Assessment Report: "Enhancing Belize's Resilience to Adapt to the Effects of Climate Change, 2014
- National Adaptation Strategy to Address Climate Change in the Agriculture Sector in Belize, 2015
- Analysing Vulnerability of the Coastal Tourism Sector, 2014
- National Integrated Waster Resources Management Policy (Including Climate Change) for Belize, 2008
- National Adaptation Strategy to address climate change in the water sector in Belize (Strategy and Action Plan), 2009

*Outputs for task 4: Prioritized adaptation options costed and Draft and final Climate Risk and Vulnerability Assessment Report*

## **Milestone 5: National Adaptation Plan produced (TOR Step 5)**

### **Task 1: Conduct stakeholder consultations to finalize implementation plan for the NAP**

Step 1.1 Hold a stakeholder workshop for implementation planning. Validation of the prioritized adaptation options for the two priority sectors (Step 4.5 of the Vulnerability assessment) is a first step in a broader workshop that will incorporate the adaptation actions with other key actions for the NAP, inclusive of capacity development,

monitoring and evaluation, public awareness and outreach, financing, among others. Using a prioritization tool, the stakeholders will rank implementation priority for each action. In the first instance, these are to be defined for a *10-year NAP with a 5-year implementation plan*. These will be ranked by:

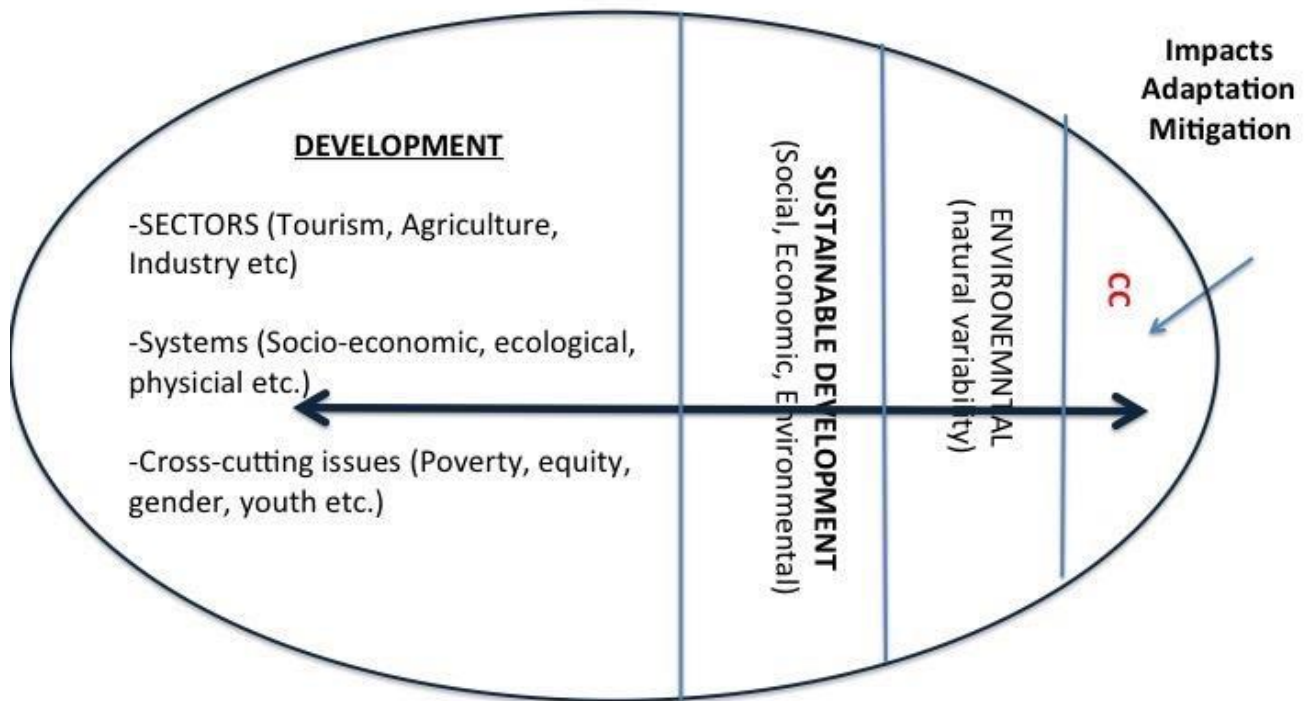
- Level of urgency (Low (1), Medium (3), High (5))
- Level of impact (Low (1), Medium (3), High (5))
- Availability of resources (Low (1), Medium (3), High (5))
- Net systemic contribution (including as a critical success factor for national sustainable development and/or a necessary condition) (Low (1), Medium (3), High (5))

The next step is to define the NAP Goal. The development of a NAP goal will be imperative and will be used to further develop the M&E plan and finalize capacity development actions. Importantly, it will also include considerations for financing the NAP, that is, identification of existing sources of financing, potential sources that could be tapped and future sources that could be given consideration. The workshop will draft the implementation plan for the NAP, including indicative timelines, responsible stakeholders (lead and supporting), outputs and key resource needs. Financing will define current and future potential financing support (budgetary allocation, International Development Partners, other international climate financing). It will also develop the capacity development plan.

Step 1.2 Align adaptation options with national development plans, GSDS and Horizon 2030. An Action Impact Matrix (AIM) will be utilized that links climate change adaptation priorities to national development (Figure 4). The consultant will carry out preparatory work for this and will use the workshop session to achieve consensus on the alignment. Climate change adaptation measures ultimately must be implemented by Belize, and will receive attention from decision makers only if they are successfully integrated into the national sustainable development (SD) strategy. Initial review of the GSDS (2015-2018) indicates that climate change adaptation has already been given consideration, and this positive must be built on as the NAP process develops more specific adaptation actions. To facilitate this process, we will use the AIM methodology to better understand interactions among three key elements, at the country level:

- (a) national development policies and goals;
- (b) key vulnerability and adaptation (VA) areas; and (c)  
climate change adaptation.

**Figure 4: AIM to align adaptation options with national and sustainable development plans**



The AIM approach analyses key economic-environmental-social interactions to identify potential barriers to making development more sustainable (MDMS) - including climate change. It also helps to determine the priority macro policies and strategies in economic, environmental and social spheres that facilitate the implementation of climate change adaptation and mitigation to overcome the effects of climate change. Thus, such a matrix helps to promote an integrated view, meshing both development decisions and climate change effects.

The preliminary matrix identifies broad relationships, provides a qualitative idea of the magnitudes of the key interactions, helps to prioritize the most important links, and facilitates integration of climate change adaptation responses within the overall national sustainable development strategy (Figure 5).

The AIM methodology relies on a fully participative stakeholder exercise to generate the AIM itself. Experts are drawn from government, academia, civil society and the private sector, which represent various disciplines and sectors relevant to both sustainable development and climate change. In the exercise, they will interact intensively to build a preliminary AIM using the matrices presented in Annex 3. This participative process is as important as the product (i.e., the AIM), since important synergies and cooperative team-building activities emerge. The collaboration helps participants to better understand opposing viewpoints, resolves conflicts, and ultimately facilitates implementation of agreed policy remedies. On subsequent occasions, the same group can do the updating or fine-tuning of the initial AIM within a few hours, since they are already conversant with the methodology.

**Figure 5: Interactions between climate change, vulnerability, and sustainable development goals and policies**



### Step 1.3 Conduct final stakeholder consultations to complete data and information gathering

During the field Mission, the consultant will meet with key stakeholders to wrap up data and information gathering for drafting the NAP.

## **Task 2: Develop the Integrated National Adaptation Plan**

Step 1.1 Draft NAP document The NAP for the agriculture and water sectors will be drafted for submission to the Government of Belize and other stakeholders for review and national approval. The consultant will collate and finalize all agreements and plans made through each of the previous steps as well as incorporate additional elements to be addressed in moving the NAP to the next steps of communication and implementation, led by the GoB. Supporting attachments for the NAP include: a financing strategy, with indicative costings; a capacity development plan; a monitoring and evaluation plan inclusive of knowledge management. The draft NAP will be submitted to UNDP for further circulation to the GoB stakeholders for their review.

Step 1.2 Conduct NAP validation workshop with key stakeholders. The consultant will, in collaboration with UNDP J-CCCP, host a validation workshop to seek feedback and agreement from stakeholders on the final NAP document. It is understood that the NAP document is not a static document and as such, in an adaptive way, is to be revised from time to time. This emphasizes the importance of monitoring and evaluation throughout implementation.

*Output for Task 2: Draft NAP document and supporting elements for Belize*

## **Milestone 6: Final NAP**

### **Task 1 Finalize NAP document**

Based on stakeholder feedback the consultant will finalize the NAP document for submission to UNDP JCCCP.

*Output for Task 1: Draft Final NAP document for Belize*

## **Milestone 7: Monthly Reports**

### **Task 1: Develop and submit regular progress reports**

The consultant will submit regular reports that capture progress made on implementation of the activity, challenges encountered, risk assessment and plan modification. Reports will be delivered to the J-CCCP PMU on an agreed upon schedule.

*Output for Task 1 Implementation Progress Reports*

### 3.0 Country summary of results and findings of desktop review

#### Country context

Belize is a relatively small independent country situated on the east coast of Central America, bounded on the north by Mexico, on the south and west by Guatemala and on the East by the Caribbean Sea. Belize forms a portion of the Yucatan Peninsula lying between 15°45' and 18°30' north latitude, and 87°30' and 89°15' west longitude. The national territory covers a total area of 46,620 square kilometres (18,000 square miles) with a land area of approximately 22,967 square kilometres (8,867 square miles), including 280 kilometres of coastland. Belize is bounded on the north, west and south by Mexico and Guatemala respectively and on the east by the Caribbean Sea. The mainland makes up 95 percent of the territory and 5 percent is represented by more than 1,060 small islands or Cays. The capital of the country is the City of Belmopan, situated in the central part of the country, but Belize City is the largest urban agglomeration with approximately 66,000 inhabitants. There are six administrative districts in Belize: Belize, Cayo, Corozal, Orange Walk, Stann Creek and Toledo.

Belize is characterized by both ethnic and cultural diversity. The 2010 population census indicates a national population size of 312,698. The annual average growth rate of the Belizean population between 2000 and 2010 is stated as being 2.65 percent. Approximately 44 percent of Belize's population is classified as urban, 49.5 percent women, 41.3 percent poor (15.8 percent indigent) and 35.6 percent as being under the age of 15. Children and adolescents comprised 43.86 percent of the total population. A substantial proportion of residents live in Belize District (29.99 percent) followed by Cayo (23.91 percent), and Orange Walk (15 percent); Toledo is the least populated district with a reported 30,100 residents (9.34 percent). Belize's long, low-lying coastline accommodates approximately 35 percent of this total in densely populated urban areas.

#### Socio-economic context

Belize is categorized as a small, upper-middle income country with a population of about 350,000 and a per capita income of US\$ 6,130 (World Bank Atlas Method) in 2015. Belize has undergone significant economic transformation over the last two decades, mainly due to the growing tourism industry and to commercial oil discovery in 2005. The economy is mainly dependent on agriculture trade and tourism (aggregate foreign trade accounts for almost 80% of the GDP), as the main sources of income and employment. Tourism employs 28 % of the population and represents 21 percent of GDP while agriculture employs 10 percent of the labour force and contributes 13 percent of GDP, mostly through exports of sugar and tropical fruits.

