Inter-American Development Bank

Status of Incorporation of Disaster Risk Management and Climate Change Adaptation in National Public Investment Systems

Results for The Bahamas, Guyana and Jamaica and Comparative Analysis for Five Caribbean Countries

Environment, Rural Development and Disaster Risk Management Division

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Abbreviations and Acronyms

BEST	The Bahamas Environmental, Science and Technology Commission
BIA	The Bahamas Investment Authority
CARICOM	Caribbean Community
CBA	Cost Benefit Analysis
CCA	Climate Change Adaptation
CCRIF	Caribbean Catastrophe Risk Insurance Facility
CDB	Caribbean Development Bank
CDC	Civil Defence Commission
CDEMA	Caribbean Disaster Emergency Management Agency
CDM	Comprehensive Disaster Management
DEC	Disaster Emergency Committee
DRM	Disaster Risk Management
EIA	Environmental Impact Assessment
HRA	Hazard and Risk Assessment
IADB	Inter-American Development Bank
ICZM	Integrated Coastal Zone Management
ICZMP	Integrated Coastal Zone Management Planning
INE	Infrastructure and Environment Sector
MIND	Management Institute for National Development
NDMP	National Disaster Management Plan
NEMA	National Emergency Management Initiative
NPIS	National Public Investment Systems
OAS	Organization of American States
PCMD	Policy Cycle and Management Division
PIOJ	Planning Institute of Jamaica
PIP	Project Investment Portfolio
PPT	Power-Point Presentation
RMD	Risk Management Division
RIVAMP	Risk and Vulnerability Assessment Methodology Project
SLOSH	Sea, Lake and Overland Surges from Hurricanes
USAID	United States Agency for International Development

Executive Summary

Background

Integration of disaster risk management (DRM) and climate change adaptation (CCA) in public investment must be seen as a direct intervention policy decision making and hence, as part of the national DRM strategies within the Region to reduce both exposure and socio-economic vulnerability to the multiple hazards that pose significant risks to sustainable development. Governments must therefore give tangible support to the development of laws, standards and regulations, and conceptual and methodological frameworks, plus the application of DRM and CCA tools to public investment portfolios.

In 2012, the IDB developed a methodology to assess the status of and progress in the incorporation of DRM and CCA in National Public Investment Systems (NPIS) of its borrowing countries. The methodology, described in detail in Section 2 of this report, includes a total of 23 parameters that categorise five (5) criteria, namely: (i) institutional framework for NPIS; (ii) development of conceptual models, methodologies and tools to incorporate DRM in Public Investment Project (PIP); (iii) dissemination, training, technical support and information on the incorporation of DRM and CCA in NPIS; (iv) policy consensus and follow up on the gradual adoption of technical tools for the incorporation of DRM in NPIS; and (v) mechanisms of control.

This Technical Note presents the results of the application of the IDB's methodology for the assessment of the status of the incorporation of DRM in NPIS and PIPs in three Caribbean countries: The Bahamas, Guyana and Jamaica, and a comparative analysis of the results for five countries viz[1]. The Bahamas, Guyana and Jamaica, Barbados, Trinidad and Tobago[2]. The progress in each of the 23 parameters is evaluated on three levels: green (accomplished), yellow (in progress) and red (incipient). This information provided by the interviewees was supplemented and/or validated by means of a desk review of accessible documents on aspects of the NPIS in the targeted countries.

Main Findings

- Generally, the institutional framework for NPIS in the five targeted countries is completed or at least partially completed. The absence of manuals to guide the NPIS process is definitely an issue that requires urgent attention, since only Jamaica has made progress in this area, but there is room for improvement. Technical supervision should be improved in Guyana, Barbados and Trinidad and Tobago.
- Conceptual models are virtually non-existent in The Bahamas, Guyana, Barbados, and Trinidad and Tobago, while only partially accomplished in Jamaica. Further, mechanisms for technical approval of the PIP for the reconstructing without risks and the building codes should be improved.

[1] The preparation of this report was funded by the Institutional Capacity Strengthening Fund (ICSF), thanks to the contribution of the Government of the People's Republic of China.
[2] See IDB (2014) for the results for Barbados and Trinidad and Tobago.

- Overall, Jamaica has shown the highest level of achievement, while Guyana has been very progressive in the area of Outreach, training, technical assistance and information on incorporating DRM and CCA in PIPs. On the other hand, The Bahamas, Barbados and Trinidad and Tobago have at least two parameters (No structured mechanisms were identified for information and training on the application of concepts and methodologies to incorporate DRM in the NPIS) rated as incipient under this Criterion. The lack of technical assistance in the incorporation of DRM and CCA in PIP is also noted.
- None of the targeted countries have regulations governing the minimum parameters of the DRM in public investment or statutory deadlines for the incorporation of DRM and CCA in PIP.
- All the countries with the exception of Guyana for Parameter 1 of Criterion 4 were evaluated as being incipient under this criterion. Guyana has partially accomplished the established of mechanisms to identify, exchange and dissemination of successful experiences. Overall, all targeted countries need to develop capacities in respect of this criterion, given its importance to the operationalisation of DRM and CCA in PIPs.
- All countries need to create and/or enhance their institutional capacity with regard to (i) the control, audit and verification of compliance of the NPIS; and (ii) sanctions for noncompliance with the incorporation of DRM and CCA in PIP by control and audit authorities or other relevant institutions at the national level.

Key Messages

- The incorporation of DRM and CCA in NPIS can significantly reduce the immediate losses and cost of recovery from impacts associated with natural hazards and climate change. It may be seen as proactive resilience building.
- A viable approach to addressing the common risk management challenges of Caribbean countries in respect of DRM and CCA is the consolidation of methodologies, the PIP approval process, knowledge and information sharing, and capacity building (particularly training).
- The extent to which efforts are taken by each of the individual countries to incorporate DRM and CCA in PIP depends largely on the existence of an enabling institutional environment along with trained personnel and the demonstration of political commitment and will are essential elements for the successful implementation incorporation of DRM and CCA in PIP.
- To ensure positive results of initiatives aimed at incorporating DRM and CCA in PIP, all countries need to strengthen their monitoring and enforcement capabilities.
- Countries need to embrace a culture of evidence based decision making that will require the allocation of funds for a rigorous and sustained data collection system that will support the application of DRM and CCA risk assessment tools.
- Standardized manuals on the conceptual models and the application of risk assessment tools should be developed and disseminated to Caribbean countries. This should be complemented by biennial regional/sub-regional meetings that may

be financed by the IADB. These forums will allow for sharing of experiences and best practices of the incorporation of DRM and CCA in PIP.

- The Ministry of Finance (MOF) must be a central/lead agency in these efforts and must be engaged across the entire project and policy process.

1 Introduction

1.1 Background and Justification

Small Island Developing States (SIDS), including Caribbean states, have been described as generally facing resilience and sustainability challenges arising from their small size, open economies and in most cases limited natural, human and financial resources, which can restrict their capacity to diversify their economic activities and increase their vulnerability to exogenous economic shocks (Rasmussen, 2004; Easterly and Kraay, 2000). In addition, they experience difficulty in adequately managing their environment (Turvey, 2007) and are often highly susceptible to the effects of natural hazards such as tropical storms and hurricanes (CDEMA, 2014); and earthquakes.

The consequences of the impacts of climate change are global, however, SIDs are among the most vulnerable. The dozens of Caribbean island nations and coastal dependent nations (e.g. Guyana, Suriname), and the people who live in these locations are in the front lines of vulnerability to climate change impacts. Hotter temperatures, sea-level rise and increases in intensity of natural disasters will threaten the lives, property and livelihoods throughout the Caribbean. The unpredictable and extreme weather (that is more likely than not to be climate change induced) will impact significantly on agriculture and food security, tourism, health and water management, challenging key economic sectors and Caribbean communities (Bueno et al., 2008).Tables 1.1 and 1.2 show the impacts of severe weather events on selected Caribbean countries.

Table 1.1 Selected Major Tropical Storms and their Impacts on Caribbean Countries

Year	Country	Total fatalities	Total damage US$ (approx.)	Storm Name and Speed	
				Name	Speed mph
2015	The Bahamas	34	60 million	Joaquin	155
2004	The Bahamas	2	381.5 million	Francis; Jeane	145
2010	Barbados	-	336.2 million	Tomas	92
2015	Dominica	36	511.7 million	Erica	50

Source: ECLAC, 2004; CDEMA, n.d.

Table 1.2 Effects of the Flood Hazards in Guyana and Trinidad and Tobago

Event	Year	Country	Deaths	Population Affected	Loss in US$
Flood	2005	Guyana	37	274,774	$2,680,877,547
Flood	2014	Trinidad and Tobago	2	Several communities	$15,555,050

Source: ECLAC, 2006; IICA, 2005; IDB, 2013.

Droughts are another natural hazard that has increasing effects on Caribbean economies. Notably, in 2009-2010 and 2012-2013 many Caribbean countries received below average rainfall levels during the rainy season heading into the dry weather spell. This meant that many countries were heading into the dry spell with a water deficit characterised by an extended period of dry weather that affected the water supply, agricultural sector and cattle farmers causing significant losses, as briefly outlined below.

The impact of natural disasters and climate change requires significant investment as a proactive approach to disaster preparedness, risk reduction and climate change adaptation. The reality, however, is that constrained budgets, high debt levels and restricted access to insurance risk transfer due to the costs, have generally limited the capacity of SIDS including those in the Caribbean to absorb the financial impacts of natural hazards. Unarguably, inadequate responses to these events stymie recovery and have been identified as leading to negative secondary socioeconomic effects (Cashin et al., 2006). Further, the loss of life and negative economic and social consequences of disaster events in several islands of the Caribbean demonstrate the need for general implementation of effective disaster risk management (DRM) mechanisms at the national and local level. Integration of DRM and CCA in public investment must be seen as a direct intervention policy decision making and hence, as part of the national DRM strategies within the Region to reduce both exposure and socio-economic vulnerability to the multiple hazards that pose significant risks to sustainable development. Governments must therefore give tangible support to the development of laws, standards and regulations, and conceptual and methodological frameworks, plus the application of DRM and CCA tools to public investment portfolios.

1.2 Caribbean Disaster Risk Management Framework

In 2001, the Caribbean Community (CARICOM) adopted a Comprehensive Disaster Management (CDM) as the regional strategy for DRM. CDM involves "...all actions required to ensure that a country or jurisdiction has the capability to deal with all types of hazards, at all phases of the Disaster Management Cycle: Prevention and Mitigation,

Preparedness, Response and Recovery by coordination of the wide-ranging actions and utilizing all necessary resources available from numerous agencies" (CDEMA, 2007). The objective of the Regional CDM Strategy was to integrate DRM in the development process of all CDEMA participating states.

More recently, CDEMA has approved a Regional CDM Strategy and Programming Framework for the period 2014-2024 with the aim to realize "safer, more resilient and sustainable CDEMA Participating States through Comprehensive Disaster Management" (CDEMA, 2014). This goal is supported by four high level priority outcomes:

- Outcome 1: Strengthened institutional arrangements for CDM implementation at national and regional levels;
- Outcome 2: Increased and sustained knowledge management and learning for CDM;
- Outcome 3: Improved effectiveness of CDM at sectoral levels; and
- Outcome 4: Strengthened and sustained capacity for a culture of safety and community resilience in Participating States.

Four cross-cutting themes viz. gender mainstreaming, climate change, ICT (Information Communications Technology) and environmental sustainability underpin the Strategy and Programming Framework. These build on the outcomes of the previous strategy but also include focus on a more strategically aligned and integrated risk management approach where climate change considerations are integrated into priority sectors (agriculture, tourism, education, finance and health). It is noteworthy that the current CDM strategic framework not only promotes an integrated approach to managing risks, but also provides an 'entry point' for DRM and CCA be integrated in national public investment systems (NPIS) via the various sectoral policies, programs and projects.