#### Bio-physical resources

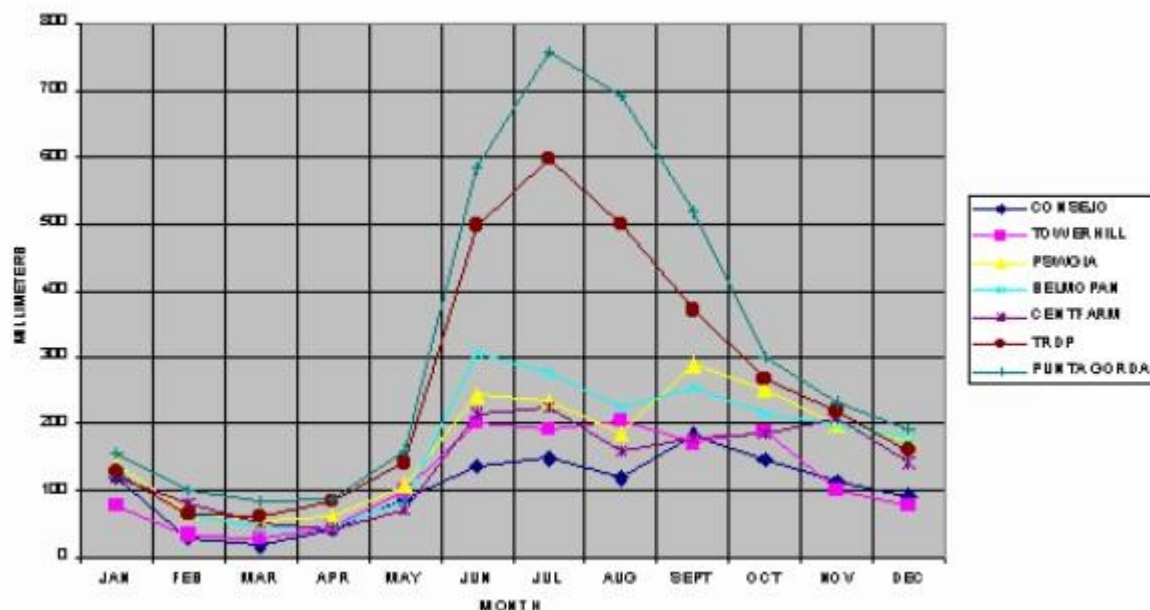
The Maya Mountains found in Belize cover the lower half of the country. Other natural features such as basins and plateaus also dominate much of the country, except for the areas where the coastal plains are located. Much of Belize (69%) remains under natural vegetation while 39.1% of the terrestrial area is made up of protected forests (UNCSD, 2012). The country also hosts the second longest barrier reef in the world, second to Australia's Great Barrier Reef. Belize's reef is the longest in the western hemisphere and is a paradise for divers and marine wildlife. Belize is divided into the following six (6) water basin regions: The Northern Watershed Region, the North-eastern, the Central, the South-eastern, the Southwestern and the Southern Watershed Region. There are one hundred and three (103) protected areas in Belize and these include all the statutory sites, private protected areas and archaeological reserves that are recognized as being part of the national system.

## Climate trends, projections and scenarios

### Climate trends

The climate in Belize can be defined by two sets of overlapping seasons characterized by temperature and precipitation. The cooler season (December - February), and the warmer season which includes the remaining months of the year. The second set of season is the dry period (December - April) and the wet period (May - November). The rainy season brings approximately 60 inches (1524 millimetre) of rain in the north to 160 inches (4064 millimetre) of rain in the south (Third National Communication, 2015). Rainfall varies from year to year in many areas, except in the Southern parts of the country where the annual rainfall average is consistent. The heaviest amount of rainfall is usually expected in June or early July and is punctuated by a break in late July or August; while the dry season occurs from November to May (Figure 6). The process of changing from dry to wet seasons can be considered as being gradual with a cool transition from November to February and a warm transition from March to May.

**Figure 6: Average Monthly Rainfall in Belize**



**Source: National Meteorological Service of Belize, 2015**

The key impacts of Climate Change in Belize are the rising sea level, changes in weather patterns, possibly resulting in increasing intensity, size and duration of storms and other such catastrophic events, and flooding, and anomalies in precipitation.

**Temperature** - According to the UNDP Country Profiles studies, an increase in air temperature ranging from 2°C - 4°C is projected by 2100 for Belize. Modelling scenarios undertaken in the preparation of the third national communication (both the ECHAM5 and HadCM3Q11) consistently project a two to four-degree increase in temperature (°C) for all Districts of Belize and for all seasons in the future (2060-2069) compared to the present (1961-1990). Mean monthly maximum temperatures are projected to increase between 0 – 1.4 °C during the decade of the 2020s over the 1961-1990 values. In the 2030s, largest increases of 1.2 – 2.2 °C are projected for the cooler season. In the remainder of the year (March – October), cooler mean maximum temperatures are projected for the western Toledo, Cayo, Orange Walk, with the largest reduction of -0.5 to -1.5°C in the western section of the Cayo District, while increased values of 0.5 – 1.5 °C cover the eastern half of the country.

**Rainfall** - Similarly a general decrease in annual rainfall of about 10 percent is projected by 2100. The models generally project an overall decrease in seasonal rainfall in all seasons in the future (2060-2069) compared to the present (1961-1990), especially the June-July-August rainy season. Furthermore, wide temporal and spatial variations in seasonal rainfall (mm/season) are projected for Belize. But in a zone centred over Stann Creek District and covering parts of Cayo, Toledo and Belize Districts and the offshore Cays and atolls, the decreases in seasonal rainfall are most significant. It is also projected that climate change will provoke a rise in mean sea level in excess of 0.5 metre by the end of the century. Storm surges are also expected to increase in intensity as a result of increases in the intensity of tropical storms and hurricanes.

**Winds:** The decadal change in wind speed is minimal with the variations frequently less than 1 metre per second for most of the time slices. Not until the summer months of the 2090s does the wind speed exceed 1 metre per second over the values of the 1961 – 1990 period. Even then, the difference was frequently less than 1.5 metre per second.

**Sea Level Rise:** Sea level is projected to rise steadily along the coast of Belize. In the low, medium and high emission scenarios, sea level rise is projected to exceed 10 centimetre by the 2030s. Heights of 22, 23 and 38 cm respectively are projected for the low, medium and high emission scenarios by 2050 and 34, 56 and 120 cm respectively by the end of the Century.

### *Sectoral*

Impacts of Climate Change on priority sectors pose major impediments to efforts being implemented to promote sustainable economic and social development and poverty reduction, which are the first and overriding priorities of the national government.

Changes in temperature, rainfall and sea levels will have significant impacts on Belize, especially the coastal zone, and the major socio-economic sectors of Belize, namely water resources, agriculture, tourism, fisheries and human health. Climate-driven sea level rise is expected to have far-reaching consequences on the coastal zone of Belize. When extreme events such as storm surges are also considered the impacts on the coastal zone of the mainland and the Cays could be disastrous. This is due to the diverse coastal assets found in this region. These include the major settlements, such as Belize City, San Pedro, Dangriga, Placencia and Punta Gorda that represents close to one half of the population.

**Water** - Climate Change is very likely to have a significant impact on the water sector of Belize. Rainfall is projected to decrease slightly and become more variable leading to intense rains and flooding, while also worsening drought conditions (McSweeney et al., 2008, 2009; IPCC, 2007; 2013). Sea level rise and storm surges, will also affect the water sector through saline intrusions into coastal aquifers and soils and flooding of coastal lowlands and towns, where the bulk of the population of Belize is located.

**Agriculture** - It is expected that climate change would have severe impacts on the agriculture sector of Belize. Current climate changes are already affecting the agriculture sector: variability of yields/harvests for rain fed agriculture is already suffering from changes in the timing and amounts of rainfall and there is widespread perturbation of the agricultural calendar. Intense rainfalls are causing problems of soil drainage and erosion while warmer temperatures are leading to the increased incidence of yield-reducing weeds, pests and diseases. Future climate changes would very likely exacerbate these conditions. The vulnerability of fisheries and fishing communities to climate change in Belize will depend on their exposure to its physical and ecological impacts, and their dependence on the fishery and its sensitivity to physical effects, and their adaptive capacity.



**Tourism** - Climate Change and climate-driven sea level rise will most likely have important and severe impacts on the tourism industry of Belize. Increases in air temperature (2 °C to 4 °C) towards the end of the century may make conditions unbearable, especially for the elder retired tourist.

**Human Health** - Higher levels of some air pollutants, an increasing number of extreme weather events, increasing outbreaks and transmission of diseases through unclean water and contaminated food, and will threaten agricultural production in some of the poorest countries such as Belize. Furthermore, Climate Change will also bring new challenges to the control of infectious diseases. Many of the major chronic diseases are highly sensitive to temperature and rainfall, including cholera and other diarrheal diseases, as well as vector borne diseases including malaria, dengue and schistosomiasis (WHO, 2012). Malaria and Dengue Fever (DF), two diseases linked to Climate Change, have become major public health problems in Belize in the recent past, although malaria seems to be under control.

**Table 1: Summary of climate change impacts on sectors of the Belizean economy**

<b>Sector</b>	<b>Impacts</b>
<b>Agriculture</b>	<ul style="list-style-type: none"> <li>» Higher temperatures will favour some crops like rice. However, economically important crops in Belize such as sugarcane and citrus will be adversely affected.</li> <li>» Warmer weather from high temperature will cause soil aridity, lead to proliferation of pests and diseases, and put pressure on water resources for water irrigation purposes. » Rain-fed agricultural production will be affected, demanding improved management techniques and consequently increasing the cost of production.</li> <li>» Sea level rise will cause flooding and saline intrusion and soil salinization.</li> <li>» The combined impact is low agricultural yields, decrease in food production and higher food prices.</li> </ul>
<b>Forestry</b>	<ul style="list-style-type: none"> <li>» Increase in the intensity of storms and hurricanes will negatively impact forestry resources, including flora and fauna</li> <li>» Changes in climatic, hydrologic and soil conditions could lead to changes in the composition of natural vegetation.</li> <li>» Extreme weather events (hurricanes and storms) cause uprooting of trees, and loss of commercial value and revenue</li> <li>» Increased overall aridity could exacerbate drought potential over the long term, thus causing habitat loss and contributing to decline and death in some tree species.</li> <li>» Increases in pests and diseases (bark beetle) and forest fires.</li> </ul>
<b>Fisheries &amp; Aquaculture</b>	<ul style="list-style-type: none"> <li>» Rising sea level will adversely impact on fish habitat including wetlands, coral reefs and sea grasses where fish spawn, breed, feed and or grow to maturity.</li> <li>» Rising near-surface water temperature and increasing acidification may cause massive bleaching and dieback of corals.</li> <li>» Decrease in fish production</li> <li>» Damage to and losses in aquaculture</li> </ul>
<b>Coastal &amp; Marine</b>	<ul style="list-style-type: none"> <li>» Sea level rise will lead to, increased erosion, loss of beaches</li> <li>» Damage to valuable infrastructure, increased inundation, loss of agricultural lands and crops, coastal wetlands, mangroves sea grass beds and ecosystems, and displaced coastal communities.</li> <li>» Flooding and marine inundation</li> <li>» Saline intrusion into freshwater lenses</li> </ul>