1.3 Context of the study

In 2012, the IDB developed a methodology to assess the status of and progress in the incorporation of DRM and climate change adaptation (CCA) [3] in National Public Investment Systems (NPIS) of its borrowing countries. The methodology, described in detail in Section 2 of this report, includes a total of 23 parameters that categorize five (5) criteria, namely: (i) institutional framework for NPIS; (ii) development of conceptual models, methodologies and tools to incorporate DRM in Public Investment Project (PIP);

[3] According to the UNFCC, adaptation refers to adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts. It refers to changes in processes, practices, and structures to moderate potential damages or to benefit from opportunities associated with climate change. Adaptation activities span five general components: observation; assessment of climate impacts and vulnerability; planning; implementation; and monitoring and evaluation of adaptation actions.

(iii) dissemination, training, technical support and information on the incorporation of DRM and CCA in NPIS; (iv) policy consensus and follow up on the gradual adoption of technical tools for the incorporation of DRM in NPIS; and (v) mechanisms of control. To date, the methodology has been applied in eight (8) countries (Barbados, Colombia, Costa Rica, Guatemala, Mexico, Panama, Peru and Trinidad and Tobago).

The NPIS refers to *a set of standards, instruments and procedures common to the public sector and private sector entities that execute public investment (nongovernmental organizations) which enable them to relate to each other and coordinate their efforts so that they can prepare evaluate, evaluate, prioritize, finance, follow-up and execute public investment projects within the framework of development policies, plans and programs* (Ortegón and Dorado, 2006: p9). According to CEPREDENAC (2012), the NPIS should support the approval and financing of appropriate projects that best serve national objectives. Thus, the PIP is seen as that basic unit of management of resources, activities and time to achieve a specific product that contributes to developmental, economic, social and environmental outcomes.

Essentially, some of the common functions of NPIS coordinating institutions should include:

- Training for participating actors in public investment;
- Development of legal instruments as well as functioning, normative and technical methods and tools;
- Technical viability assessment and evaluation of the economic and social profitability of projects;
- Preparation and formulation of PIPs;
- Technical approval of project formulation;
- Information management of PIPs;
- Monitoring implementation and follow up of the public investment process; and
- Management of financial resources in some countries.

Within this framework, for DRM to be incorporated in an effective way into systems and processes of planning and execution of public investment, it must be reflected explicitly in:

a. Laws and Regulations that determine the minimum content of the pre-investment studies;
b. General and specific methodologies and measures for incorporation of DRM; and
c. Registration of public investment portfolios on a Project banks.

According to the IDB (2014), the analysis of incorporation of DRM in Project Investment Portfolio (PIP) is based on the evaluation of risk analysis of the methodological steps

and tools of a project. Risk analysis is a set of tools that are applied to the pre-investment, investment and operation stages of a project. At the pre-investment stage, tools for hazard and vulnerability analysis, risk estimates, and incorporation of risk reduction measures are applied. At the investment stage, a detailed analysis and implementation of risk reduction measures are applied. And finally, at the project operation stage, monitoring and evaluation of risk management indicators are applied[4].

The bodies generally responsible for coordinating NPIS in the Caribbean include (Ortegón and Dorado, 2006):

- The line Ministries under whose remit a project falls and in which the project idea is often generated and the budgetary approval process is undertaken;
- The Planning Ministries that manage the NPIS budget, review the progress of many projects and make recommendations for budgetary funding;
- The public sector special purpose agencies (SPC) (in the case of Trinidad and Tobago such as the Urban Development Corporation of Trinidad and Tobago Limited (UDeCOTT)) that execute the projects, monitor the technical progress and implementation; and
- Special advisory or technical committees that supervise national planning or special PIPs.

The functions governing institutions of public investment in the Caribbean vary by institution and in some cases by project. Common functions include:

- Analysis of the economic and social profitability of the project;
- Preparation of pre-feasibility studies and cost estimates to obtain Cabinet approval;
- Development and formulation of the PIP (often in concert with contracted consulting firms or
  individual consultants for large projects);
- Obtaining budgetary approval in the national budget, Execution of projects, Monitoring execution of the projects; and
- Managing the national public investment budget.

Analysis of the incorporation of DRM in PIPs is based on the evaluation of risk analysis applied to the methodological steps and tools used in a project. Risk analysis is a set of tools that are applied to the pre-investment, investment and operation stages of a project. At the pre-investment stage, tools for hazard and vulnerability analysis, risk estimates, and incorporation of risk reduction measures are applied. At the investment stage, a detailed analysis and implementation of risk reduction measures are applied,

[4] PREDECAN. Incorporando la Gestión del Riesgo, pág. 54.

and finally, at the project operation stage, monitoring and evaluation of risk management indicators are applied (PREDECAN, 2009).

1.4 Objectives and Scope

This Technical Note presents the results of the application of the IDB's methodology for the assessment of the status of the incorporation of DRM in NPIS and PIPs in three Caribbean countries: The Bahamas, Guyana and Jamaica, and a comparative analysis of the results for five countries viz. The Bahamas, Guyana and Jamaica, Barbados, Trinidad and Tobago[5]. The Note includes an explanation of the model that served as the basis for the study, including the criteria, parameters and a description of the data and information collection process. The findings of the assessment for each of the three countries and the comparative analysis for the five countries are presented along with key messages/lessons learned. The results presented in this Technical Note were used as the reference document to inform discussion at a Regional Policy Dialogue on the *Status of Incorporation of Disaster Risk Management and Climate Change Adaptation in National Public Investment in the Caribbean* that was be held in Barbados on October 29-30, 2015.

[5] See IDB (2014) for the results of the study for Barbados and Trinidad and Tobago.

2 Methodology

2.1 Operational Framework

The IDB methodology required that a questionnaire be administered via interviews with senior officials at the level of Technical Head or Director in the Ministry responsible for the National Public Investment function as well as National DRM and CCA agency. Additionally, senior officials at Ministries or other bodies that account for the major portion of the public investment budget in each country have been identified as important sources of data, while relevant professional associations and research institutions such as the national engineers associations and universities are regarded as desirable.

The questionnaire, presented in Annex 1, comprises 23 parameters that categorize five (5) criteria mentioned under Sub-section 1.3 (Context of the Study). The progress in each of the 23 parameters is evaluated on three levels: green (accomplished), yellow (in progress) and red (incipient), described in Sub-section 2. 2. The criteria and parameters used in the study are detailed in Annex 2.

This information provided by the interviewees was supplemented and/or validated by means of a desk review of accessible documents on aspects of the NPIS in the targeted countries[6]. Details of the organizations surveyed and the Office held by the interviewees are presented in Annex 3.

2.2 Application of the methodology of the study

The questionnaire was designed based on the criteria and related parameters that were examined. For each country, every parameter was assessed on the three-item ordinal

[6] The results were also validated by regional participants attending the Regional Policy Dialogue on the *Status of Incorporation of Disaster Risk Management and Climate Change Adaptation in National Public Investment in the Caribbean* held in Barbados on October 29-30, 2015.

scale of color with green representing accomplishment of the parameter, yellow indicating progress towards accomplishment and red indicating no progress identified although there may be isolated and sporadic actions taken.

The interpretation of each color is as follows (The Assessment Matrix/ Questionnaire at Annex 1 refers):

Green	Parameter fulfilled or accomplished in the country.
Yellow	There is progress in the fulfillment of the parameter. However, there are actions pending.
Red	Actions aimed at the fulfillment of the parameter are non-existent or very incipient and isolated

During the interviews, respondents were requested to give their perception or experience on incorporating DRM and CCA concepts or methodologies in the NPIS and any program of dissemination of information and training in this regard.

The assessments were based on the responses from interviews conducted with officers and technical personnel from public institutions in the three countries: Bahamas, Guyana, Jamaica, and triangulated with documentation, as well as professional judgement.

It is important to note the following:

- The selection of interviewees was informed by identification of institutions that are involved in or relevant to the NPIS and the DRM and CCA functions in each of the five countries.

- As required in the methodology, those interviewed provided their personal opinions about the criteria and parameters of the incorporation of DRM and CCA in the NPIS. Accordingly, the assessments represent their perceptions and interpretations regarding the level of progress of the parameters and any evidence derived from supporting documentation indicated or provided by interviewees, as well as other related published information.

The assessment of the status of DRM and CCA in NPIS in Barbados and Trinidad and Tobago was conducted in 2014 and the results, which are presented in IDB (2014), have been incorporated in the comparative analyses of the five countries.

The data obtained from the interviews as well as the supporting documentation were analysed both quantitatively and qualitatively as deemed necessary to present the results and to articulate the issues.

3 Country Results

This section presents the results and analysis on the status of the incorporation of DRM and CCA in the NPIS in The Bahamas, Guyana and Jamaica, based on information acquired in the interviews held with officials and technicians from selected institutions and validated by content review of documents and the professional judgement of the consultant, as described in Section 2.2 above.

3.1 The Bahamas

3.1.1 Institutional framework and national systems of public investment

The results of the assessment of the seven parameters of evaluation for this criterion are presented in Table 3.1. In the case of The Bahamas six parameters have been rated in green and one in red. The latter relates to the existence of manuals for the NPIS.

Table 3.1 Criterion #1 and Parameter Evaluation of the Incorporation of DRM in NPIS in The Bahamas

Criterion #1	Parameter	Evaluation
Institutional framework for processes and national systems of public investment	Existence of legislation for the NPIS	Green
	Existence of an organizational structure for the functionality and coordination of NPIS	Green
	Existence of regulations for the NPIS.	Green
	Existence of manuals for the NPIS.	Red
	Existence of mechanisms of technical approval of the PIP.	Green
	Existence of technical supervision for the implementation of projects.	Green
	Existence of mechanisms for the dissemination and access to material related the rules and presentation of the PIP	Green

i. Existence of legislation for the NPIS

Rated green. The Bahamas Investment Act (BIA) is considered as the first point of contact for investors to the country and serves to channel and facilitate investment approvals. It operates out of the office of the Prime Minister and is designed as a "one stop shop" to simplify investing in the Bahamas. The BIA operates on four mandates to promote Investment, evaluate project proposals, monitor and co-ordinate project implementation; and develop investment policies (Government of The Bahamas, 2011). Respondents also cited several existing pieces of legislation that serve as the framework for compliance for the NPIS. These include the Financial Administration and Audit (FAA) Act (2010) which provides for the administration, control and audit of the public finances. The purpose of this Act is to monitor the use and management of public resources, for use in fiscal matters and investment that encourages sustainable economic growth and development, with regards to equity and social policies (Government of The Bahamas, 2011). In addition, there is (i) the Investment Funds Act (2003) that governs the licensing and registration of investment fund administrators, as well as the investment funds in The Bahamas, and (ii) the Financial and Corporate Service Providers Act (2000) that provides for licensing and regulation of financial and corporate service providers and for connected purposes (Securities Commission, 2012). Additionally, there exists the Securities Industries Act (2001) that provides for the supervision and regulation of the activities of the investment funds; securities and capital markets.

ii. Existence of an organizational structure for the functionality and coordination of NPIS

Rated green. Respondents cited the Ministry of Financial Services and Investment that manages public investment and utilization of public resources. The areas of responsibility of the ministry include: promotion of financial services; relations with the Bahamas Financial Services Board; Trade and industry; manufacturing; financial services, product innovation & promoting collaboration with the private sector; International trade; industries development encouragement and development and promotion of international commercial Arbitration center (Government of The Bahamas, 2011).

Moreover, the Securities Commission, a statutory body established in 1995, responsible for the administration of the Securities Industries Act (2001). Essentially, the Securities Commission has been appointed as inspector of the financial and corporate services. It is noteworthy that the Securities Commission and the Ministry of Financial Services and Investment are also involved in managing public investment and utilisation of public resources.

iii. Existence of regulations for the NPIS

Rated green. As noted by respondents, the BIA highlights several regulations such as the Investment Funds Regulations (2003), the Financial and Corporate Service Providers Regulations (2001), as well as the Financial transactions Reporting Regulations (2000) and the Securities Industry Regulations (2000) and the Securities Industry Regulations Amendment (2012) for which all potential investors are required to follow. Importantly, the FAA Act (explained under 'Existence of Legislation for NPIS') also contains regulations for all investment and use of public funds.

iv. Existence of manuals for the NPIS

Rated red: There exist no specific manuals for the NPIS; however, respondents indicated that there are provisions under the Investment Funds Act (2003) for required documentation as well as procedures and conditions for applications for licensing and registration of investment funds, including a certified copy of the constitutive documents of the investment fund; details necessary to satisfy the licensor that the applicant is a fund as provided for in sections 4 or 5 of the Act; the prescribed fees; and such other information and documentation as the licensor may reasonably require for the purpose of determining the application.

v. Existence of mechanisms for technical approval of PIPs

Rated green. Mechanisms for technical approval of PIPs do exist in various government bodies: for instance, all PIPs that deal with infrastructure and construction must be submitted to the Ministry of Works and Urban Development for approval. Additionally, The Bahamas Environment, Science and Technology Commission (BEST) ensures that projects that may cause harm to the environment are subjected to an Environmental Impact Assessment, and a mitigation plan must be development for PIP as a condition for approval. In addition, the BIA as the main investment body of the Bahamas also has mechanisms that are required to be fulfilled before approval is given for foreign investments. An important stakeholder in this approval process is the National Economic Council (NEC), an agency headed by the Prime Minister, and has responsibility for decision making with respect to all commercial projects undertaken by foreign direct investors.

vi. Existence of technical supervision for the implementation of projects

Rated green. Technical supervision of the execution of PIP occurs at the sector level. Respondents cited the Ministry of Works and Urban Development supervises projects that fall under its jurisdiction, including road construction and other infrastructure development; as well as BEST that supervises and monitors environmental aspects of the PIP.

vii. Existence of mechanisms for the dissemination and access to material related to the rules and presentation of PIPs

Rated green. Respondents cited a number of ministries and agencies in the Bahamas utilise the internet to disseminate information and make material which is related to rules and presentation of PIPs accessible. These include the Bahamas Information Services Department (BISD) that provides a central channel for the flow of information to and enquiries from the public, press and other media of communication. The Liaison Officer of the agency is assigned to disseminate information, the BEST Commission also posted online material, while the Ministry of Works and Urban Development would post bids on the internet from which technical information on PIPs can be accessed. Notably, the Freedom of Information Bill (2012) reinforces and gives effect to the principles underlying the system of governmental accountability and transparency, among others.

3.1.2 Development of conceptual models, methodologies and tools for the incorporation of DRM and CCA in PIP

Table 3.2 presents the results of the assessment of criterion 2 that comprises six parameters. Notably, the Bahamas has been assigned two parameters in green, one in yellow and three in red.

Table 3.2 Criterion #2 and Parameter Evaluation of the Bahamas

Criterion #2	Parameter	Evaluation
Development of conceptual models, methodologies and tools for incorporation of DRM in PIP	Existence of conceptual models for the incorporation of DRM in public investment portfolios	Red
	Existence of methodologies for incorporation or DRM in PIP	Green
	Existence of technical tools for the incorporation of DRM in NPIS.	Green
	Existence of mechanisms of technical approval of the PIP with inclusion of risk analysis.	Red
	Existence of mechanisms of technical approval of the PIP for the phase reconstruction.	Red
	Existence of other instruments such as building codes, environmental impact assessment which are used at a general level both in public and private sector.	Yellow

i. Existence of conceptual models for the incorporation of DRM and CCA in PIPs

Rated red. Respondents had no knowledge or record of the inclusion of the description of conceptual models for the incorporation of DRM and CCA in the PIP as an element of the NPIS legislation. Although respondents cited several documents that serve as the points of reference for the conceptualisation process, including the Disaster Preparedness and Response Act (2006), draft National Disaster Management Plan (NDMP), 2003, a National Policy for the Adaptation to Climate Change (2005), these documents do not specifically address mitigation of disaster risks. For instance, the aim of the NDMP is "to establish a process and structure for the systematic, coordinated and effective delivery of national assistance to address the consequences of any major disaster or emergency". In addition, one respondent argued that it provides policy guidance on disaster risk management activities in vulnerable areas. Moreover, it was stated that the latter (outlines one of its policy objectives as '*develop appropriate economic incentives to encourage public and private sector investment in adaptation measures, with such corresponding principles* as (i) *integrate climate change adaptation policies, plans and projects into the national planning and budgetary processes; (ii) ensure that adequate physical and socioeconomic planning is undertaken on a continuing basis to address the impacts of climate change; and (iii) procure and allocate adequate financial and other resources to ensure that climate change issues are effectively addressed'.* It should be noted that other relevant pieces of legislation (including the Conservation and Protection of the Physical Landscape of the Bahamas Act (1997) not specific to the NPIS) that are designed to deal with CCA and DRM.

ii. Existence of methodologies for incorporation of DRM and CCA in PIPs

Rated green. Currently, the BIA requires that all proposals for development actions in the country include an environmental risk analysis and mitigation plan. Respondents noted that by making this step mandatory for approval, it would include the incorporation of CCA and DRM in areas where applicable (CDERA, 2003). In addition, the BEST Commission and the Ministry of Works and Urban Development consider disaster and climate change risks during feasibility studies. Moreover, procedures for the EIAs allow for the incorporation of DRM and CCA in PIPs, particularly those that are financed by development partners such as the IADB and Caribbean Development Bank (CDB). By including this step as mandatory for approval, it would include the incorporation of CCA and DRM in areas where applicable (CDERA, 2003).

iii. Existence of technical tools for the incorporation of DRM and CCA in NPIS

Rated green. Respondents noted that while there is no formal policy or legislation of the NPIS that specifies the types of tools to be adopted for the

incorporation of DRM and CCA in PIP. The existence and application of tools is sector specific: for example, the Department of Meteorology applies flood modelling tools for site evaluation, while the Ministry of Works and Urban Development utilises Cost Benefit Analysis (CBA) and Hazard and Risk Analysis (HRA) for infrastructural projects, such as ports, docks and bridges. Further, Integrated Coastal Zone Management Planning (ICZMP) is used as a tool to help manage the impact of natural hazards (including floods, storms and hurricanes) on coastal areas.

iv. Existence of mechanisms of technical approval of PIPs with inclusion of risk analysis

Rated red. Currently, there are no formal mechanisms that include risk analysis and are widely applied to the process of approval of PIP. However, as indicated by the respondents, there are isolated cases such as the Ministry of Works and Urban Development that require Hazard Risk Analysis for infrastructural projects.

v. Existence of mechanisms of technical approval of PIPs for the phase of reconstruction

Rated red. Respondents attributed the absence of formal mechanisms to several factors, including: (i) traversing the island to conduct site visits and to inspect projects poses a challenge to Ministry of Works and Urban Development; (ii) the problem of accessibility compromises enforcement; and (iii) even though risks are considered there is a general problem of monitoring of projects to ensure compliance. There are only isolated cases in which resilience building is considered, for example the Highway Reconstruction and Glass Window Bridge projects. Another example cited by respondents is the Bahamas Defence upgraded base facilities of The Bahamas Defence. This initiative included re-design of the base, increasing in depths and expansion of facilities in view of the risk posed by disasters and climate change.

vi. Existence of other instruments, such as building codes and environmental impact assessment which are used at a general level both in the public and private sectors

Rated yellow. Interviewees alluded to the Bahamas Building Code [7] and associated guidelines for minimum standards, provisions and requirements for safe and stable building design, methods of construction and uses of materials in building and/or structures hereafter erected, constructed, enlarged, altered,

[7] The provisions of this code supplement The Building Regulations Act 1971 and the Subsidiary Legislation made there under and form a condition of the approval of each and every building permit.

repaired, moved, converted to other uses or demolished, to regulate the equipment, materials, use and occupancy of all buildings. There is also the EIA that includes the preparation of an Environmental Management Plan. Importantly, however, the use of these instruments is not uniformly enforced across sectors and projects. For example, EIAs are not usually conducted for all public projects, particularly those funded by the State; also current mechanisms for compliance monitoring need strengthening.

3.1.3 Technical assistance and information on incorporating DRM and CCA in PIPs

This criterion is evaluated by five parameters as displayed by Table 3.3. The results of the assessment of technical assistance and information on the incorporation of DRM and CCA indicate that The Bahamas has been rated two parameters in green, one in yellow and two in red.

Table 3.3 Criterion #3 and Parameter Evaluation of the Bahamas

Criterion #3	Parameter	Evaluation
Outreach, training, technical assistance and information on incorporating DRM in PIP	Existence of processes of sensitization for authorities and national and sub-national officers, private sector , civil society and others in respect to the importance of incorporating DRM in PIP	Green
	Existence of technical assistance to the institutions that manage the system to formulate PIP, with emphasis on the specific application of the concepts and methodologies developed by the government.	Red
	Existence of personnel responsible for the project design trained in the application of the methodology of risk analysis.	Red
	Existence of inventories for public infrastructure by the	Green

	sector or territory.	
	Existence of timely and reliable information of hazards, vulnerability and risks available to PIP formulators and managers.	Yellow

i. Existence of processes of sensitization for authorities and national and subnational officers, private sector, civil society and others in respect to the importance of incorporating DRM and CCA in PIPs

Rated green. Respondents noted that there are two agencies with responsibilities for sensitization for authorities and other stakeholders in respect of the importance of incorporating DRM and CCA in PIP. These agencies are National Emergency Management Agency (NEMA)[8] and CDEMA (viz. a country work programme that developed) that host workshops and seminars and provide the public with information on such matters. In addition, the BEST conducts several public sensitization programmes and training workshops on CCA. It is noteworthy that there are existing mechanisms for collaboration that are implemented by these organisations to consolidate their public awareness efforts.

ii. Existence of technical assistance to the institutions that manage the system to formulate PIPs, with emphasis on the specific application of the concepts and methodologies developed by the Government

Rated red. There is no formal technical assistance programme on CCA and DRM that is currently available through the NPIS. There exists an IADB funded Integrated Coastal Zone Management (ICZM) project that allows for the application of these concepts, along with specific methodologies to projects in coastal areas.

Information obtained from the interviewees suggests that NEMA and the institutions such as the IADB, CDB and CDEMA provide training opportunities, albeit these are not available to personnel with responsibility for the design of PIPs. Respondents noted too that finances should not be a barrier and that formal courses should be developed and offered without payment of fees. This should be considered as an investment by the government.

[8] The Bahamas NEMA is responsible for all matters related to disaster preparedness, prevention and management. The overall responsibilities and functions of the agency is disaster management, and include: Mitigation planning; community preparedness; public information; and recovery coordination. The agency serves in various capacities to train and prepare the: the general public, non-governmental organizations, family island disaster management committees, government departments and agencies, and external agencies, in disaster preparedness, prevention and management (Government of Bahamas, 2011).

iii. Existence of personnel responsible for project design trained in the application of the methodology of risk analysis

Rated red. There is no evidence to support the view expressed by respondents that personnel responsible are trained in the application of the methodology of risk analysis is varied across institutions. Notably, however, technical officers of the BEST Commission, the Department of Physical Planning and the Bahamas National Geographic Information Centre (BNGIS) provide information and technical expertise to the sector ministries and agencies that require their input.

iv. Existence of inventories of public infrastructure by sector or territory

Rated green. Respondents mentioned the BNGIS Centre, which operates as a Unit under the Ministry of Environment and Housing, and is the technical focal point for the collection and management of geospatial data on roads, buildings and other public infrastructure, hydrology, among other infrastructural feature. It is envisaged that the Centre will provide the strategic framework for long-term systematic access and exchange of geospatial data between government agencies[9]. Currently, there is an active website that is designed to provide the practical means to disseminate spatial data via government wide area network and the internet.

v. Existence of timely and reliable information on hazards, vulnerability and risk available to PIP formulators and managers

Rated as yellow. There are regional hazard maps that have been published by the Caribbean Catastrophe Risk Insurance Facility (CCRIF) and Organization of American States (OAS) in collaboration with the United States Agency for International Development (USAID). Such maps include earthquakes, hurricanes, and storm related wind and surge surges, floods and landslides.