<b>Tourism</b>	<ul style="list-style-type: none"> <li>» Climate Change, along with sea level rise, would result in loss of beaches, properties and public infrastructure, and result in a decrease in aesthetics and a loss of attractiveness of the destination.</li> <li>» Coastal areas in Belize will experience high levels of saltwater intrusion and rising water tables, thereby reducing water quality, driving up the cost of water.</li> <li>» Higher temperatures could discourage older visitors, because of their susceptibility to heat stress.</li> <li>» Tropical storms and hurricanes, compounded by sea level rise, are also likely to increase in intensity, size and duration, causing flooding and damage to transport and other infrastructure.</li> </ul>
<b>Sector</b>	<b>Impacts</b>
	<ul style="list-style-type: none"> <li>» Decrease in tourism arrivals could ultimately result in loss of employment for large numbers of persons who are currently employed in the tourism sector.</li> </ul>
<b>Human Health</b>	<ul style="list-style-type: none"> <li>» Climate Change will lead to higher levels of some air pollutants, will lead to an increasing number of extreme weather events and increased outbreaks and transmission of diseases through unclean water</li> <li>» Higher temperature will increase the spread of vector diseases.</li> <li>» Higher temperatures will also cause heat stress and will also lead to psychological stresses.</li> <li>» Decrease in rainfall will affect potable water supply.</li> </ul>
<b>Human Settlements</b>	<ul style="list-style-type: none"> <li>» Increase in frequency and intensity of storm surge will cause more flooding and disrupt or destroy coastal settlements.</li> <li>» Increase in frequency and intensity of storm surge and extreme rainfall will cause damages to infrastructure from flooding and erosion. » Damage to transport facilities (roads, ports, airports)</li> <li>» Damage to public facilities (water supply, energy generation)</li> <li>» Damage to health and safety infrastructure »</li> <li>Damage to cultural assets</li> </ul>
<b>Water Resources</b>	<ul style="list-style-type: none"> <li>» Less rainfall combined with increase in temperature will result in increased evapotranspiration and loss of available surface water.</li> <li>» Changes in the hydrological cycle will decrease water levels and adversely impact on the generation of hydropower.</li> <li>» Decrease in precipitation will reduce groundwater and aquifer recharge, saltwater intrusion and contamination of freshwater resources. » As an effect, available water resources will be reduced</li> </ul>
<b>Energy</b>	<ul style="list-style-type: none"> <li>» Increasing use of fossil fuels increases the amount of GHG emissions into the atmosphere.</li> <li>» The demand for electricity is likely to increase as a response to rising temperatures and a demand for air-conditioning, among increasing populations</li> <li>» Oil price fluctuations and consequent fluctuations in costs of production of electricity;</li> <li>» Changes in the hydrological cycle will decrease water levels and adversely impact the generation of hydropower.</li> </ul>

## Addressing Climate Change in Belize

### Timeline history of development

Belize became a Party to the United Nations Framework Convention on Climate Change (UNFCCC) in 1992, having the status of a non-Annex I country. Belize also joined the Kyoto Protocol in 2003, with the status of Annex B.

Since becoming a non-Annex I Party to the UNFCCC, in 2015, the Government of Belize adopted its first National Climate Change Policy, Strategy and Action Plan (NCCPSAP). The NCCPSAP marked the coming together of a number of efforts since the country published its First National Communication to the UNFCCC. The GoB has sought, through several line ministries, to initiate policy-based activities, at the sector level, to address (adapt and mitigate) the impending impacts of Climate Change. Some of the initiatives undertaken to advance adaptation, to date are as follows:

- National Climate Change Policy, Strategy and Action Plan 2015-2020
- Integrated Coastal Zone Management Plan (2013)
- Ministry of Energy, Science, Public Utilities, Transport, Communications and National Emergency Management
- Strategic Plan 2012-2017 and Sustainable Energy Action Plan for Belize
- Integrated Water Resource Management Policy
- Growth and Sustainable Development Strategy 2014 – 2017
- The National Climate Resilience Investment Plan (2013)
- Draft Adaptation Policy (2008)

Table 2 details the progress made to address climate change in Belize.

**Table 2: Timeline history of progress towards addressing climate change in Belize**

<b>Date</b>	<b>Document or Step</b>	<b>Status of activities/progress</b>
<b>2008</b>	Draft Adaptation Policy	Implemented policy based initiatives at the sectoral level to adapt and mitigate impacts of climate change. The document was never finalized or adopted.
<b>2009</b>	Strategy and Action Plan	Focus includes the agriculture and water sectors, among others
<b>2013</b>	Integrated Coastal Zone Management Plan	Incorporated CC
<b>2012</b>	Ministry of Energy, Science and Technology and Public Utilities Strategic Plan 2012-2017	Includes a National Sustainable Energy Strategy
<b>2008</b>	Integrated Water Resources Management Policy	CC incorporated
<b>2010</b>	National Integrated Water Resources Management Act	Does not incorporate CC
<b>2012</b>	Food and Agriculture Policy	Does not incorporate CC (so see below for response)
<b>2015</b>	National Agriculture Sector Adaptation Strategy	Response to the 2012 document which did not incorporate CC
<b>2013</b>	Belize Health Sector Strategic Plan 2013-2017	Does not incorporate CC
<b>2010</b>	National Science and Technology Management Plan of Belize	Does not specifically reference CC adaptation, but is a vehicle for mitigation efforts
<b>2011</b>	Second National Communication to the UNFCCC	Water and agriculture vulnerability assessment included
<b>2009</b>	National Development Framework for Belize 2010 - 2030	Climate Change included
<b>2015</b>	Growth and Sustainable Development Strategy 2014-2017	Climate Change included

2013	National Agenda for Sustainable Development 2013	Does not incorporate CC
2015	Third National Communication to the UNFCCC	Climate Change included; vulnerability assessment and adaptation planning conducted for six sectors: water, agriculture, health, coastal zone, fisheries and tourism
2013	National Climate Resilience Investment Plan	Integrates the planning process across all sectors of the economy
2014	Belize Fifth National Report to the Convention on Biological Diversity	Climate Change included
2014	Enhancing Belize's Resilience to Adapt to the Effects of Climate Change	Vulnerability assessments included for water and agriculture
2014	National Climate Change Policy, Strategy and Action Plan	Provides a roadmap that is geared towards the strengthening of Belize's capacity to adapt to the current and future impacts of climate change

The country also embarked on a number of initiatives that reviewed sector policies, legislation and other initiatives, so they address issues of adaptation and mitigation in the sectors, which are most vulnerable to the impacts of Climate Change. Some of the major initiatives include the:

- Enabling Activities for the Preparation of Belize's Third National Communication Project
- National Climate Change Policy, Strategy and Action Plan (NCCPSAP)
- Marine Conservation and Climate Adaptation (MCCA) Project for Belize
- Management and Protection of Key Biodiversity Areas Project
- National Agriculture Sector Adaptation Strategy and Action Plan to Address Climate Change in Belize
- The National Adaptation Strategy to Address Climate Change in the Water Sector in Belize
- Growth and Sustainable Development Strategy (GSDS) 2014 – 2017
- National Agenda for Sustainable Development
- National Climate Resilience Investment Plan

## Legislative and Regulatory Mechanisms

Belize lacks a significant legal framework for climate change adaptation and mitigation measures, as apart from the Environmental Protection (Clean Development Mechanism) Regulations (2011), drafted under the Environmental Protection Act, there is no specific Climate Change legislation in Belize. There are however a wide range of environmental, planning and natural resource legislation that are germane to the effective mainstreaming of Climate Change in Belize.

### Adaptation

Adaptation efforts are informed by the climate change vulnerability and adaptation assessments for six priority sectors: agriculture, coastal zones, fisheries and aquaculture, health, tourism, and water resources. The Vulnerability and Adaptation (V&A) component of the Third National Communication, published by the GoB, provided adaptation options for each of the targeted sectors as follows:

**Coastal Zone** - Adaptation measures for the coastal zone include the formulation and implementation of land use planning policies to address people and settlements and agricultural lands at risk to inundation deriving from sea level rise and storm surges; the fortification of sea and river defences in accordance with sea level rise and storm surges in vulnerable areas; further implementation of early warning systems in the event of storm surges;

and the building of more shelters on higher ground either near the coast or inland to house people in the event of inundation due to storm surges.

**Water** - Adaptation measures for the sector include the enhancement of mechanisms for the protection and restoration of ecosystems, increased water harvesting, raising awareness to promote the effective and efficient use of water, protecting the water environment, preventing and controlling water pollution and efficient use of water in agriculture.

**Agriculture** - Agricultural adaptation options are grouped according to four main categories that are not mutually exclusive: (1) technological developments such as the development of new crop varieties including types, cultivars and hybrids, (2) government programs such as the use of crop insurance and agricultural subsidies, (3) farm production practices including changes in farm operational practices, and (4) farm-level responses using farm income strategies, both government supported and private, to reduce the risk of climate-related income loss).

**Fisheries** - Adaptive responses to Climate Change in fisheries could include the implementation of management approaches and policies that further strengthen the livelihood asset base, monitoring of the biophysical, social and economic indicators linked to management and policy responses and adoption of multi-sector adaptive strategies to minimize negative impacts such as instituting Government regulations on fishing seasons.

**Tourism** - Adaptation planning should incorporate the expansion and diversification of tourism activities; for example, the construction of marinas in the lagoon near Placencia for sailing boats used by tourists. Additionally, there should be comprehensive short-term, medium-term and long-term adaptation plans integrating vulnerabilities of the tourism industry of Belize to Climate Change and sea level rise.

**Human Health Sector** - Adaptation options for the health sector in Belize include both climate and nonclimatic factors. These adaptation measures are likely to include: a greater understanding of current and future incidence of diseases, control of vectors (mosquitoes) for diseases (malaria, dengue), stagnant water control measures and sanitation improvements in areas where houses are built in swampy locations, caring for the most vulnerable population at risk such as the elderly, infants and young children and the economically disadvantaged groups, lifestyle changes such as eating healthier foods to maintain good health, improved health care and access such as health alerts including more ambulances with more rapid response times, and more health care centres and hospitals with professional staff.

With the preparation of the NCCPSAP in 2015, the GoB aims to guide the short, medium and long-term processes of adaptation and mitigation of Climate Change and to ensure the mainstreaming and integration of Climate Change considerations at all levels of the development planning and operational processes of governance (Simmons et al., 2015). The Vision of the NCCPSAP is to “Demonstrate leadership and commitment in ensuring the challenges of climate change and sea level rise are fully addressed, harnessing necessary resources in support of development of special programmes that are effective, resilient and sustainable”. Its goals are to:

1. Guide the short, medium and long-term processes of adaptation and mitigation of Climate Change in accordance with national prospects for sustainable development in addition to regional and international commitments.
2. Ensure an integrated and well-coordinated approach to Climate Change adaptation and mitigation by fostering the development of appropriate administrative and legislative mechanisms in alignment with national sectoral policies and adaptation plans.
3. Provide guidance to mainstreaming along a low emission development pathway by focusing on the reduction of anthropogenic emissions of greenhouse gases.

The NCCPSAP has eight objectives including:

1. Integrate Climate Change adaptation and mitigation into key national developmental plans, strategies, laws, regulations and budgeting.
2. Build Climate Change resilience in order to prevent, reduce or adapt to the negative impacts of Climate Change on key sectors, economic activity, society and the environment through policies and strategic processes.
3. Promote capacity building and networking across all implementing/involved agencies in addition to securing adequate financing over the short, medium and long term periods for effective and timely adaptation and mitigation responses
4. Capitalize on opportunities currently available through Climate Change negotiation processes that can also enhance development prospects of the nation
5. Ensure that all national sectors are adequately prepared to address the negative impacts of global Climate Change
6. Encourage the private and public sectors to invest in Climate Change adaptation and mitigation initiatives by providing economic incentives
7. Enhance diplomatic and negotiating capacities to better address Climate Change concerns and interests on the regional and international stage
8. Promote the development of efficient and relevant institutional mechanisms that will enhance the planning and response capacity to Climate Change

The NCCPSAP prescribes specific actions to be executed by various Ministries and organizations to build capacity and to improve resilience so that Belize can meet the challenges of climate change. The NCCPSAP (2015) also provides the mandate for development of the NAP. However, there are numerous capacity issues to be addressed for effectively implementation of the NAP.