Additionally, the BNGIS is currently developing hazard maps for storm surge using the (Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model to define the potential maximum surge and potential impacts on specific locations. However, interviewees identified challenges related to accessing the data, as well as the lack of lateral and vertical institutional collaboration (referred to as the silo approach). In several instances, PIP formulators and managers rely on their own local knowledge and experiences; thus respondents underscored the need for the BIA to address this issue.

[9] Additional information can be obtained from website: http://www.bahamas.gov.bs/wps/portal/public/About%20Us/Overview%20of%20BNGISC/

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3.1.4 Policy consensus and follow-up for the gradual adoption of technical tools in the incorporation of DRM and CCA in PIPs.

This criterion is evaluated by three parameters as indicated in Table 3.4. The assessment results indicate that The Bahamas has been rated two in yellow and one in red.

Table 3.4 Criterion #4 and Parameter Evaluation of The Bahamas

Criterion #4	Parameter	Evaluation
Political consensus and follow-up for the gradual adoption of the technical tools in the incorporation of DRM in PIP	Update the regulations governing the minimum parameters of the DRM in public investment	Yellow
	Existence of reasonable deadlines for the incorporation of DRM in PIP and the verification of its obligation.	Red
	Existence of mechanisms to identify, exchange and dissemination of successful experiences.	Yellow

i. Update the regulations governing the minimum parameters of the DRM and CCA in public investment

Rated yellow. There are no regulations governing the minimum parameters for integration of DRM and CCA in PIP. Respondents indicated that NEMA is working with CDEMA to include disaster risk reduction in legislation to promote mainstreaming of the concept by means of ensuring organized efforts are made to reduce exposure, reduce vulnerability and improve prepared at the national level.

ii. Existence of reasonable deadlines for the incorporation of DRM and CCA in PIP and the verification of its obligation

Rated red. Respondents were unable to indicate any existing deadlines that can be referenced.

iii. Existence of mechanisms to identify, exchange and disseminate successful experiences

Rated yellow. Respondents explained that the BEST Commission and the Ministry of Works and Urban Development have documented some best practices; however, dissemination could be expanded. In addition, there are isolated opportunities such as the CDEMA Comprehensive Disaster Management (CDM) Conference that was held in November 29 to December 4, 2015. This event, which is scheduled biennially, is regarded by CDEMA as the regional platform for dialogue on progress and challenges, good practice, sharing ongoing research and strategic actions for charting the way forward for the advancement of CDM in the Caribbean. In particular, this year's

Conference focused on resilience building; thus, participants from the Caribbean Community states benefited from knowledge exchanges on institutional strengthening, knowledge management, mainstreaming of CDM into the various sectors, and gender mainstreaming in CDM.

3.1.5 Control Mechanisms

This criterion has two parameters of evaluation that are highlighted in Table 3.5. For each parameter The Bahamas is assessed in red.

Table 3.5 Criterion #5 and Parameter Evaluation of The Bahamas

Criterion #5	Parameter	Evaluation
Control Mechanisms	Existence of control or audit involvement by national authorities, in order to ensure the timely compliance with the regulations.	Red
	Existence of sanctions for non-compliance with the standards and the incorporation of DRM in PIP from authorities of control and audit or other relevant institutions.	Red

i. **Existence of control or audit involvement by national authorities, in order to ensure timely compliance with the regulations**

Rated red. The Bahamas already has a system in place for compliance monitoring, for example the Securities Commission of Bahamas, as well as the Office of the Auditor General. However, neither of the two entities has explicit responsibilities for ensuring thee timely compliance of the incorporation of DRM and CCA in the NPIS.

ii. **Existence of sanctions for non-compliance with the standards and the incorporation of DRM in PIPs from authorities of control and audit or other relevant institutions**

Rated red. There are no known standards or sanctions regarding the incorporation of DRM and CCA in PIP.

3.1.6 Summary

Below is a summary of the performance of the Bahamas with respect to the five criteria used for the assessment.

Institutional framework for processes and national systems of public investment

Respondents noted that The Bahamas has the enabling institutional framework comprising legislation and regulations such as the BIA Act, the Financial Administration and Audit Act (2010), and Investment Funds Regulations (2003) to guide the operations of its NPIS. There are also mechanisms for technical approval and supervision, plus the dissemination of and access to materials related to PIP. On the other hand, there is a clear need to develop manuals to guide the NPIS and, in particular, ensure uniformity in application of procedures across sectors.

Development of conceptual models, methodologies and tools for incorporation of DRM and CCA in PIPs

There are no conceptual models for the incorporation of DRM in the NPIS. Respondents mentioned methodologies and technical tools for risk analysis in respect of DRM and CCA, though in some cases, application is sector specific. No formal mechanisms for inclusion of risk analysis exist for projects in the reconstruction phase or general project design phase.

Outreach, training, technical assistance and information on incorporating DRM and CCA in PIPs

Respondents cited several initiatives taken to sensitize various stakeholders of the NPIS on the importance of integrating CCA and DRM in PIP. However, there is no technical assistance given to institutions that manage the NPIS and there is a clear need for training in the application of risk analysis to PIP. There is some progress in the inventorising of public infrastructure and the sharing of information on hazards, vulnerability and risks.

Political consensus and follow-up for the gradual adoption of the technical tools in the incorporation of DRM and CCA in PIPs

NEMA is working with CDEMA to include disaster risk reduction in legislation to promote mainstreaming of DRM and CCA in PIPs across sectors. BEST Commission and the Ministry of Works and Urban Development have documented some best practices; however, dissemination could be expanded.

Control mechanisms

Respondent had no knowledge of any legal requirements or control mechanisms for incorporating DRM and CCA in PIPs and sanctions for the incorporation of these two concepts into the NPIS are non-existent.

3.2 Guyana

3.2.1 Institutional framework for processes and national systems of public investment

This criterion has seven parameters of evaluation. The results displayed in Table 3.6 reveal that Guyana has been rated four parameters in green, another two in yellow and one in red. As in the case of The Bahamas, the latter relates to the existence of manuals for the NPIS.

Table 3.6 Parameter Evaluation of the Incorporation of DRM in NPIS in Guyana

Criterion #1	Parameter	Evaluation
Institutional framework for processes and national systems of public investment	Existence of legislation for the NPIS	Green
	Existence of an organizational structure for the functionality and coordination of NPIS.	Green
	Existence of regulations for the NPIS.	Green
	Existence of manuals for the NPIS.	Red
	Existence of mechanisms of technical approval of the PIP.	Green
	Existence of technical supervision for the implementation of projects.	Yellow
	Existence of mechanisms for the dissemination and access to material related the rules and presentation of the PIP	Yellow

i. Existence of legislation for the NPIS

Rated green. There are three key pieces of legislation that relate to the NPIS: the Investment Act (2004), Procurement Act (2003) and Fiscal Management and Accountability Act (2003). Generally, these Acts deal with informing the present approaches to investment, regulation and transparency of procurement of goods, services and execution of works, and providing regulations for the national budget and use of public funds in Guyana.

Specifically, the Investment Act facilitates investments by providing legal protection for investment, increasing the stability and transparency of the legal system for investments, streamlining the existing procedures and establishing the structure, role and responsibility of the Investment Promotion Council. On the other hand, the Procurement Act provides for the regulation of the procurement of goods, services and the execution of works, promotion of competition among suppliers and contractors and encourage fairness and transparency in the procurement process, (NPTA, 2013). The Fiscal Management and Accountability Act provides for the regulation of the preparation and execution of the annual budget; the receipt, control and disbursement of public moneys; the

accounting for public moneys; and other matters related to the transparent and efficient management of the finances of Guyana" (National Assembly of Guyana, 2003).

ii. Existence of an organizational structure for the functionality and coordination of NPIS

Rated green. As noted by respondents there is the establishment of the National Procurement and Tender Administration (NPTA) that manages all matters related to procurements, tenders and bids, to facilitate these activities in a regulatory environment conducive to transparency, economy, efficiency, openness, fairness and accountability in public sector procurement (Ministry of Finance, 2015). Additionally, the Project Cycle Management Division (PCMD), established under the Ministry of Finance, is responsible for monitoring and maximising the use of government resources in key and critical sectors. This Division prepares and administers the public sector investment programmes, as well as interacts with various stakeholders of public investment project so as to ensure projects are successfully completed within the specified timeline. Respondents noted that this is achieved by means of field visits, timely progress meeting with consultants, and contractors. The Guyana Office for Investment (2015) provides guidance and support relating to all procedures, legal framework and regulations for investment in Guyana.

iii. Existence of regulations for the NPIS

Rated green. Respondents noted the Procurement Regulations (2004) that ensure proper administration of the Procurement Act (2003). In addition, the Fiscal Management and Accountability Act (2003) provides regulations for the control and disbursement of public financial resources, accounting for financial resources and such matters related to the transparent and efficient management of the finances of Guyana. Guyana also has an Investment Act that has been mentioned under parameter (i) above.

iv. Existence of manuals for the NPIS

Rated red. There are no manuals that have been prepared for the NPIS; rather there are budget circulars and budgeting procedures that guide the approval process.

v. Existence of mechanisms for technical approval of PIPs

Rated green. Technical approval for PIP is coordinated by sector ministries - each of which has an Evaluation Committee that makes recommendations to the NPTA Board. Respondents noted that PIPs can also be approved by Cabinet if the budget exceeds a certain limit. It should be noted that the Environmental

Protection Act (1996) requires that an EIA be conducted for large projects such as roads, hotels, hydropower plants, among other as outlined in Schedule 3. Risk assessment is an element of the EIA. According to respondents, most of these projects are financed by international development partners such as the IADB and the CBD, and risk analysis must be done for due diligence.

vi. Existence of technical supervision for the implementation of projects

Rated yellow. The sector ministries and agencies responsible for implementation or for supporting the implementation of projects funded by development partners would usually supervise execution (of projects). Respondents explained that technical guidance and supervision for projects is provided by independent consultants and the Environmental Protection Agency (EPA). A concern was expressed about the need for technical personnel to supervise projects of sector ministries to ensure a common approach at the national level.

vii. Existence of mechanisms for the dissemination and access to material related to the rules and presentation of PIPs

Rated yellow. Information related to the rules and presentation of the PIP is available on the websites of the Ministry of Finance and the NPTA. In addition, public notices of tenders are placed in the national newspapers. Respondents noted that mechanisms could be strengthened by exploring other available technologies for dissemination such as the E-Governance project that is expected to provide high speed delivery of information and enable high capacity data usage.

3.2.2 Development of Conceptual models, methodologies and tools for the incorporation of DRM in PIPs

This criterion has six parameters of evaluation that are presented in Table 3.7. Overall, Guyana has been assessed as one parameter in green, three in yellow and two in red.