#### **Institutional framework/governance structure**

The crosscutting nature of Climate Change means that several sectors not only are exposed to the impacts of climate variability and change, but also have a role to play in the management of policies being designed to address the problems identified. Cabinet stands at the hierarchy of the local Climate Change governance structure to provide the necessary guidance and leadership at the political level, including the ratification of international agreements such as the UNFCCC and its Kyoto protocol.

The MAFFESD is the Government Ministry responsible for climate change. The National Climate Change Office (NCCO) is located in the MAFFESD, and on behalf of the GoB, is tasked with coordinating the country's national, regional and international response to Climate Change and ensuring the development of a consistent framework across line ministries and agencies; for mitigating the effects of climate change. The NCCO is also charged with the responsibility of coordinating Belize's external response to the various reporting and other requirements of UNFCCC and attracting or sourcing funds to support the national effort. Central to the process is the Belize National Climate Change Committee established in 2009. The BNCCC that is comprised of thirteen members from various government Ministries, non-government organizations and private sector. Ministries represented include those in charge of Works and Transport, Economic Development, Forestry, Fisheries and Sustainable Development, Natural Resources and Agriculture, Health, Tourism and Culture, Local Government and Energy. The committee has one representative of the private sector and a recognised non-government organisation respectively. The University of Belize also sits on the committee. In 2016, the TOR for the membership for the NCCC and its sub-committees was revised and updated to reflect task accomplished as well as to reflect responsibilities to implement the Paris Agreement and the nationally determined contributions. The Chief Executive Officer of the MAFFESD sits as the chair of the committee, whereas the NCCO functions as the secretariat of the committee. The main task of the committee is to advise the government of its responsibilities under the UNFCCC and the implementation of appropriate policies and strategies to ensure continued sustainable development in Belize. The BNCCC has the authority to establish subcommittees to assist in the implementation of its terms of reference. In 2015, the BNCCC and the sub-committee was reconfigured and

streamlined and now has a membership of 13. Currently, there are three (3) sub-committees existing under the BNCCC. These are: The Mitigation Sub-Committee, the Vulnerability and Adaptation Sub-Committee and the Public Education and Awareness Sub-Committee.

In implementing the NCCPSAP, the Government of Belize will establish a Climate Change Department to replace the NCCO. The new department will play a key role in coordinating the implementation of the Climate Change programme with respect to Belize's national, regional and international Climate Change obligations, including the implementation of the NCCPSAP. The NCCPSAP also proposed the establishment of a Climate Change Trust Fund (CCTF), which would be managed by the Protected Areas Conservation Trust (PACT), to provide finance for the implementation of the Climate Change adaptation and mitigation programmes identified in the NCCPSAP.

In addition, a number of agencies, based on their statutory mandate also have critical roles to plan in the implementation of the climate change adaptation measures across priority sector (see Table 3).

**Table 3: Ministries, Agencies and Climate Change Management Functions**

<b>Key Agencies/ Departments/ Units</b>	<b>Key Responsibilities</b>
<ul style="list-style-type: none"> <li>• <b>Department of Environment</b></li> <li>• <b>Forestry Department</b></li> <li>• <b>Fisheries Department</b></li> <li>• <b>National Climate Change Office</b></li> <li>• <b>Sustainable Development Unit</b></li> <li>• <b>Coastal Zone Management Authority</b></li> <li>• <b>Protected Areas Conservation Trust</b></li> <li>• <b>Agriculture</b></li> </ul>	Preservation, protection and improvement of the environment and the control of pollution Climate Change management, UNFCCC Focal Point Fisheries, forestry, and coastal zone management Sustainable development Sustainable use of Belize's natural and cultural resources. Agriculture, Agroindustry & Aquaculture
• <b>Economic Development</b>	Economic Development
<ul style="list-style-type: none"> <li>• <b>Land and Survey</b></li> <li>• <b>Physical Planning</b></li> <li>• <b>National Integrated Water Resource Authority</b></li> <li>• <b>Solid Waste Management</b></li> </ul>	Physical Planning, land use planning and management of national lands Water Industry (except water supply and services) Solid waste management
<ul style="list-style-type: none"> <li>• <b>Works</b></li> <li>• <b>Road infrastructure</b></li> </ul>	Public Works Road Construction and Maintenance Bridge Construction and Maintenance
• <b>Ministry of Health</b>	Public Health, sanitation and diseases prevention and control
<ul style="list-style-type: none"> <li>• <b>Geology and Petroleum Department</b></li> <li>• <b>Public Utilities Commission</b></li> <li>• <b>Energy Department</b></li> </ul>	Energy etc./Climate Change mitigation Energy efficiency and conservation
<ul style="list-style-type: none"> <li>• <b>Meteorological Office</b></li> <li>• <b>National Emergency Management Organization (NEMO)</b></li> </ul>	IPCC Focal Point National Meteorological Service. Municipalities, Village Councils National Emergency Management Organization (NEMO), National Fire Service

<ul style="list-style-type: none"> <li>• <b>Department of Local Government and Rural Development</b></li> </ul>	
<b>Belize Tourism Board</b>	Tourism Development and Regulation Sustainable tourism Planning and Management Monitoring and Quality Management Marketing and Promotion of Tourism Assets
<ul style="list-style-type: none"> <li>• <b>Housing and Planning Department</b></li> <li>• <b>Central Building Authority</b></li> </ul>	Housing and Planning Department, Central Building Authority Regulation of land use, housing and infrastructural development Approve building plans Issue building permits

## Gaps Identified

The J-CCCP Baseline Assessment (2016) contributed to the baseline for the NAP process through stakeholder consultations. It established Monitoring & Evaluation as the most critical gap at this stage in the Country's NAP process. It was noted that a structured framework, as well as the requisite metrics for monitoring the NAP process, is still to be clearly defined or established, as demonstrated by the paucity of relevant, current and/or reliable data used for the on-going assessment of stated national priority sectors (e.g. transport, waste, water resources, and agriculture). Human and institutional capacities followed by climate information followed respectively. Other gaps identified, in order of priority, included:

2. Human and institutional capacities
3. Climate information
4. Participation
5. Mainstreaming
6. Implementation
7. Long term vision and mandate

The Baseline Assessment conducted a thorough analysis of these factors, their current status and desired state. (Table 4). This analysis provides the basis for further dialogue on addressing capacity issues in the short, medium and long term. Capacity actions to be defined can align well with the Capacity Development Plan associated with the GSDS (2015).



**Table 4: Capacity Assessment of critical factors for addressing climate change in Belize (J-CCCCP, 2016)**

Factor	Current status	Desired state
M&E	M&E most critical gap	Structured framework and metrics for monitoring the NAP process to be defined and established.
Human and institutional capacities	<p>Institutional framework: BNCCC (2009) with three sub-committees: Vulnerability assessment and adaptation; mitigation, public education and outreach 23 members diverse stakeholder base.</p> <p>NCCO (2012) Ministry of Forestry, Fisheries, and Sustainable Development: coordination response (national, regional and international)</p>	<p>Develop structured framework for coherent national response Governance structure need to be enhanced- provide requisite enabling environment for NAP process. More defined structure, aligning of institutions and legislative framework</p> <p>NCCO needs increased technical capacity</p> <p>Align with national policy framework – Horizon 2030</p> <p>Awareness need enhancement in sector ministries, donors and academia</p> <p><b>GSDS Action #6</b> Officially establish NCCO and strengthen capacity Other actions:</p> <ol style="list-style-type: none"> <li>1. Improve coordination and incorporate other stakeholders</li> <li>2. Coordinate and develop CC resource mobilization strategy for r climate resilient pathway</li> <li>3. Provide analytic and corporate support to the NCCC</li> <li>4. Implement capacity building Master Plan</li> <li>5. Develop and implement communication strategy empowering communities through knowledge on DRR and CCA</li> </ol> <p>Capacity building for monitoring, GIS climate modelling, improved data storage, sharing and use</p>

Climate information for adaptation	Data and information readily available including current trends, projections and scenarios, climate impact studies, V/A for sectors, hazard and risk mapping, early warning systems. Projections downscaled to 25km in the NCCPSAP.	Further downscaling RCP 4.5 to community level  Management of climate information and data availability of products to be strengthened
------------------------------------	---	--

Factor	Current status	Desired state
	<p>V/A for sectors including agriculture and water resources but with varying degree of quality.</p> <p>Gaps in climate relate to impacts, opportunities, risks for sectors and sub-sectors, and limited vulnerability/risk assessment done at the sub-national level.</p> <p>Limited knowledge of CC in sector ministries, academia, donors and private sector, capacity building ad hoc sporadic and project based, not sustainable</p>	
Participation at planning level	<p>Broad based stakeholder involvement: public, private, academia, donors, external technical</p> <p>Gaps: Adequate enabling conditions for all stakeholders to be represented in NAP processes.</p>	Need systematic approach within NCCO to facilitate a participatory approach for stakeholder engagement in NAP processes.

Mainstreaming	<p>National level: recent integration in national development policy, e.g. tourism master plan and sustainable energy action plan for Belize; IWRM policy, national agenda for sustainable development, fisheries policy, to varying degrees.</p> <p>The long term National Development Framework for Belize - 2010-2030 (Horizon 2030) addresses adaptation within the broad context of “building economic resilience, promoting productivity and competitiveness and ensuring the environmental sustainability of economic activity”. Climate Change adaptation, however, is given a stronger focus in the medium-term GSDS, and the 2015-2018 planning period is quite specific in its focus with regard to the areas of water resource management (such as flood risk and water stress) and coastal erosion.</p>	<p>Need for a standard approach???</p> <p>All priority sectors in the national development framework integrate CCA. Health and tourism still deficient though work has been done in these sectors.</p> <p>NAP: Comprehensive, overarching NAP to facilitate a holistic approach to CCA across all sectors for coherent mainstreaming at national and sectoral level. NAP need to be undergirded in an enhanced governance framework that promotes synergies with the national DRR, sustainable development and environment agendas. Need for enhanced legislative framework for systematic integration of DRR/Resilience in national sectoral and local planning. Need for enforcement of existing legislation to support the various mandates. Need for public awareness and education</p>
---------------	--	---

Factor	Current status	Desired state
--------	----------------	---------------

	<p>The GSDS also seeks to create the nexus between Climate Change Resilience and Disaster Risk Management.</p> <p>Signed and ratified the Paris Agreement (2015)</p> <p>NCCPSAP addresses adaptation at sectoral level but does not elaborate a NAP that is holistic and incorporates all sectors. Draft Adaptation Policy (2008) never adopted or finalized.</p> <p>No specific climate change legislation in Belize</p> <p>Sectoral and local planning: Reviewed sector policies, legislation. Mainstreaming has largely been at policy level. Systematic application of adaptation policy in sectoral planning processes and activities limited.</p> <p>CCA at local level mainly through DRM and projects.</p>	
Implementation	<p>Implemented through project with a range of them underway. However, these have not been recorded or registered anywhere- no database</p> <p>Allocations for CCA priorities are not clearly enunciated in the current domestic budgetary planning, as there is no formal mechanism for climate financing in place as yet. Currently budgetary allocations to municipalities are provided as lump sums, which does not specifically take into account costs related to managing the impacts of climate variability &amp; CC and comprehensive disaster management. Programme budgeting is not a requirement as yet for the municipalities.</p> <p>Consideration is being given to the establishment of a National Climate Change Trust Fund (CCTF) under the</p>	<p>Unified approach to adaptation implementation across sectors, agencies, the major gap in this regard is the lack of a coherent framework to systematically implement CCA interventions. The development of a suitable framework and platform for climate financing is also imperative for adaptation implementation.</p> <p>Training in the design and commissioning of frameworks for climate financing will be required in this regard.</p> <p><b>Also building adequate absorptive capacities for available adaptation finance must be considered as an important consideration within this rubric.</b></p>

	existing framework of the Protected Areas Conservation Trust (PACT). The CCTF will seek to attract the	
--	--	--