Table 3.7 Criterion #2 and Parameter Evaluation for Guyana

Criterion #2	Parameter	Evaluation
Development of conceptual models, methodologies and tools for incorporation of DRM in PIP	Existence of conceptual models for the incorporation of DRM in public investment portfolios	Red
	Existence of methodologies for incorporation of DRM in PIP.	Green
	Existence of technical tools for the incorporation of DRM in NPIS.	Yellow

	Existence of mechanisms of technical approval of the PIP with inclusion of risk analysis.	Red
	Existence of mechanisms of technical approval of the PIP for the phase reconstruction.	Yellow
	Existence of other instruments such as building codes, environmental impact assessment which are used as a general level both in public and private sector.	Yellow

i. Existence of conceptual models for the incorporation of DRM and CCA in PIPs

Rated red. There is no known legislation or guidelines in the NPIS that include the description of conceptual models in relation to DRM and CCA. Interviewees, nevertheless, noted the existence of the DRM Bill (2013) that provides the legal basis for the development of policies and plans for the implementation of actions and measures pertaining to all aspects of DRM, as well as a DRM National Platform of Civil Defence Commission that comprises technical experts who can provide recommendations on incorporation of the DRM and CCA in the project planning process. In addition, the Ministry of Agriculture has a Disaster Risk Management Strategy that provides guidelines for the specific sector. Currently, a Climate Resilience Strategy and Action plan is being prepared to guide sector ministries and agencies on measures to be implemented to address climate change risks.

ii. Existence of methodologies for incorporation of DRM and CCA in PIPs

Rated green. The Guyana National Integrated Disaster Risk Management Strategy identifies methodologies such as hazard analysis, and vulnerability analysis for risk assessments. There are also guidelines for some sectors such as Agriculture, Sea Defence, Public Infrastructure and the Environment. Respondents noted that the CDC works closely with the EPA to inform, manage and prevent effects of climate change and other disasters from causing significant harm to the natural environment. Further, the CDC has also been collaborating with the EPA and other government agencies to incorporate DRM and CCA into future projects.

Respondents have noted other initiatives such as (i) guidelines provided by the international development partners, such as the IADB, for the incorporation of DRM and CCA into feasibility studies; and (ii) EIAs and flood risk evaluation that include risk and vulnerability analysis; however, there is no standardization; hence the parameter is not applied to all major projects since it may be sector specific.

iii. Existence of technical tools for the incorporation of DRM and CCA in NPIS

Rated yellow. Respondents noted that technical tools for the incorporation of DRM and CCA are applied informally in the NPIS and cited such examples as the standard Cost Benefit Analysis, feasibility studies and the EIA that include some form of risk analysis are the common tools that are often used in project design process.

Very recently more than twenty officers selected from various public sector ministries and agencies have benefited from training in the use of the Caribbean Climate Online Risk and Adaptation Tool (CCORAL) that was developed by the Caribbean Community Climate Change Centre. The goals of the intervention were to apply the CCORAL to help manage climate risks and to provide support for climate resilience decision making.

iv. Existence of mechanisms of technical approval of PIPs with inclusion of risk analysis

Rated red. As noted by respondents, there is (as yet) no legal mandate to include risk analysis that would address risks posed by natural hazards and climate change. In fact, as noted by interviewees, inclusion of risk analysis is not a pre-requisite or critical planning factor for government projects, though mandatory for those that are funded by international development partners (for example, IDB funded road project for Ruby in Region Three). Further, the general practice is to conduct very generic risk analysis. Respondents perceived that the Disaster Management Bill, the Guyana National Integrated Disaster Risk Management Strategy and sector specific documents such as the Climate Change Adaptation Plan for the agricultural sector will provide the enabling policy and legislative framework that will create opportunities for the creation and strengthening of mechanisms for the inclusion of risk analysis in the technical approval process of PIPs.

v. Existence of mechanisms of technical approval of PIPs for the phase of reconstruction

Rated yellow. The six respondents perceived this parameter as being partially accomplished and cited the following sector/project specific initiatives that could be replicated, as well as scaled-up: (i) review of building codes, as well as subsequent floods to guide the design of more climate flood houses in coastal and hinterland areas; (ii) climate proofing; (iii) de-siltation of drainage outlets; (iv) the use of asphalt for farm roads to make them resilient throughout the seasons; and finally (v) increasing the capacity of the Hope Canal. These risk reduction initiatives were introduced after the experience of the devastating impacts of the 2005 floods in Guyana, and particularly during the rebuilding process at the

national level. One interviewee (the outlier) noted that mechanisms exist only for internationally funded projects. This can be replicated across sectors.

vi. Existence of other instruments, such as building codes and environmental impact assessment which are used at a general level both in the public and private sectors

Rated yellow. There are instruments such as Guyana National Building Code of the Central Housing and Planning Authority (CH&PA), and EIA that are used in the approval process for both public and private projects in Guyana. However, respondents noted the need for (i) revision of the building code, with due consideration being given to impending consequences such as climatic hazards, as experienced during the 2005 floods in Guyana; (ii) enforcement of legislation such as the Environmental Protection Act; and (iii) consolidation of legislation for sea defences and roads to ensure a common approach to risk mitigation.

3.2.3 Outreach, training, technical assistance and information on incorporating DRM in PIPs

Five parameters have been evaluated for this criterion. The results that are presented in Table 3.8 indicate that Guyana has been rated as four in yellow and one in red.

Table 3.8 Criterion #3 Parameter Evaluation for Guyana

Criterion #3	Parameter	Evaluation
Outreach, training, technical assistance and information on incorporating DRM in PIP	Existence of processes of sensitization for authorities and national and sub-national officers, private sector , civil society and others in respect to the importance of incorporating DRM in PIP	Yellow
	Existence of technical assistance to the institutions that manage the system to formulate PIP, with emphasis on the specific application of the concepts and methodologies developed by the government.	Red
	Existence of personnel responsible for the project design trained in the application of the methodology of risk analysis.	Yellow
	Existence of inventories for public infrastructure by the sector or territory.	Yellow
	Existence of timely and reliable information of hazards, vulnerability and risks available to PIP formulators and managers.	Yellow

i. **Existence of processes of sensitization for authorities and national and subnational officers, private sector, civil society and others in respect to the importance of incorporating DRM in and CCA in PIPs**

Rated yellow. Respondents explained that over the past two years there have been increasing efforts aimed at sensitizing officials of targeted government agencies and ministries, and the general public for example: (i) CDC has been conducting awareness and training through regular stakeholder meetings facilitated viz. the Disaster Management Platform and (ii) the CCORAL training that has been facilitated by the Caribbean Community Climate Change Centre, as mentioned earlier in this Technical Note (iii) Public education campaign on flood risk management to sensitize the general public of the importance of DRM and CCA, thereby strengthening local capacities for disaster response and risk reduction. Both the Government of Guyana and the IADB provided the funds for the development of the training materials.

There is still need, however, to organize awareness and training workshops that specifically target officials directly related to the NPIS. In many instances, these officials are not formally invited to training sessions due to a failure to understand the nexus between PIPs and DRM.

ii. **Existence of technical assistance to the institutions that manage the system to formulate PIPs, with emphasis on the specific application of the concepts and methodologies developed by the Government**

Rated red. While there exist training opportunities on mainstreaming DRM and CCA, as mentioned earlier in this Technical Note, the institutions that manage the PIP are not normally targeted. A clear example is the recently held CCORAL training workshop. Respondents underscored the need for the capacity development initiatives to target the staff of the NPTA Board and the Project Cycle Management Division, given their role in the NPIS.

iii. **Existence of personnel responsible for project design trained in the application of the methodology of risk analysis**

Rated yellow. Respondents had no knowledge of trained personnel (in the area of risk analysis) who have had an active role in the NPIS. It is noted, however, that currently, the CDC provides training in risk analysis to selected groups of persons representing government ministries (such as The Ministry of Public Infrastructure) and the private sector.

iv. **Existence of inventories of public infrastructure by sector or territory**

Rated yellow. Initiatives to inventorize public infrastructure are currently being taken and are sector specific, as in the case of Ministry of Public Infrastructure, and the Ministry of Communities (and more specifically the Guyana Water Inc.) The former has established a GIS unit to provide data for project designs and

condition assessments of infrastructure such as sea defences and roads. Further, a national database is being created as part of an asset recovery program. There are also opportunities provided by audit queries, fixed asset registry and the use of GIS technology by the Ministry of Agriculture to inventories drains in Guyana. Notably, the majority of interviewees were unaware of these initiatives.

v. Existence of timely and reliable information on hazards, vulnerability and risk available to PIP formulators and managers

Rated yellow. Respondents noted that the Hydromet Department is the only entity known for the provision of information on weather-related hazards; however, sometimes the data is not provided in a timely manner. Importantly, information on flood hazard and associated risks exists for Guyana's coastal regions. This has been made possible through the IADB funded project titled *Integrated Management Plan for Natural Disasters* that included a component that focused on country risk indicators and flood risk evaluation. Generally, however, there is room for improvement with regard to the infrastructure and technical expertise to provide spatial data on hazards, vulnerability and risks. Respondents have cited this as one of the important areas for technical assistance.

3.2.4 Policy consensus and follow-up for the gradual adoption of technical tools in the incorporation of DRM in PIPs

This criterion has three parameters for which results are presented in Table 3.9. Guyana has been rated two in red and one in green.

Table 3.9 Criterion #4 and Parameter Evaluation for Guyana

Criterion #4	Parameter	Evaluation
Political consensus and follow-up for the gradual adoption of the technical tools in the incorporation of DRM in PIP	Update the regulations governing the minimum parameters of the DRM in public investment	Red
	Existence of reasonable deadlines for the incorporation of DRM in PIP and the verification of its obligation.	Red
	Existence of mechanisms to identify, exchange and dissemination of successful experiences.	Green

i. Update the regulations governing the minimum parameters of the DRM and CCA in public investment

Rated red. Currently, there are no regulations that govern the minimum requirement for DRM and CCA; however, respondents noted that an 'entry point' is presented through DRM Bill, which needs to be enacted urgently.

ii. Existence of reasonable deadlines for the incorporation of DRM and CCA in PIP and the verification of its obligation

Rated red. There is no knowledge or evidence of the existence of deadlines for integration of DRM and CCA in PIP. This is not surprising given that the DRM Bill has not been enacted as yet.

iii. Existence of mechanisms to identify, exchange and disseminate successful experiences

Rated green. There are mechanisms to identify, exchange and disseminate successful experiences in the mainstreaming of DRM and CCA in PIP to member of the public. These include (i) reports on consultancies, and workshops that 'bring' information into government and public space and therefore considered as entry points; (ii) the CDC provides opportunities for sharing of best practices during statutory meetings of the National Disaster Risk Reduction Platform. Importantly, at each meeting agencies and ministries report on their activities, the successes and challenges, as well as the possible solutions; and (iii) international development partners, as well as CDEMA share best practices at regional fora (for example, the Comprehensive Disaster Management Conference held biennially) to guide PIP.

3.2.5 Control Mechanisms

This criterion has two parameters that have been evaluated and the results are presented in Table 3.10. Guyana is rated as one in red and the other in yellow.

Table 3.10 Criterion #5 Parameter Evaluation for Guyana

Criterion #5	Parameter	Evaluation
Control Mechanisms	Existence of control or audit involvement by national authorities, in order to ensure the timely compliance with the regulations.	Yellow
	Existence of sanctions for non-compliance with the standards and the incorporation of DRM in PIP from authorities of control and audit or other relevant institutions.	Red

i. **Existence of control or audit involvement by national authorities, in order to ensure timely compliance with the regulations**

Rated yellow. Authorities such as the Auditor General Office, the Environmental Protection Agency and Bureau of Standards, the Project Cycle Management Division and the NPTA Board are legally mandated to monitor and enforce compliance. Respondents noted that enforcement is weak with regard to compliance with the conditions outlined in environmental authorizations, as well as with the standards set by the Bureau of Standards.

ii. **Existence of sanctions for non-compliance with the standards and the incorporation of DRM in PIPs from authorities of control and audit or other relevant institutions**

Rated red. There are no sanctions for non-compliance since no legally established standards have been developed for incorporation of DRM and CCA in PIP.

3.2.6 Summary

Below is a summary of assessment of Guyana's performance in respect of the five criteria and 23 parameters.

Institutional framework for processes and national systems of public investment

Respondents noted that Guyana here are three key pieces of legislation that relate to the NPIS: the Investment Act (2004), Procurement Act (2003) and Fiscal Management and Accountability Act (2003) and an organisational framework comprising establishment of the National Procurement and Tender Administration (NPTA) and the Project Cycle Management Division (PCMD), established under the Ministry of Finance, among others. Additionally, there exist Procurement Regulations (2004) and mechanisms for the technical approvals of PIPs. As in the case of The Bahamas, no manuals have been prepared for the NPIS. Technical supervision of projects and dissemination of information on NPIS need to be improved.

Development of conceptual models, methodologies and tools for incorporation of DRM and CCA in PIPs

Respondents noted that there are no conceptual models for the incorporation of DRM in the NPIS or mechanisms for technical approval of the PIP with inclusion of risk analysis. There are, however, methodologies such as hazard analysis, and vulnerability analysis for risk assessments that allow for incorporation of DRM and CCA in PIP. On the other hand, mechanisms for technical approval of the PIP for the reconstructing without risks and the building codes should be improved.

Outreach, training, technical assistance and information on incorporating DRM and CCA in PIPs

Respondents noted the need for targeted training for NPIS officials in the importance of integrating CCA and DRM in PIP. As in the case of The Bahamas there is need to provide technical assistance to institutions that manage the NPIS, and enhancement of training opportunities in the application of risk analysis to PIP. Progress has been made in the inventorying of public infrastructure and the sharing of information on hazards, vulnerability and risks.

Political consensus and follow-up for the gradual adoption of the technical tools in the incorporation of DRM and CCA in PIPs

Respondents noted that Guyana has no regulations governing the minimum parameters of the DRM in public investment or deadlines for the incorporation of DRM and CCA in PIP. However, mechanisms, such as the National Disaster Risk Reduction Platform, which exist to identify, exchange and disseminate successful experiences in the mainstreaming of DRM and CCA in PIP.

Control mechanisms

Respondents cited authorities such as the Auditor General Office, the Environmental Protection Agency and Bureau of Standards, the Project Cycle Management Division and the NPTA Board that are legally mandated to monitor and enforce compliance with the NPIS in Guyana. On the other hand, there exist no sanctions for non-compliance with the standards and the incorporation of DRM in PIPs.

3.3 Jamaica

3.3.1 Institutional framework for processes and national systems of public investment

This criterion has seven parameters of evaluation. The results in Table 3.11 indicate that Jamaica has been assessed as four in green, two in yellow and one in red.

Table 3.11 Criteria #1 and Parameter Evaluation of the Incorporation of DRM in NPIS in Jamaica

Criterion #1	Parameter	Evaluation

Institutional framework for processes and national systems of public investment	Existence of legislation for the NPIS	Green
	Existence of an organizational structure for the functionality and coordination of NPIS	Green
	Existence of regulations for the NPIS.	Green
	Existence of manuals for the NPIS.	Yellow
	Existence of mechanisms of technical approval of the PIP.	Green
	Existence of technical supervision for the implementation of projects.	Yellow
	Existence of mechanisms for the dissemination and access to material related the rules and presentation of the PIP	Red

i. Existence of legislation for the NPIS

Rated green. Respondents noted the existence of the Jamaican Financial Administration and Audit Act (1959), the Caribbean Investment Fund Act (2004), and importantly the Jamaican Financial Administration and Audit (Amendment) Act (2014) that together make provisions for the formation and evaluation of fiscal policy and performance and the promotion and encouragement of projects involving new ventures; business expansion and plant expansion including divestment and privatization of public sector owned and/or controlled companies, among other things. The NPIS in Jamaica is required to comply with the provisions and any existing regulations of the above mentioned Acts that have components that relate directly to the NPIS in the country.

ii. Existence of an organizational structure for the functionality and coordination of NPIS

Rated green. The functionality and the coordination of the NPIS are undertaken by more than one unit in Jamaica. As respondents noted, the Ministry of Finance, which is under the authority of the Cabinet, has the overall responsibility to operationalise all public sector procurement policies in the acquisition of goods, works and services; with the objectives of: maximizing economy and efficiency in procurement; encouraging fairness, integrity and public confidence in the procurement process, among other things.

Additionally, there is the Ministry of Industry, Investment and Commerce that is responsible for areas of business, trade and investment into the country, as well as, the National Contracts Commission whose primary objective is the promotion of efficiency in the process of the award and implementation of government contracts, and ensuring transparency and equity in awarding such contracts.

iii. Existence of regulations for the NPIS

Rated green. The Office of the Contractor General has set rules to be followed regarding the monitoring, award and the implementation of government

contracts; as outlined in Sections 4, 5, 15 and 16 of the Contractor General Act (1983). Further rules, compliance and monitoring are enforced by the Office of the Auditor General that conducts independent audits and make reports to improve the use of public resources. Respondents were able to identify elements of the importance, role and function of the Office of the Contractor General and Auditor General's Office in regulating NPIS in Jamaica. It should also be noted, that investment projects in Jamaica must follow closely the regulations as outlined in the FAA, as well as the Fiscal Responsibility Framework (FRF) regulations which are set to regulate fiscal matters and use of public resources. Online data suggest that the Ministry of Finance and Planning, the Planning Institute of Jamaica (PIJ), which is an arm of the Ministry of Finance and Planning, the Pre-Selection Committee and the Public Expenditure Division also have 'guidelines' to be followed.

iv. Existence of manuals for the NPIS

Rated yellow. Respondents noted that there are manuals that are available to guide the NPIS; however these manuals are focussed on specifically targeted areas: for example, the Government of Jamaica's Handbook of Public Sector Procurement Procedures establishes the criteria to be met for any investment that involves procurement and tender procedures and regulations. Government ministries, such as the Ministry of Transport, Works and Housing, are guided by established procedures for analysis and consultation in respect of public investment portfolios.

In addition, Jamaica has standard forms that must be completed for preparation of project concepts to allow for screening; as well as Prioritization Criteria (Environmental Impact; Hazard Risk Reduction and locational variables such as vulnerability of the area). Respondents also indicated that at the sectoral level there are several features (such as hazard risk reduction) that help to prioritize projects. It was mentioned that while these are all requirements, there is still need for the development of a set of manuals that will promote uniformity in application of criteria etc.

v. Existence of mechanisms for technical approval of PIPs

Rated green. The Ministry of Finance and Planning coordinates and monitors projects through its Economic and Financial Affairs sub-division. Another department of the ministry, the Planning Institute of Jamaica (PIOJ) is responsible for promoting medium and long term planning, identifying and monitoring strategic projects and overseeing public sector reform. Further, a pre-selection Committee consisting of members from the PIOJ determines the feasibility of public projects, for the better allocation of resources for efficiency. This screening process of public projects in Jamaica also involves members of

the Cabinet and a general technical group, under which the project falls (finance, environment), before final approval is given.

Respondents cited other mechanisms that exist for technical approval including, Cabinet, national sub-committees for the procurement procedures; technical and social analyses at the conceptual stage and EIAs that are legally required for major projects.

vi. Existence of technical supervision for the implementation of projects

Rated yellow. There is no overall agency or detailed process for technical supervision throughout the implementation of PIP. However the various ministries (by the Ministry of Transport, Work and Housing and Ministry of Water, Land, Environment and Climate Change) that have responsibilities to oversee projects such as infrastructure development, construction and environmental projects would undertake some level of supervision (of their implemented projects). The primary aim of such supervision is to ensure that projects are completed in a manner, in keeping with the proposed project plans.

Respondents further noted that the level of supervision will usually be dependent on the available resources (especially human and financial resources) of the overseeing ministry. Additionally, the Ministry of Finance conducts monitoring of fiscal matters related to projects, procurement and tenders.

vii. Existence of mechanisms for the dissemination and access to material related to the rules and presentation of PIPs

Rated red. There are no clear mechanisms to disseminate and access material related to rules and presentation of PIPs. As noted by respondents, although there are some websites and other sources that provide general and some specific information for a particular ministry or organization, there is little access to the available material that deals directly with rules and presentation of PIPs.

3.3.2 Development of Conceptual models, methodologies and tools for the incorporation of DRM in PIPs

This criterion has six parameters that been assessed. Table 3.12 indicates that Jamaica has been evaluated as three in green, two in yellow and one in red.

Table 3.12 Criterion #2 and Parameter Evaluation for Jamaica

Criterion #2	Parameter	Evaluation

Development of conceptual models, methodologies and tools for incorporation of DRM in PIP	Existence of conceptual models for the incorporation of DRM in public investment portfolios	Yellow
	Existence of methodologies for incorporation of DRM in PIP.	Green
	Existence of technical tools for the incorporation of DRM in NPIS.	Green
	Existence of mechanisms of technical approval of the PIP with inclusion of risk analysis.	Green
	Existence of mechanisms of technical approval of the PIP for the phase reconstruction.	Red
	Existence of other instruments such as building codes, environmental impact assessment which are used as a general level both in public and private sector.	Yellow

i. Existence of conceptual models for the incorporation of DRM and CCA in PIPs

Rated yellow. Conceptual models are not fully institutionalized and there are no existing laws to mandate actions on this matter, though planning agencies are approached to provide guidance, and public investments have been denied because of risk of flooding. Respondents noted that several initiatives have been taken to operationalize the incorporation of DRM and CCA in PIPs: NEPA has legal requirement for an EIA, while sector ministries employ strategic environment assessments to policies (for example, the National Transport Policy) to address issues of DRR and climate change resilience. There is also the new DM Act (2014/15) and a draft CCA Policy that is soon to be promulgated. Additionally, the National Development Plan has DRM as an important national strategy in which CCA is explicit. Both are pillars of the national growth inducement strategy. Moreover, the Hazard Risk Reduction Policy of Jamaica acknowledges loss related to disaster impact and this is filtered down to country programs and budgets of sectors projects that are funded by development partners.

ii. Existence of methodologies for incorporation of DRM and CCA in PIPs

Rated green. Respondents noted there are methodologies for the incorporation of DRM and CCA in PIPs. While there is no legal requirement for such an approach, it is the practice of specific ministries and agencies of the government refer to guidelines or other mechanisms to guide the process. For example, drainage design guidelines incorporate CCA; the National Water Agency has guidelines, and there exists a new National Building Code. Additionally, Technical officers involved in PIP can apply the CCORAL tool that can be used to screen projects, as well as the methodology that has been developed by Cardona and financed by the IADB. Interviewees noted that the PIOJ is sourcing

finance to prepare an Environment and Social Policy that will address issues of methodologies such as risk and vulnerability analysis and hazard mapping.

iii. Existence of technical tools for the incorporation of DRM and CCA in NPIS

Rated green. Tools for the incorporation of DRM and CCAs are available and are currently used by specialized entities such as the Ministry of Water, Land, Environment and Climate. Respondents noted that the University of the West Indies-Mona Campus has a Geo-informatics Unit that does hazard mapping of the island. In addition, there are available computer based models (for example for flood risk mapping; seismic risk analysis, landslides susceptibility mapping and for community level vulnerability capacity assessments), as well as the Risk and Vulnerability Assessment Methodology Project (RIVAMP) that underscores the important role ecosystems play in building resilience to disasters and climate change. Training of the RIVAMP is based on free open-source software. CBA is also done as part of a feasibility study that may include the analysis of climate change and disaster risks during at the screening phase.