Factor	Current status	Desired state
--------	----------------	---------------

	<p>increasing amounts of financing for climate change adaptation available through multilateral funds, including the Adaptation Fund and Green Climate Fund (GCF). The GCF recently announced availability of US\$ 3 M per country for national adaptation planning</p> <p>The National Climate Resilience Investment Plan (NCRIP-2013) has been fully adopted by the Government of Belize. The purpose of the NCRIP is to improve Belize's climate resilience to support the country's economic growth and safety of its citizens. It is a crosssectoral plan that identifies both physical and nonphysical interventions that take into account current and future risks posed by current and future climate variability. The NCRIP is expected to be integrated by Government of Belize into its Growth and Sustainable Development Strategy and is already aligned with the Horizon 2010-2030. The cost of implementation is approximately USD 231.4 million, and funding mechanisms are being explored, including public private-partnerships (PPPs). The NCRIP also seeks to achieve the task of more tightly integrating the budget preparation processes with the Public Sector Investment Programme (PSIP) as part of a wider planning reform.</p> <p>Link to regional and international CC Initiatives: Budgetary allocation for programmatic work but Belize seeks assistance externally for implementation of actions.</p>	
M&E	<p>No formal monitoring &amp; evaluation (M&amp;E) systems for the national adaptation process. Agencies/organizations tend to utilize project monitoring and evaluation metrics to broadly assess project outputs and outcomes, in the context of national or sectoral objectives with no particular focus on adaptation outcomes and the NAP process itself.</p>	<p>Identification of nationally appropriate CCA indicators that can be readily integrated into existing national monitoring systems for the National Development Plan is desired. Also, the utilization of data management tools (such as CCORAL) to support decision-making.</p>

Factor	Current status	Desired state
	<p>A structured national level Climate Change Monitoring and Evaluating (M&amp;E) framework is currently being elaborated by the NCCCCO under the 2011 – 2016 Caribbean Regional Resilience Development Implementation Plan (IP) Project being executed by CCCCC. This is proposed under the project component “Develop and use stronger regional Measuring, Reporting and Verification systems.”</p> <p>The (draft) National Climate Change M&amp;E Plan has identified some of intended indicators and the associated baseline data and sources. An extract from the M&amp; E Plan demonstrating the type of baseline data and intended indicators to be used, as well as the consideration for gender disaggregation of data is provided in</p> <p>A major gap in M&amp;E is the lack of availability and accessibility of suitable data to effectively evaluate CCA outcomes. In addition, there is no national coordinating framework among data providers to ensure that collection and reporting of data are done using fairly standardized formats and on a regular basis to facilitate timely M&amp;E.</p>	

In summary:

- Financial, technical and capacity strengthening is needed to sustain infrastructure for implementation of climate actions in the adaptation and mitigation programmes.
- Inadequate capacity at district and community level on Climate Change impacts, insufficient use of economic instruments and lack of input data for some sectors.
- Inadequate capacity for modelling and development of climate scenarios and projections.
- Additional data on regarding groundwater, especially in northern Belize to improve management of future water resources under Climate Change.
- It was also recommended that governance structure, with better aligned and authorized mandates for CCA related agencies, supported by the requisite legislation is now required to drive the NAP process along this new direction (Final Baseline Assessment, 2016).

## ADAPTATION PLANNING FOR TARGETED SECTORS

The water and agricultural sectors were identified as priority sectors for consideration during the Baseline Assessment consultation process (2016). The National Adaptation Strategy and Action Plan will inform NAP development for these two sectors.

Agriculture is the second most important sector of the Belizean economy in the provision of employment and is the key contributor to Belize's food and nutrition security. Since 2006, with the establishment of cogeneration facilities in the northern sugar cane region, this sector has also become a key contributor to Belize's energy security and its gradual transition towards a green economy. Therefore, the development of the "National Adaptation Strategy to Address Climate Change in the Agriculture Sector" is an important step in the country's response to the current and future impacts of climate change.

The agriculture adaptation strategy document identified nine commodities, sugarcane, citrus, bananas, shrimp, rice, corn, beans, livestock and vegetables as the most important for review and analysis. The consultation established that (1) that most stakeholders have observed climate change and climate variability effects on agricultural systems, and (2) that pests/diseases and soil nutrition management was considered the most critical adaptation needs. The recommended adaptation strategies for each for the direct and indirect climate change impacts are outlined in Table 5.

**Table 5: Recommended adaptation strategies for the agriculture sector**

<b>Climate Change Effect</b>	<b>Adaptation Strategy</b>
<b><i>Rainfall excesses and flooding</i></b>	<ul style="list-style-type: none"> <li>- Properly designed drainage infrastructure, systems and mechanisms to alleviate waterlogging stress on crops and pastures.</li> <li>- Well-designed and drained road infrastructure to ensure access to farms and transport of farm produce post rainfall event.</li> <li>- Relocation of annual crops within a farmed area during an annual production cycle based on seasonal rainfall forecast.</li> </ul>
<b><i>Rainfall deficit and drought</i></b>	<ul style="list-style-type: none"> <li>- Irrigation, including drip irrigation to conserve scarce water resources, to supply the water needs of priority crops. Use of renewable energy sources to reduce cost of pumping water for irrigation.</li> <li>- Watershed management to maintain the country's water resources in the long term.</li> <li>- Water harvesting during periods of rainfall for use under conditions of water shortage.</li> </ul>



<b>Rainfall variability</b>	- Seasonal production to adjust to the different crop water requirements at critical phases of the production cycle.
-----------------------------	--

<b>Climate Change Effect</b>	<b>Adaptation Strategy</b>
	- Timely and localized weather forecast specifically for agriculture purposes to enable farmers to time their activities in relation to forecasted weather events/conditions.
<b>Temperature increase</b>	<ul style="list-style-type: none"> <li>- Selection for heat-tolerant crop and pasture varieties and livestock breeds that are better adapted to the increased temperatures regimes brought about under Climate Change, with emphasis on indigenous genetic diversity. Preservation of selected indigenous crop and livestock in germplasm banks.</li> <li>- Alleviation of heat stress on plants through irrigation to supply sufficient water to allow the cooling effect of evapotranspiration,</li> <li>- Silvopastoral systems, which utilize shade trees of economic value to alleviate heat stress on, range livestock.</li> <li>- Heat alleviating infrastructure or appropriately ventilated housing designs especially for poultry, pigs, sheep and goats.</li> </ul>
<b>Changes in pests and diseases</b>	<ul style="list-style-type: none"> <li>- Integrated Pest Management (IPM) practices to keep pests below economic threshold levels in order to minimize risks to human health, beneficial and nontarget organisms, and the environment.</li> <li>- Protective cropping structures (PCS) to physically exclude arthropod pests, and minimize disease incidence by excluding rainfall disseminated fungal and bacterial pathogens. Protective cropping structures can also be utilized for the production of vegetables on coastal areas vulnerable to salt water intrusion when combined with the use of harvested water for irrigation and decreased water use for pest management.</li> <li>- Use of models developed for Climate Change scenarios to forecast potential pest outbreaks based on meteorological data.</li> <li>- The use of appropriate indigenous or, if necessary, imported Biological Control Agents (BCA) for the most expedient, cost effective and environmentally sustainable option for management of crop pests and disease vectors.</li> <li>- Improved biodiversity for the agro-ecological balance needed for economic sustainability of agriculture production systems.</li> <li>- Research into new pest and disease interactions that will evolve as a result of Climate Change.</li> </ul>

<b>Changes in soil fertility</b>	<ul style="list-style-type: none"> <li>- Soil and nutrition management to implement measures to preserve and improve the physical, chemical and nutritional properties of soils affected by increased temperatures and variation in water regime resulting from Climate Change. Selection of nutritious pasture grasses that can tolerate soils affected by both drought and excessive water, along with grazing management practices to maintain longevity and fertility of pastures.</li> <li>- Selection of nutritious pasture grasses that can tolerate soils affected by both drought and excessive water.</li> <li>- Use of grazing management practices to maintain longevity and fertility of pastures.</li> <li>- Improvement of soil fertility through the use of organic matter such as compost, vermiculture and bokashi.</li> <li>- Use of physical and chemical amendments, and beneficial microorganisms.</li> <li>- Vegetation management (crop cover) to prevent exposure of bare soils and its subsequent erosion, including maintenance of live vegetative cover during fallow periods.</li> </ul>
<b>Aquaculture adaptation measures</b>	<ul style="list-style-type: none"> <li>- Improved brood stock (resistance to disease and tolerance to environmental change i.e., control of temperature and salinity).</li> <li>- Access to clean water sources (to facilitate rapid water exchange regularly).</li> </ul>
<b>Climate Change Effect</b>	<b>Adaptation Strategy</b>
	<ul style="list-style-type: none"> <li>- Water Storage.</li> <li>- Reduced energy cost including the use of renewable and / alternative sources of energy i.e., solar, wind, etc.</li> <li>- Research (resistant varieties, improved management systems; improved shrimp growing techniques)</li> <li>- Information and technology transfer</li> <li>- Improvement in regulatory services (Belize)</li> </ul>

In addition, commodity insurance is considered critical to maintaining levels of production under the predicted Climate Change scenarios as an adaptation strategy.

Water is a natural resource that increasingly requires more special management consideration and national attention. Belize is the country with the highest per capita water resources in the Americas. Water resources in Belize have long been taken for granted but periods and areas of stress have brought renewed interest. National water resources are increasingly becoming an area of focus for national management and control particularly in view of the strategic implications of national security. An adaptation plan was prepared for the water sector in 2009, which took into consideration the technical nature of the threats and the current and projected impacts. Five key adaptation actions are presented and these include:

- The establishment of an agency to execute integrated water resources management;
- Strengthening the existing institutional and human resources capacities in the water sector for improved management practice,
- Formalizing the legal mandate and operations of the National Climate Change Committee,
- Strengthening the trans-boundary relationships to cover the impacts of climate change on the water sector
- Increasing public awareness and education in water culture and climate change.

Implementation of this Strategy and Action Plan is estimated to cost BZ\$ 4.5 over a five-year period. The financing is projected to come from a combination of domestic and international resources. There were a number of recommended next steps, namely:

- Cabinet's adoption of this policy and the drafting of enabling legislation to authorize the establishment of a water agency with responsibility to manage water resources in an integrated and comprehensive manner. The Draft Water Policy includes climate change and any legislation passed should adhere and reflect this policy-based approach. It is expected that the policy and legislation should be in effect by the end of calendar year 2009.
- A concerted effort by all the stakeholders from both the private and public sectors.
- Effective trans-boundary cooperation between Belize and Guatemala, to the west and Mexico to the north.
- Mobilization of national, bilateral and international resources. Bilateral coordination and cooperation of between the ministries of Foreign Affairs and Natural Resources and the counterpart ministries of the other two countries – Mexico and Guatemala.

## Relation and alignment with national development context

The consultant will use the NAP process to enhance the coherence of adaptation and development planning within Belize. Belize's Horizon 2030 and Growth and Sustainable Development Strategy (GSDS) are the two main sustainable development plans to be used as building blocks during the NAP climate change mainstreaming and adaptation planning process.

Horizon 2030, envisions by the year 2030 Belize as “a country of peace and tranquillity, where citizens live in harmony with the natural environment and enjoy a high quality of life, and where the citizens are an energetic, resourceful and independent people, looking after their own development in a sustainable way.” Developed in 2010, Horizon 2030 embodies the vision for Belize in the year 2030 and the core values that are to guide citizen behaviour and inform the strategies to achieve this common vision for the future. Horizon 2030 represents the consolidated views of many stakeholders—young and old, men and women, students and teachers, politicians and voters, employers and employees, public and private sectors, farmers, tourism operators and artists.