Information gleaned from available on line documents suggests that DRM and the management of climate change effects are an important part of economic development in Jamaica. As such, DRM and CCA are implemented through various avenues such as the government (Government Ministries) and other organizations responsible for handling environmental related matters. Notably, the Ministry of Finance and Planning has incorporated into its procurement policy framework as one of its objectives to achieve sustainable development by reducing environmental impacts and employing risk management. In developing its policies, which government agencies, ministries and organizations must follow in their projects and proposals, elements of CCA and DRM, for example, viz. the promotion of green procurement of products and services by the government (Ministry of Finance and Planning, 2015).

iv. Existence of mechanisms of technical approval of PIPs with inclusion of risk analysis

Rated green. Although not formally instituted, there are current mechanisms within the NPIS that provide opportunities for the inclusion of risk analysis in the project approval process. As noted by a few of the interviewees, the Ministry of Finance applies criteria for the risk reduction component in its analysis of projects and that a higher ranking is given if CCA and DRM risks are identified. However, such an approach is not applied across sectors; also enforcement mechanisms need to be strengthened for major investment projects given that risk analysis is sector specific. In fact, respondents also noted that there is the generic general risk analysis is conducted for most investment projects (excluding those in the construction sector) focuses on social and financial risks. Environmental risks are often are considered for construction projects.

Moreover, the National Environmental Planning Agency (NEPA) of Jamaica has several requirements and regulations that need to be included in the EIA process for any development action that may cause significant harm to the environment. Projects and proposals that may result in a potential high risk hazard are required to include in their EIA document an Emergency Response Plan.

v. Existence of mechanisms of technical approval of PIPs for the phase of reconstruction

Rated red. There are no formal mechanisms within the NPIS to guarantee reconstruction without the risk. The system is affected by absence of specific guidelines, political interference, budget implications and expediency. Further, respondents noted that some areas are known to be vulnerable to hazards, hence the need for actions are taken to mitigate (for example, raising the level of the road) to mitigate the re-occurrence of the risk. Another important observation was that there is a very high level of awareness of the need to reduce exposure in reconstruction, as well as the technical capacity to conduct analyses to support risk reduction efforts in reconstruction; however, measures are not always adequately and appropriately applied; hence the need for enforcement by legislation.

vi. Existence of other instruments, such as building codes and environmental impact assessment which are used at a general level both in the public and private sectors

Rated yellow. There are instruments such as the New National Building Code intended for regulation of the construction sector, with the primary purpose of improving building resilience to natural and human-induced hazards. Respondents noted that (i) the growing public awareness should be matched with adequate human resource capacity (for example of Building Inspectors) to ensure enforcement of building codes; (ii) updated building code has not been passed into law; (iii) the planning system is currently being reviewed and revised; (iv) there are building regulations, as well as the Town and Country Planning Act that guides development at the parish level; and (v) EIA is enforced by NEPA. In the case of the latter, respondents noted that the system in which EIAs are mandatory esp. for development in sensitive areas, and building codes are being strengthened to raise standards based on risks of climate change and disasters.

3.3.3 Outreach, training, technical assistance and information on incorporating DRM in PIPs

This criterion has five parameters. The results presented in Table 3.13 reveal that for three of the parameters Jamaica is rated in green, and for the remaining two in yellow.

Table 3.13 Criterion #3 and Parameter Evaluation for Jamaica

Criterion #3	Parameter	Evaluation
Outreach, training, technical assistance and information on incorporating DRM in PIP	Existence of processes of sensitization for authorities and national and sub-national officers, private sector , civil society and others in respect to the importance of incorporating DRM in PIP.	Green
	Existence of technical assistance to the institutions that manage the system to formulate PIP, with emphasis on the specific application of the concepts and methodologies developed by the government.	Green
	Existence of personnel responsible for the project design trained in the application of the methodology of risk analysis.	Yellow
	Existence of inventories for public infrastructure by the sector or territory.	Green
	Existence of timely and reliable information of hazards, vulnerability and risks available to PIP formulators and managers.	Yellow

i. Existence of processes of sensitization for authorities and national and subnational officers, private sector, civil society and others in respect to the importance of incorporating DRM and CCA in PIPs

Rated green. There exists a national consultation process that facilitates greater input from stakeholders; the holding of public forums on projects such as the Negril Break Water Project in Goat Island., regular workshops that are held by DRM and CCA are not explicit. There are several initiatives, including workshops by ODPEM, as well as training via the University of the West Indies curricula. Additionally, a lot of public sensitization is done when a hazard occurs in the country, the Caribbean region or the world. Moreover, Vision 2030, a Strategic Roadmap to guide the country's achievement of its sustainable development goals (and based on seven principles inclusive of economic, social and environment sustainability) has as an output hazard risk reduction and CCA[10].

[1010] For more information visit http://jis.gov.jm/features/vision-2030-jamaica-national-development-plan/.

This has led to the establishment of a thematic working group to monitor its implementation. There are also targets and quarterly reports on the achievement of same and an annual review and refinement of these targets. The outlier was rated as partially accomplished (yellow) by two respondents who highlighted that civil society is technically not part of the NPIS and that sensitization of DRM and CCA could be scaled up during screening.

ii. Existence of technical assistance to the institutions that manage the system to formulate PIPs, with emphasis on the specific application of the concepts and methodologies developed by the Government

Rated green. Respondents noted that there are ongoing training programmes on the incorporation of DRM. Online documentation indicates that the ODPEM hosts several meetings and workshops with local government representatives, to introduce and teach about disaster risk management and other associating issues such as climate change. The Management Institute for National Development (MIND), an executive agency of the government and an accredited tertiary level training institute offers a wide range of courses in management, administration, business, customer service and procurement services. The numerous and wide range of training programmes for public servants also include one that is specific to environmental issues and management. Training in this area will include the addition of CCA and DRM as modern issues that affect the natural environment and become further advanced through anthropogenic activities. Further, training in environmental stewardship aims to help prepare persons to mitigate and prevent these issues, which would be a benefit to the nation (MIND, 2014).

iii. Existence of personnel responsible for project design trained in the application of the methodology of risk analysis

Rated yellow. Currently, there are variances between ministries with regard to the existence of personnel that are trained in the risk analysis. Respondents noted that PIP is not pre-occupied with DRM and CCA and that project design is done at the technical level at which the

Jamaica system allows for commentary by experts in the risk analysis. Generally, it was felt that skills available to the process.

iv. Existence of inventories of public infrastructure by sector or territory

Rated green. Respondents explained that inventories reside in various institutions due to the non-existence of a central repository (currently being considered by the government). It is noteworthy that there are linkages that facilitate access to data (for example on hazard and infrastructure) form the Land

Information Council, the Ministry of Water, Land, Environment and Climate Change, and the National Water Commission; also there is the development of spatial data mapping by the Spatial Data Management Division, using geographic information systems for roads, schools inventories; not necessarily a data base. The remaining two respondents rated the parameter as accomplished (green) and indicated that different ministries and agencies (such as the National Land Agency) have their own inventories, while the Government of Jamaica has a web map (on line application), and that a national geospatial data base system is currently operated by the National Spatial Data Management Division.

v. Existence of timely and reliable information on hazards, vulnerability and risk available to PIP formulators and managers

Rated yellow. Information on hazards, vulnerability and risk is available, however there are issues regarding their comprehensiveness. While ODPEM can access information from the Meteorological Office, the principal stakeholders of the PIP only have access to limited data that is required to effectively inform projects designs (for example, for Intensity Duration Frequency Curves, diversity of intensity, duration, among others). Interviewees noted that information is not provided in any systematic or organized manner.

Notably, there is the IDB risk template for all projects funded by the IADB and information exists depending on the spatial focus and well as the hazard type: for example, climate projections (GRID boxes) from the University of West Indies, Jamaica. The outlier rating was incipient (red) based on a perception that there exists no spatial plan as yet; therefore the information is not readily available.

3.3.4 Policy consensus and follow-up for the gradual adoption of technical tools in the incorporation of DRM in PIPs

This criterion has three parameters of evaluation. Table 3.14 presents a summary of the results. It is noted that one parameter is rated one in red and two in yellow.

Table 3.14 Criterion #4 and Parameter Evaluation for Jamaica

Criterion# 4	Parameter	Evaluation
Political consensus and follow-up for the gradual adoption of the technical tools in the incorporation of DRM in PIP	Update the regulations governing the minimum parameters of the DRM in public investment	Red
	Existence of reasonable deadlines for the incorporation of DRM in PIP and the verification of its obligation.	Yellow
	Existence of mechanisms to identify, exchange and dissemination of successful experiences.	Yellow

i. **Update the regulations governing the minimum parameters of the DRM and CCA in public investment**

Rated red. There are no known minimum parameters that have been developed and instituted by NPIS with respect to the incorporation of DRM and CCA. Respondents noted that the Ministry of Finance is now considering DRM in the context of the fiscal policies; however, there is need for a more rigorous approach to risk management including contingency planning.

ii. **Existence of reasonable deadlines for the incorporation of DRM and CCA in PIP and the verification of its obligation**

Rated yellow. The NPIS has not instituted (as yet) any deadlines for the incorporation of DRM and CCA in PIP. Respondents cited the following initiatives that provide opportunities for the verification of obligations: (i) the system existing for infrastructure projects; (ii) PIOJ generates reports that track projects, risks and constraints; and (iii) internationally funded projects have mandatory deadlines and guidelines.

iii. **Existence of mechanisms to identify, exchange and disseminate successful experiences**

Rated yellow. Such mechanisms exist through informal networks, rather than through the government. There is also national recognition of the need for this parameter. Reference was made to the annual conference that is hosted by ODPEM and the Comprehensive Disaster Management Conference which is hosted by CDEMA. There is also the annual observance of Disaster Preparedness week that allows for the implementation of public sensitisation programmes on disasters. Respondents noted that such initiatives can be replicated during the calendar year.

3.3.5 Control Mechanisms

This criterion has two parameters. Table 3.15 indicates that Jamaica is rated one in red and the other in yellow.

Table 3.15 Criterion #5 and Parameter Evaluation for Jamaica

Criterion# 5	Parameter	Evaluation

Control Mechanisms	Existence of control or audit involvement by national authorities, in order to ensure the timely compliance with the regulations.	Yellow
	Existence of sanctions for non-compliance with the standards and the incorporation of DRM in PIP from authorities of control and audit or other relevant institutions.	Red

i. **Existence of control or audit involvement by national authorities, in order to ensure timely compliance with the regulations**

Rated yellow. Jamaica does not have adequate number of inspectors to monitor compliance. Many PIPs are financed by international development partners that require due diligence. Moreover, private development projects are not subject to the same rigour due to lack of human resources capacity. On the other hand, respondents indicated that the Auditor General Office conducts regular audits of some of these issues; and that the Cabinet, as well as IADB and CDB, are involved in some aspects of monitoring and control, as is the case of the Sandy Gully in Jamaica. The lack of enforcement and skilled personnel was identified as a challenge.

ii. **Existence of sanctions for non-compliance with the standards and the incorporation of DRM in PIPs from authorities of control and audit or other relevant institutions**

Rated red. The NPIS has no known sanctions for non-compliance. Respondents indicated that this was due several factors :(i) weak enforcement of legislation; and (ii) issues related to cultural practice and governance. Notably, Parish Councils and NRCA have the power to issue cease order; but not for public investments.

3.3.6 Summary

Below is a summary of the assessment of Jamaica with regard to the five criteria and 23 parameters.

Institutional framework for processes and national systems of public investment

Respondents noted the existence of the Jamaican Financial Administration and Audit Act (1959), the Caribbean Investment Fund Act (2004), and importantly the Jamaican Financial Administration and Audit (Amendment) Act (2014) that provides the legislative framework for the NPIS. There is an organizational structure in place, though more than one ministry is involved in particular, the Ministry of Finance, which is under the authority of the Cabinet, has the overall responsibility with regard to the NPIS. There are

regulations that govern investment projects in Jamaica. These are outlined in the FAA Act, as well as the Fiscal Responsibility Framework (FRF) that addresses fiscal matters and use of public resources. Unlike The Bahamas and Guyana, Jamaica has made progress in the preparation of manuals that are available to guide the NPIS. There are also mechanisms for the technical approval and supervision of PIPs.