The Horizon 2030 Framework covers several thematic areas that are organized under 4 main headings:

- Democratic governance for effective public administration and sustainable development
- Education for Development - Education for Life
- Economic resilience: Generating resources for long term development
- With the Bricks and the Mortar - Healthy Citizens and a Healthy Environment.

The Growth and Sustainable Development Strategy (GSDS) for Belize was developed in 2015 as the country rose to the challenge of guiding its overall development for the nation over the period 2015-2018; while creating create synergies between Belize's economic, social, and environmental policies.

The GSDS is a medium term instrument for implementing Horizon 2030. It does this, however, through an updated framework that (1) takes into account stakeholder consultations on current sustainable development needs and priorities in Belize, and (2) helps to bring Belize into alignment with the international community by the adaptation of the sustainable development framework of the UN Task Team. The GSDS is viewed as a living document, developed through extensive stakeholder consultations with government officials as well as external experts, United Nations (UN) development partners, and citizen-based organizations.

At the core of the GSDS is a commitment to achieve a single overriding goal: to improve quality of life for all

Belizeans, living now and in the future. To achieve that goal, GSDS provides a strategic framework, the Belize Framework for Sustainable Development. The Belize Framework for Sustainable Development builds on three national planning streams:

- The completed and adopted Horizon 2030 document
- The development of a medium-term “Growth and Poverty Reduction Strategy” (GPRS) during early 2014 (including stakeholder consultations)
- The development of a zero draft Concept Note for the development of a “National Sustainable Development Strategy” (NSDS) during mid-2014 (including stakeholder consultations)

The GSDS identifies four “Critical Success Factors” (CSFs), subsidiary goals, that also provide an organising framework for the objectives and actions grouped underneath them (under the headings of “Necessary Conditions” or “NCs”, and “Actions”). Each CSF is also linked to a set of measurable targets.

- CSF1, “Optimal National Income and Investment,” Belize will seek to achieve real output growth of 5% annually over a prolonged period.
- CSF2, “Enhanced Social Cohesion and Resilience,” the general aim will be to build a society in which individuals feel a sense of belonging, a society that is inclusive and that provides opportunity for social mobility. Toward this end the country will seek to completely eradicate poverty by 2030, and to achieve more equitable income distribution.
- Achievement of CSF3, “Sustained or Improved Health of Natural, Environmental, Historical and Cultural Assets,” is vital to achieving CSF1 and 2; but it also has intrinsic value, in and of itself. Here the right balance will be maintained between strategies to drive economic growth, and policies that maintain the integrity of its natural environment — and thereby sustain the promise of *future* economic growth.
- Attaining CSF 4, “Enhance Governance and Improved Citizen Security,” will involve reducing wastage, abuse of government resources, and inappropriate procurement, while generally improving public sector management, including budgeting practices, hiring practices, and accountability mechanisms.

**Table 6: Elements of the Belize Framework for Sustainable Development (GSDS 2015)**

<p><b>Overarching Goal</b></p> <p><b>“To improve the quality of life for all Belizeans, living now and in the future.”</b></p>			
<p><b>Critical Success Factors (CSF)</b></p>			
<b>CSF1 Optimal national income and investment</b>	<b>CSF2</b> Enhanced social cohesion and resilience (enhanced equity)	<b>CSF3</b> Sustained or improved health of natural, environmental, historical, and cultural assets	<b>CSF4</b> Enhanced governance and citizen security
<p><b>Necessary Conditions (NC)</b></p>			
<p><b>NC1.1</b> Penetrate export markets</p> <p><b>NC1.2</b> Attract foreign investments</p> <p><b>NC1.3</b> Good/effective industrial policy, based on Belize’s strengths</p> <p><b>NC1.3.1</b> Improved competitiveness (including small firms and traditional sectors)</p> <p><b>NC1.3.2</b> Optimal economic transition</p> <p><b>NC1.3.3</b> Access to development finance</p> <p><b>NC1.3.4</b> Inclusive growth</p> <p><b>NC1.3.5</b> Technological adaptation and innovation (including green technology)</p>	<p><b>NC2.1</b> Adequate access to health care</p> <p><b>NC2.2</b> Adequate access to education and lifelong learning for all</p> <p><b>NC2.3</b> Optimal social security/insurance</p> <p><b>NC2.4</b> Better social assistance (direct social protection)</p> <p><b>NC2.5</b> Effective livelihood programs (indirect social protection)</p> <p><b>NC2.6</b> Decent wages and work conditions</p> <p><b>NC2.7</b> Strong national identity and future vision</p> <p><b>NC2.8</b> Social inclusion and equitable growth</p>	<p><b>NC3.1</b> Wise stewardship of natural resource assets</p> <p><b>NC3.1.1</b> Ecosystems management</p> <p><b>NC3.1.1a</b> Protected areas management</p> <p><b>NC3.1.1b</b> Other land areas</p> <p><b>NC3.1.2</b> Water resource management</p> <p><b>NC3.1.3</b> Disaster risk management and climate change resilience</p> <p><b>NC3.1.4</b> Management of historical and cultural areas</p> <p><b>NC3.1.5</b> Marine and aquatic resources</p> <p><b>NC3.2</b> Rural and urban planning</p> <p><b>NC3.3</b> Waste management and pollution control</p>	<p><b>NC4.1</b> Improved technical and political governance systems</p> <p><b>NC4.2</b> Amelioration of social issues that fuel crime</p> <p><b>NC4.3</b> Effective policing</p> <p><b>NC4.4</b> Better administration of justice</p> <p><b>NC4.5</b> Maintaining the integrity of national borders</p>

**NCI.3.6** Appropriate incentives  
**NCI.3.7** Prioritized sectors  
**NCI.4** Efficient markets including labour and financial markets **NCI.5** Adequate infrastructure (roads, ports, energy, water, telecom. and transport)  
**NCI.6** Adequate skills and capacity to support economic growth, development, and resilience **NCI.6.1** Align to labour market needs **NCI.6.2** Encourage entrepreneurship and business innovation

The GSDS also refers to, and should be considered to include, many other sectoral and ministerial planning documents. Where not otherwise specified in the GSDS, these sectoral and ministerial plans are to guide development activity during the planning period insofar as they are consistent with the GSDS goals and priorities.

Implementation of the GSDS is being coordinated by the Ministry of Finance, Public Service, Energy and Public Utilities. Monitoring and evaluation (M&E) of results at the three GSDS goal levels — the Overall Goal, the four CSFs, and the NCs is being managed through a set of inter-ministerial and inter-agency work groups called “Working Tables,” chaired by representatives of the Statistical Institute of Belize (SIB) and reporting to the Technical Committees. Evidence regarding the level of achievement for each of the three goal level will be collected by various institutions, including the SIB, the Central Bank of Belize, and various line ministries. During the first GSDS period, the GoB will seek to:

- rationalize land use planning to support sustainable economic activities
- improve agricultural production and efficiency through sustainable and climate smart best practices
- improve linkages between agriculture and tourism
- improve value added from agriculture through agro-processing
- improve value added from sustainable fisheries management and processing
- increase tourist arrivals and value added from tourism, as well as extend tourism’s rural/national reach and competitiveness and its “eco-tourism” profile
- facilitate the development or emergence of other types of employment generating opportunities, including activities related to renewable energy, aquaculture, real estate, medical tourism and information and communication technology (ICT), in order to absorb excess labour supply.
- continue the sustainable management of Belize’s coastal zone and protected areas system with the aims of building climate resilience, ensuring water and food security, reducing disaster risk, and preserving Belize's natural and cultural heritage; and
- improve the health and well-being of Belizeans, through a variety of social and environmental policies and initiatives.



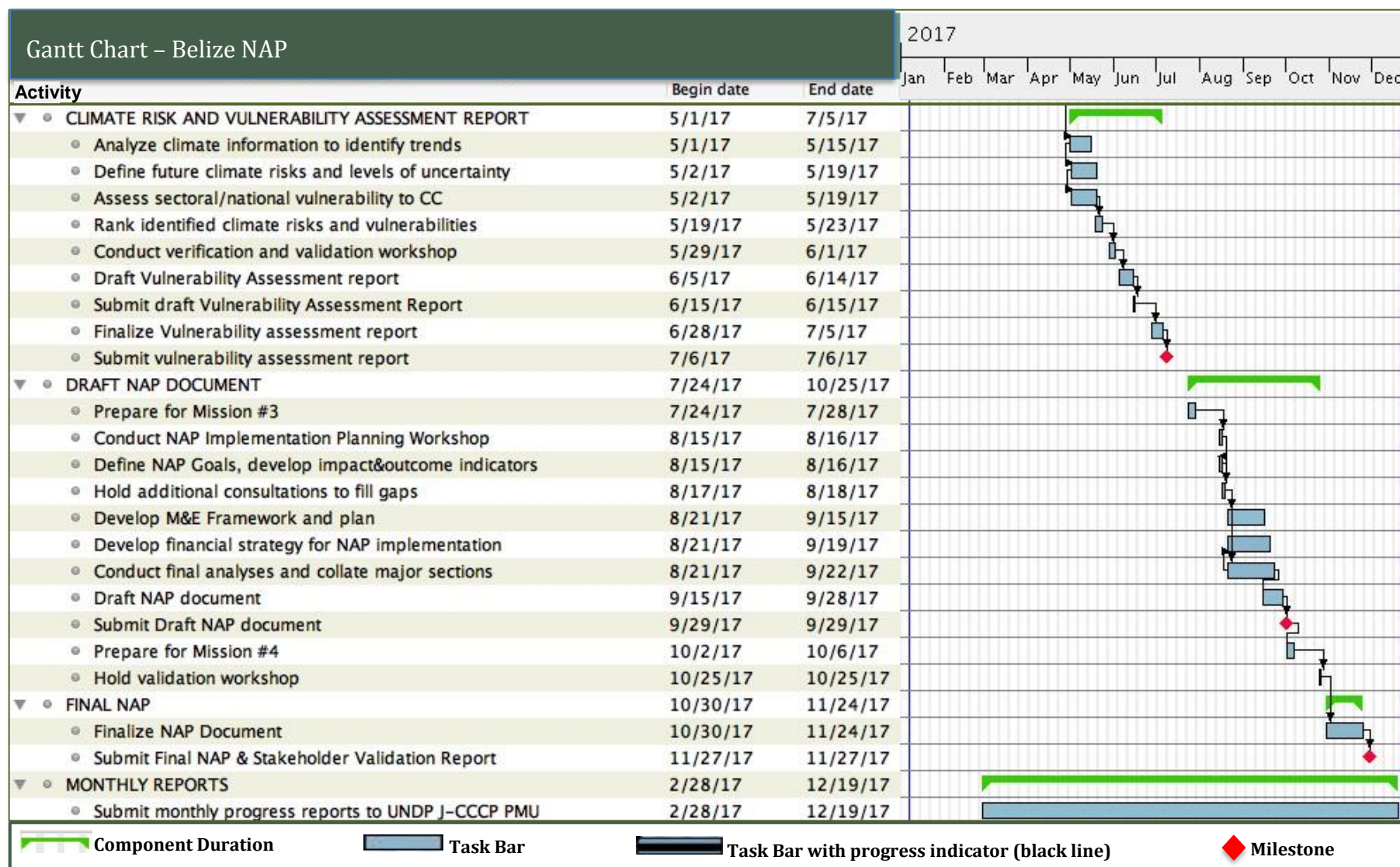


## 4.0 Work plan

The detailed work plan for NAP development for Belize is provided in Figure 7 and further outlined in Table 7.

**Figure 7: Gantt Chart for NAP development for Belize**







**Table 7: Work Plan - Design and Development of Belize NAP**

<b>MILESTONE</b>	<b>Activity</b>	<b>Start date</b>	<b>End date</b>	<b>Expected Outputs</b>
<b>I. INCEPTION REPORT</b>	Introductory meeting with UNDP Barbados and Belize National Focal Point UNDP	9-Jan-2017	9-Jan-2017	Project briefing and introductions with key J-CCCP Project staff
	Collection and review of initial documentation	9-Jan-2017	30-Jan-2017	Summary of documents completed
	Drafting of Inception Report	16-Jan-2017	30-Jan-2017	Inception Report drafted
	Submission of Inception Report	30-Jan-2017	30-Jan-2017	Inception Report submitted
<b>2. STOCKTAKING AND GAP ANALYSIS</b>	Documentary review	9-Feb- 2017	3-Mar-2017	
	Preparation of Stocktaking/Gap Analysis consultation questionnaire; ICA tool, initial meeting agenda and stakeholder listing	6-Mar-2017	8-Mar-2017	Questionnaire, Agenda and Participants' list; ICA tool developed; circulated for feedback, approved
	Mission # 1: 1. Kick-off meeting with incountry stakeholders 2. Individual meetings with key stakeholders 3. Conduct of GCC ICA with the NCCO	20-Mar-2017	23-Mar-2017	Initial meeting held; roles and responsibilities and other key points agreed upon; ICA conducted with NCCO; information collected for Stocktaking and Gap Analysis
	Collect additional information identified from meetings	20-Mar-2017	23-Mar-2017	Gaps in information filled
	Drafting of Stocktaking and Gap Analysis Report	27-Mar-2017	6-Apr-2017	Stocktaking and Gap Analysis Report
	Submission of Stocktaking and Gap Analysis Report	7-Apr-2017	7-Apr-2017	Stocktaking and Gap Analysis Report submitted
	Finalization of Stocktaking and Gap Analysis Report	24-Apr-2017	27-Apr-2017	Stocktaking report and Gap Analysis
	Submit Stocktaking and Gap Analysis Report	28-Apr-2017	28-Apr-2017	Stocktaking and Gap Analysis Report submitted

<b>MILESTONE</b>	<b>Activity</b>	<b>Start date</b>	<b>End date</b>	<b>Expected Outputs</b>
<b>3. NAP ROAD MAP/STRATEGY DOCUMENT INCLUSIVE OF CAPACITY DEVELOPMENT AND M&amp;E PLANS</b>	Recap and collate key findings on road map and strategy as well as capacity development and M&E plans	1-May-2017	5-May-2017	
	Prepare Mission #2 schedule, workshop agenda, worksheets and documents	8-May-2017	12-May-2017	Documents sent for feedback and approval
	Hold stakeholder workshop to define mandate and road map for Belize NAP (highlight existing mandate elements and determine rest in workshop setting and Utilize road map workshop to validate preliminary capacity development actions and M&E framework	29-May-2017	1-Jun-2017	Workshop completed and outputs documented
	Conduct additional consultations following on stakeholder workshop	29-May-2017	1-Jun-2017	
	Draft and Submit Belize Mandate and Road MAP document as well as preliminary Capacity Development plan and M&E framework	5-Jun-2017	9-Jun-2017	Mandate, Road Map and Strategy for NAP, Capacity Plan, M&E Plan
	Finalize Belize Mandate and Road MAP document as well as preliminary Capacity Development plan and M&E framework	26-Jun-2017	29-Jun-2017	
	Submit Belize Mandate and Road MAP document as well as preliminary Capacity Development plan and M&E framework	30-Jun-2017	30-Jun-2017	Report on Belize Roadmap, Capacity Development and M&E Plans submitted
<b>4. CLIMATE RISK AND VULNERABILITY</b>	Analyze current climate information to identify trends to support the planning processes;	1-May-2017	15-May-2017	

ASSESSMENT REPORT	Using existing climate models, climate data and climate studies, define future climate risks and levels of uncertainty. Where necessary local level resolution/ data capture may be undertaken to address information gaps;	2-May-2017	19-May-2017	
-------------------	---	------------	-------------	--

MILESTONE	Activity	Start date	End date	Expected Outputs
	Assess vulnerability to climate change at the sectoral and national levels	2-May-2017	19-May-2017	
	Rank identified climate risks and vulnerabilities based on climate scenarios (local and regional) and align them with appropriate adaptation options.	19-May-2017	23-May-2017	V/A report
	Conduct verification and validation workshop to achieve consensus on national and sectoral adaptation actions	29-May-2017	1-Jun-2017	Workshop completed and outputs documented
	Draft Vulnerability Assessment (V/A) report	5-Jun-2017	14-Jun-2017	Draft V/A Report
	Submission of Draft V/A Report	15-Jun-2017	15-Jun 2017	Draft V/A Report submitted
	Finalize Vulnerability assessment report	28-Jun-2017	5-Jul-2017	Final draft VA report
	Submit Vulnerability Assessment Report	6-Jul-2017	6-Jul-2017	V/A Report Submitted
5. DRAFT NAP DOCUMENT	Prepare for Mission #3 agenda, worksheets and other workshop documents	24-Jul-2017	28- Jul-2017	Documents sent for feedback and approval
	Conduct NAP implementation planning workshop	15-Aug-2017	16-Aug-2017	Prioritized implementation plan with timelines, responsibilities (for at least first 5 years)
	Define NAP Goal and develop impact and outcome indicators	15-Aug-2017	16-Aug-2017	

	Hold additional consultations to fill any existing capacity gaps and discuss implementation	17-Aug-2017	18-Aug-2017	
	Develop M&E framework and plan	21-Aug-2017	15-Sep-2017	
	Develop financial strategy for implementation of NAP	21-Aug-2017	19-Sep-2017	
	Conduct final analyses and collate all major sections of NAP	21-Aug-2017	22-Sep 2017	
	Draft NAP document	15-Sep-2017	28-Sep-2017	Draft NAP document, including capacity development and M&E plans
<b>MILESTONE</b>	<b>Activity</b>	<b>Start date</b>	<b>End date</b>	<b>Expected Outputs</b>
	Submit Draft NAP document	29-Sep-2017	29-Sep-2017	Draft NAP Submitted
	Prepare for Mission #4, schedule, workshop agenda, worksheets and documents	2-Oct-2017	6-Oct-2017	Documents sent for feedback and approval
	Hold validation workshop	25-Oct-2017	25-Oct-2017	Workshop completed and outputs documented
6. FINAL NAP	Finalize NAP document	30-Oct-2017	24-Nov-2017	Final NAP
	Submit Final NAP & Stakeholder Validation Report	27-Nov-2017	27-Nov-2017	Final NAP Submitted
7. MONTHLY REPORTS	Submit progress reports to UNDP J-CCCP PMU	28-Feb-2017	19-Dec-2017	Progress reports submitted



## 5.0 Assumptions, Risks and Risk Mitigation

### Assumptions

The key assumptions underpinning the timely and successful execution of the NAP design and development process is that the work will be completed in 80 man-days over the 12-month period, provided that:

- UNDP/PMU will:
  - Make relevant documentation and data available to the Consultant
  - Provide timely feedback on reports
  - Identify and provide contact information, where applicable, for key stakeholders from government, civil society, UNDP, sector agencies and other partners
  - Send letter of introduction/support to key stakeholders, requesting their participation in the NAP design and development process
  - Assist with scheduling of interviews and organization of workshops
- Key Stakeholders will be available to support and effectively participate in project activities and provide feedback, where required. It will be important for consistency in participation of key individuals throughout the process, and for key stakeholder entities to select individuals at a decision making level to participate.
- There will be no natural disasters, disturbances or national events that will cause delays in the execution of project activities or delivery of outputs.

### Risk and Risk Mitigation

There are several risks that could negatively impact the pace of project implementation and effectively delivering the agreed outputs. These risks have been identified below, along with their occurrence probability and the associated risk mitigation strategies. The consultant will ensure that, where possible, risks will be anticipated and addressed. In support of this, risk tracking will form a key part of the overall risk mitigation approach that will be developed and implemented throughout the project. Where required, the consultant will enlist the assistance of UNDP/PMU and the NCCO to mitigate risks.

**Table 8: Risk Management Plan for development of the NAP for Belize**

<b>Risk</b>	<b>Probability of Risk Occurring (Low, Medium, High)</b>	<b>Risk Impact (Low, Medium, High)</b>	<b>Risk Management Strategy</b>
<b>Relevant data, information and documentation not shared in a timely manner</b>	Low	Medium	Seek assistance from UNDP and NCCO
<b>Protracted feedback/approval times</b>	High	High	Follow up with UNDP; request appointment of a GoB focal point to assist with timely feedback



<b>Risk</b>	<b>Probability of Risk Occurring (Low, Medium, High)</b>	<b>Risk Impact (Low, Medium, High)</b>	<b>Risk Management Strategy</b>
<b>Low levels of response to online communication</b>	Low-Medium	Medium	This medium will be used as a secondary source of information gathering and communication during times when the consultant is out of country. The Consultant will as far as is possible, engage in inperson communication, during each Mission to Belize. Where absolutely necessary the Consultant will use Skype and telephone calls to communicate.
<b>Unavailability of stakeholders to participate in focus group sessions, workshops etc.</b>	Medium – High	High	Seek assistance from UNDP and NCCO. Utilise initial introductory meeting to seek buy-in from key stakeholders and establish most effective communication lines. During this interaction, roles and responsibilities of stakeholders will be defined to aid in smooth flow of tasks.
<b>Decision makers for key entities not available to participate</b>	Medium – High	High	Follow up discussion with appropriate personnel to ensure agreement on specific issues
<b>Representatives of stakeholder agencies are not able to make informed decisions on priorities</b>	Medium – High	High	Provide a one week opportunity for further feedback from entity

## 6.0 References

1. Capacity Building for Low Carbon Development and the Development of a Roadmap (2015)
2. A National Adaptation Strategy to Address Climate Change in the Agriculture Sector in Belize (2014)
3. Belize's Fifth National Report to the Convention on Biological Diversity 2009-2013 (2014)
4. Belize Integrated Coastal Zone Management Plan (2013)
5. A National Climate Change Policy, Strategy and Action Plan to Address Climate Change in Belize (2014)
6. Enhancing Belize's Resilience to Adapt to the Effects of Climate Change (2014)
7. National Protected Areas System Plan (2015)
8. Government of Belize Policy on Adaptation to Global Climate Change
9. Mainstreaming Climate Change into Belize's Development Process. A succinct assessment of climate change risks and adaptation opportunities for the Tourism, Coastal Zone and Fisheries Strategies (2015)
10. Growth and Sustainable Development Strategy for Belize (2015)
11. Ministry of Energy, Science & Technology and Public Utilities Strategic Plan 2012-2017 (2012)
12. National Sustainable Tourism Master Plan for Belize 2030 (2011)
13. National Integrated Coastal Zone Management Strategy for Belize
14. National Integrated Water Resources Management Policy (Including Climate Change) for Belize (2008)
15. Aquatic Living Resources Bill (2012)
16. The National Climate Resilience Investment Plan (2013)
17. Belize's Third National Communication to the United Nations Framework Convention on Climate Change (2015)
18. Stocktaking Report: Transport and Energy
19. Assessment of Groundwater Resources in the Southern Coastal Water Province of Belize Referred to as Savannah Groundwater Province (2014)
20. Mitigation and Carbon Markets Investor's Guide Belize- Chapter 4.6: NAMAs as a Mitigation Option for Belize and Roadmap for Implementation (2014)
21. National Agriculture and Food Policy of Belize 2015-2030 (2014)
22. National Adaptation Strategy to address Climate Change in the Water Sector in Belize Strategy and Action Plan (2009)
23. Mitigation Project Portfolio and NAMA Ideas for the Energy and Waste Sectors in Belize (2014)
24. A Proposed Approach to the Development of a National Sustainable Development Strategy for Belize – DRAFT
25. Horizon 2030
26. Terms of Reference for the National Climate Change Committee (2016 rev.)
27. Terms of Reference for the Mitigation Sub-Committee (2016)
28. Terms of Reference for the Adaptation Sub-Committee (2016)
29. Terms of Reference for the Public Awareness and Outreach Sub-Committee (2016)
30. Abstract of Statistics. (2013)
31. JCCCCP Mission Summary May 2016.

32. Belize's Preparation for the National Review – Institutional Architecture (2016) 33.  
Annual Report 2015. Statistical Institute of Belize

## 7.0 Annexes

### Annex I: Terms of References for the Belize NAP

#### TERMS OF REFERENCE

##### **Technical Consultant for the Development and Design of an integrated National Adaptation Plans (NAP) for the Agriculture and Water Sectors**

<b>Project:</b>	Japan- Caribbean Climate Change Partnership
<b>Beneficiary Country:</b>	Belize
<b>Duration of Project:</b>	80 days within 12 months
<b>Type of contract:</b>	UNDP Individual Contract

#### **Background**

Caribbean countries share similar economic and sustainable development challenges, including a small population, remoteness, susceptibility to natural disasters, and most importantly, vulnerability to climate change and climate variability. Given the current condition of the marine environment, most coastal areas have few defences against the raging surfs of hurricanes and tropical storms, and the likely consequences would be significant to coastal damage including beach erosion and infrastructure damage. Negative impacts associated with climate change on land, water resources and biodiversity have also been predicted, and ultimately, tourism and agriculture will be negatively impacted by these changes. Meanwhile, even though Caribbean countries emit relatively small amounts of greenhouse gas, they will suffer disproportionately from the impacts of climate change.

The Japan-Caribbean Climate Change Partnership (J-CCCP) aims to support eight Caribbean countries in advancing the process of low-emission risk-resilient development by improving energy security and integrating medium to long-term planning for adaptation to climate change. Interventions under the Project include supporting policy innovation through the development of a number of Nationally Appropriate Mitigation Actions (NAMAs) and National Adaptation Plans (NAPs) and implementing actual technology that is both low-emission and advances climate risk management, including demonstration in the target countries. The participating countries include Belize, the Commonwealth of Dominica, Grenada, the Republic of Guyana, Jamaica, St. Lucia, St. Vincent and the Grenadines, and the Republic of Suriname. This project is funded by the Government of Japan and will be implemented by UNDP, with UNDP Barbados & the OECS sub regional office as lead agency.

As such the UNDP, together with the Government of Japan is providing assistance to these countries to support the integration of climate change considerations into their national and sectoral planning and budgeting processes, which are in line with the existing United Nations Framework Convention on Climate Change (UNFCCC) endorsed framework for NAPs. It is envisaged that this work will contribute to the regional effort towards the

mainstreaming of adaptation actions into the development framework, support concrete actions for inclusion into national fiscal space and greater access to international climate finance for implementation of priority actions.

### **Objective**

The consultant will provide technical assistance to the relevant government counterparts in Belize on design and development of a NAP roadmap and an integrated National Adaptation Plan for the Agriculture and Water Sectors.

### **Scope of Work**

The Technical Consultant, with guidance from the Government of Belize and relevant stakeholders in the beneficiary country and in close consultation with the J-CCCP Project Management Unit (PMU) within the UNDP Barbados and the OECS sub regional office and with UNDP Belize, will undertake all activities related to supporting the prioritisation of climate change adaptation actions, development of a national adaptation roadmap to guide the integration and implementation of identified actions and supporting the formulation of an integrated NAP for agriculture and water sectors for Belize. These actions should be guided by the Least Developed Countries Expert Group (LEG) technical guidelines for NAP development published by the UNFCCC.

The Technical Consultant has the following principal responsibilities, as well as other related tasks that the PMU may identify as necessary to the success of the Project in attaining its objectives:

#### **F. Stocktaking and gap analysis**

Review the work conducted under the J-CCCP Baseline Assessment and any other previous studies and identify any relevant additional information needed for a complete in country assessment of the NAP situation as it is related to the agriculture and water sectors. Areas for review should include but not be limited to the following:

##### **k. Current climate and climate scenarios**

- l. Existing sector plans strategies and policies**
- m. National capacities and resources (e.g. Information management systems, programmes, human resources and policies etc.) needed to engage in the NAP process**
- n. Institutional framework for adaptation planning**
- o. Barriers to planning, design and implementation of adaptation activities (e.g. systems, data, institutional and legislative frameworks, human capacity and expertise etc.)**
- p. Sustainable development efforts most at risk from climate change**
- q. Outline the gaps to be addressed based on analysis of the information collected including a review of relevant national policies and international commitments.**
- r. Expected impact of climate change on social development, as well as issues related to social inequality and poverty**
- s. Linkages between existing adaptation strategies and Disaster Risk Management activities**
- t. Outline the gaps to be addressed based on analysis of the information collected**

#### **G. Identification of NAP mandate**

- c. Through the process of stakeholder consultations, identify the needs and prioritise the gaps to be addressed**
- d. Define the scope of NAP process for the sector and the institutional framework for development and implementation based on the ranking of national and sector specific priorities.**

#### H. Formulation of NAP strategy and roadmap

- a. Development of strategy document (roadmap) for the NAP process which should outline the key stakeholders and their responsibilities as well as the strategic action and sequential steps for development and implementation. This strategy should also outline potential donor agencies/ sources of funds to support climate adaptation programmes.
- b. Monitoring and Evaluation plan for the NAP process
- c. Capacity Development Plan to address the needs and gaps within the identified sectors

#### I. Undertake climate risk and vulnerability assessment

- a. Analyze current climate information to identify trends to support the planning processes
- b. Using existing climate models, climate data and climate studies, define future climate risks and levels of uncertainty. Where necessary local level resolution/ data capture may be undertaken to address information gaps.
- c. Assess vulnerability to climate change at the sectoral and national levels
- d. Rank identified climate risks and vulnerabilities and align them with appropriate adaptation options
- e.

#### J. Development of National Adaptation Plan

- a. Identify scenarios and pathways for adaptation actions
- b. Appraise, priorities and rank identified adaptation options
- c. Develop integrated National Adaptation Plan for the agriculture and water sectors for submission to national government for review and national approval
- d. Validate draft document with relevant stakeholders and complete final NAP document.

### **Qualifications and Experience**

The candidate should be highly motivated and capable of working independently. The ability to work with a wide variety of stakeholders from governments, agencies, private companies, Non-Governmental Organizations (NGOs), and research institutions is essential. A good understanding of the institutional framework relating to climate change initiatives in the country is highly desirable. In addition, the Technical Consultant should possess:

- An advanced degree (Master's or higher) in areas relevant to climate change adaptation, agricultural science, agro-meteorology, hydrology or natural resource management.
- At least 10 years of relevant working experience in the areas of climate change adaptation, natural resource management and national development strategies.
- Six years of progressive responsibility in the project area
- Demonstrated ability and experience in the development of policy measures and implementation plans that can also be applied to NAPs, national adaptation frameworks and national budgeting and financial processes. The proponent should outline at least three relevant projects undertaken in the last five years, which highlight their experience in the development of similar instruments.
- Knowledge of and experience in the use of the LEG NAP development guidelines. A brief description of past experience in the use of these guidelines should be included in the offer.

- Good organizational skills, especially for facilitating meetings, workshops and writing reports.
- Experience working with international donors and UNDP.
- Experience working with a variety of stakeholders in Belize, the Caribbean, or Small Island Developing States (SIDS) would be an added advantage.
- Demonstrated analytical, communication and report writing skills. Outline at least three technical, policy, scientific or research publications undertaken within the last five years.

### **Duration of Work**

Work under this assignment is to be undertaken within 80 days spread over a period of twelve months.

### **Location of Work**

The consultant will operate from their home base, and undertake at least four missions to the country as necessary.

### **Expected Deliverable and Schedule**

The contract price is a fixed output-based price regardless of extension of the herein specific duration. The Financial Proposal will include all fees and costs associated with the execution of the contract, including professional fees, travel, equipment and all other expenses that will be incurred during the execution of the work. Should unforeseeable travel to the country be required which exceeds the four anticipated country missions outlined in Section 6 “Location of Work”, UNDP will reimburse all related travel costs.

Reimbursement will be calculated at the rate for travel and associated expenses established and agreed to within the final contract. It should be noted that justification must be provided by the proponent and prior written approval obtained from the UNDP before unforeseeable travel is undertaken.

Payment for the deliverables will be remitted subject to the approval of final submissions by UNDP and the Government and based on the Consultant’s Proposal. Expected submission periods and proposed payment allocations are as follows:

No.	Deliverable	Submission Period	% of Payment
1	Inception Report	Within 2 weeks of contract signature	5
2	NAP assessment report	Within 2 months of contract signature	10
3	NAP road map/ strategy document inclusive of Capacity Development and M&E plans	Within 4 months of contract signature	20
4	Climate risk and vulnerability assessment report	Within 6 months of contract signature	20
5	Draft NAP document	Within 9 months of contract signature	25
6	Final NAP document and Stakeholder Validation report	Within 12 months of contract signature	20

### **Institutional Arrangements**

The Technical Consultant will report directly to the J-CCCP Project Manager with support from the Technical Specialists. At the end of the contracted time period, the Technical Consultant shall submit all project outputs to the PMU, which will be assessed for validity and completeness of required information, and should be in the desired format identified by the beneficiary country. Once approved by the PMU, all outputs become the property of the beneficiary country to utilise and disseminate as deemed necessary.

### **Reporting Requirements**

All deliverables should be submitted with Microsoft Word format and a PDF format for web publishing. If relevant, copies of high resolution maps and graphics should also be submitted to the J-CCCP Project Manager.

The Technical Consultant will provide monthly briefs and updates to the Project Manager and the respective UNDP personnel on the progress of the work, challenges encountered, risks foreseen, proposed or taken mitigation measures, and areas where UNDP support may be required.

## Annex 2: Matrix for Stakeholder Analysis

STAKEHOLDER	CONTACT PERSON (WITH CONTACT DETAILS)	IMPACT (How much does the NAP development process affect them? (Low, Medium, High))	INFLUENCE (How much influence do they have over the NAP development process? (Low, Medium, High))	WHAT IS THE IMPORTANCE OF THE STAKEHOLDER?	HOW COULD THE STAKEHOLDER CONTRIBUTE TO NAP DEVELOPMENT?	WHAT ROLE CAN THE STAKEHOLDER HAVE IN NAP IMPLEMENTATION?	HOW COULD THE STAKEHOLDER BE AN OBSTACLE OR BLOCK THE PROCESS?	STRATEGY FOR ENGAGING THE STAKEHOLDER



### Annex 3: AIM outline for alignment of adaptation options with national development

Priority No.	Adaptation Option	Supporting GSDS Critical Success Factor (CSF) and/Necessary Condition	Supporting Horizon 2030 Outcome

Matrix A: Effects of key VA areas on development goals and policies

		Vulnerability & Adaptation (VA) areas		
		Economic	Environmental	Social
		.....	.....	.....
		.....	.....	.....
Development Goals/Policies				
A	.....			
B	.....			
C	.....			
D	.....			

61 Matrix B: Effects of key development goals and policies on VA areas

		Vulnerability & Adaptation (VA) areas		
		Economic	Environmental	Social
		.....	.....	.....
		.....	.....	.....
Development Goals/Policies				
A	.....			
B	.....			
C	.....			

D	..... .....			
---	----------------	--	--	--