Development of conceptual models, methodologies and tools for incorporation of DRM and CCA in PIPs

Respondents noted that cconceptual models are not fully institutionalized; however mechanisms for the incorporation of DRM in PIP and technical approval exist. Specific ministries and agencies of the government have guidelines and tools such as computer based models (for example for flood risk mapping; seismic risk analysis, landslides susceptibility mapping for the incorporation of DRM and CCA in PIPs). Mechanisms exist within the NPIS to provide opportunities for the inclusion of risk analysis in the project approval process; however reconstruction without risks needs to be addressed. Progress has been made in the area of building codes and EIAs.

Outreach, training, technical assistance and information on incorporating DRM and CCA in PIPs

ODPEM has been very instrumental in facilitating sensitization programmes for authorities and national and sub-national officers, private sector, civil society and others in respect to the importance of incorporating DRM in PIP. Respondents noted that technical assistance in the incorporation of DRM and CCA in PIP is made available to relevant institutions and that a database exists at sectoral ministries. There is need to improve on the timely hazards, vulnerability and risk available to PIP formulators and managers.

Political consensus and follow-up for the gradual adoption of the technical tools in the incorporation of DRM in PIPs

Respondents noted that Jamaica has no regulations governing the minimum parameters of the DRM in public investment or deadlines for the incorporation of DRM and CCA in PIP. Although there are no statutory deadlines for the incorporation of DRM and CCA in PIP and the verification of its obligations, respondents cited a few initiatives such as the PIOJ generated reports that track projects, risks and constraints that provide opportunities for the verification of obligations. Further, respondent noted that informal networks are utilised as mechanisms to identify, exchange and disseminate successful experiences.

Control mechanisms

Respondents noted the need for greater control or audit involvement by national authorities, in order to ensure timely compliance with the regulations and that currently the NPIS has no known sanctions for non-compliance.

3.4 Summary of the Results for Barbados and Trinidad and Tobago

The section presents only a summary of the results of the assessment of DRM and CCA in Barbados and Trinidad and Tobago. The information is based on the IDB (2014).

3.4.1 Barbados

Table 3.16 presents the summary assessment of each of the five criteria used to analyse the incorporation of DRM and CCA in NPIS in Barbados. It is noted that in the case of Barbados, from the total of 23 parameters, one (1) parameter was classified in green, 10 in yellow and 12 in red.

Table 3.16 Summary Assessment of the Incorporation of DRM in NPIS in Barbados

Criterion	Summary assessment
Institutional framework for processes and national systems of public investment	The institutional framework for the processes and systems of public investment is partially covered by legislation, related regulations and an administrative structure that coordinates the processes. Technical approval and supervision systems are generally not formalized and there is limited documentation and dissemination of the processes.
Development of conceptual models, methodologies and tools for incorporation of DRM in PIPs	No conceptual framework for incorporation of DRM in the NPIS was identified. DRM methodologies and tools are not specified by the NPIS, but are applied to projects based on project-specific factors e.g. known hazard risks such as coastal erosion at potential project locations. Residential

	building codes are applied but not supported by legislation.
Outreach, training, technical assistance and information on incorporating DRM in PIPs	No structured mechanisms were identified for information and training on the application of concepts and methodologies to incorporate DRM in the NPIS. Partial information on the stock of public infrastructure and hazard risks is available to the NPIS.
Political consensus and follow-up for the gradual adoption of the technical tools in the incorporation of DRM in PIPs	The draft amendments to the Emergency Management Act, 2006 will operationalize the concept of CDM nationally. No timelines are specified for incorporating DRM in the NPIS.
Control mechanisms	There are no known requirements or control mechanisms for incorporating DRM in PIPs and sanctions are not known to apply for excluding DRM considerations in the NPIS.
Incorporation of CCA considerations in the national public investment systems and education on CCA	Respondents were of the view that the effects of climate change have been acknowledged by policymakers and the importance of adaptation strategies recognized, particularly with respect to coastal management. CCA has not been incorporated into the NPIS although sea level rise and coastal erosion risk will inform some development decisions in coastal zones. No sensitization or education program on climate change adaptation is currently in place for NPIS personnel. Barbados approved a National Climate Change Policy in 2012.

Incorporation of CCA in NPIS

Although interviewees did not identify a major focus on CCA, they believed that policymakers have recognized the importance of CCA and the country in general is being sensitized to CCA. This view is held particularly with respect to the coastal areas of Barbados, as developments in these areas are subject to additional review by the Coastal Zone Management Unit (CZMU). Reported actions on CCA include the current IADB funded Coastal Risk Assessment and Management Program and the greening of the Ministry of Transport and Works. CCA is not known to be incorporated as a requirement in the NPIS and there is no formal or organized education program on CCA in PIPs for NPIS personnel. The Government of Barbados approved a National Climate Change Policy in 2012. The policy is intended to support efforts to adapt to the effects of climate change.

3.4.2 Trinidad and Tobago

Table 3.17 presents the summary assessment of each of the five criteria used to analyse the incorporation of DRM and CCA in NPIS in the twin island Republic of Trinidad and

Tobago. It is noted that in the case of Trinidad and Tobago 10 parameters, from the total of 23 parameters, were classified in yellow and 13 classified in red. None of the parameters was assigned a green rating.

Table 3.17 Summary Assessment of the Incorporation of DRM and CCA in NPIS in Trinidad and Tobago

Criterion	Summary Assessment
Institutional framework for processes and national systems of public investment	The institutional framework for the processes and systems of public investment in Trinidad and Tobago is partially covered by legislation with the technical aspects administered by a diffuse organizational structure in which the Ministry of Planning and Sustainable Development having a coordinating and administrative role. SPCs have a major role in managing the execution of large investment projects. Regulations are generally limited to financial provisions and certain statutory technical approvals. Manuals have not been developed for most of the NPIS and technical approval and supervisory mechanisms of PIPs are not formally specified processes.
Development of conceptual models, methodologies and tools for incorporation of DRM in PIPs	No conceptual models have been defined and implemented for the incorporation of DRM. The sensitivity of executing agencies to the need for DRM considerations in PIPs and the standards used by contracted consultants have been the drivers of application of tools such as hazard risk analysis e.g. consideration of flood risk in potential site for highways. Buildings codes are used for approvals issued by the T&CD; however enforcement has been described as weak.
Outreach, training, technical assistance and information on incorporating DRM in PIPs	There is limited dissemination of information to NPIS personnel on incorporating DRM in PIPs. Expertise in this area was not regarded as necessary by some respondents as they felt DRM in the NPIS could be adequately addressed by the professional contracted to work on the projects. NPIS staff has not been trained in DRM application concepts and techniques, nor is any such technical assistance known to be used for the NPIS.
Political consensus and follow-up for the gradual adoption of the technical tools in the incorporation of the DRM in the PIPs	No minimum parameters have been established or proposed for DRM in PIPs, and no timelines were advised for implementation. There are no known mechanisms for disseminating successful experiences of DRM in the PIP.
Control mechanisms	The national authorities of audit and control do not examine incorporation of DRM in public investment projects, nor are sanctions applied as there are no laws or regulations governing the NPIS.

Incorporation of climate change considerations in the national public investment systems and education on climate change adaptation	No concepts or mechanisms related to climate change were known to be reflected in the processes of the NPIS or approval processes such as the CEC or approvals from T&CD. Coastal erosion has been noted and potential climate change impacts may be considered for some projects e.g. construction of roads near the sea. The consensus view was that as a result of recent Government focus on climate change, it is now being noted as a matter to be addressed. There is also no known programme for the NPIS for sensitisation/education on climate change or climate change adaptation. The Government prepared a National Climate Change Policy in 2011 to inform development of CCA and climate change mitigation policies and measures.

Incorporation of CCA in the NPIS

Based on responses of interviewees climate change is not generally considered for PIPs and there is no conceptual framework or mechanism to incorporate CCA in the NPIS or CECs and planning approvals. They have noted that sea level rise and coastal erosion were likely considerations in the case of civil works done at Mosquito Creek. In addition, they advised that a flood alleviation project under consideration for Port of Spain has included acknowledgement of the potential effects of rising sea levels on the existing flooding problem in that City. They reported that the Ministry of the Environment and Water Resources has proposals for implementing climate change mitigation and adaptation measures and there appears to be a recent increased visibility on the subject of climate change effects and adaptation. The National Climate Change Policy was completed in 2011 with the objective of guiding policy for developing a framework to address the effects of climate change, CCA and mitigation.

4 Comparative Analysis by DRM and CCA Criterion

4.1 Institutional framework for processes and national systems of public investment

With respect to the first criterion of assessment: Institutional framework for processes and national systems of public investment, Table 4.1 indicates that the overall assessment rating for The Bahamas, Guyana and Jamaica is green (completed), while for Barbados and Trinidad and Tobago partial fulfillment is being assigned. Notably, there exists in each of the former three countries the enabling institutional framework for the successful operations of the NPIS. For the parameter that deals with the existence of manuals for the NPIS, all countries excepting Jamaica (rated as partially fulfillment) are rated as non-existent. Additionally, only The Bahamas and Jamaica fulfilled and partially fulfilled (respectively) the parameter related to mechanisms for the technical approval

and supervision of PIPs. On the other hand, Jamaica is incipient with regard to the existence of mechanisms for the dissemination and access to material on the rules and presentation of the PIP.

Table 4.1 Institutional Framework (Criterion 1)

Country	No. of parameters	Red	Yellow	Green	Potential overall classification
The Bahamas	7	1		6	Completed
Guyana	7	1	2	4	Completed
Jamaica	7	1	2	4	Completed
Trinidad & Tobago	7	2	5	0	Partial Fulfilment
Barbados	7	2	4	1	Partial Fulfilment

4.2 Development of conceptual models, methodologies and tools for incorporation of DRM in PIPs

The comparative results under Criterion 2 which deals with conceptual models, methodologies and tools for incorporating DRM and CCA into NPIS are shown in Table 4.2. Jamaica is clearly ahead with three parameters being assessed as completed, whereas Barbados showed the least progress under Criterion 2, with an incipient evaluation for three parameters and partial accomplishment for its remaining three parameters. The rating (incipient) was dispersed for the countries and indicated that the five countries shows differing levels of progress for this criterion. The parameters that received incipient ratings for each country were as follows:

- The Bahamas: Parameter 5.
- Guyana: Parameters 1& 5
- Jamaica: Parameter 5
- Barbados: Parameter 1 & 5
- Trinidad and Tobago: Parameters 1, 4, 5

None of the targeted countries is given an overall classification of ‘completed’; hence the importance of capacity development with reference to this second criterion of the assessment framework.

The absence of conceptual models (Parameter 1) for the incorporation of DRM in the NPIS is noted for all countries, except Jamaica where there is partial fulfillment. In each of the targeted countries there needs to be improvement in the establishment of formal mechanisms for inclusion of risk analysis exist for projects in the reconstruction phase or general project design phase. Further, with the exception of Guyana, all other targeted countries have methodologies and technical tools for risk analysis in respect of DRM.

Importantly, while there is need for the development of mechanisms within the NPIS to provide opportunities for the inclusion of risk analysis in the project approval process in The Bahamas, efforts should be made to strengthen building codes and the EIA process in each of the targeted countries.

Table 4.2 Conceptual Models, Methodologies and Tools (Criterion 2)

Country	No. of parameters	Red	Yellow	Green	Potential overall classification
The Bahamas	6	3	1	2	Incipient
Guyana	6	2	3	1	Partial Fulfilment
Jamaica	6	1	2	3	Partial Fulfilment
Trinidad & Tobago	6	2	4	0	Partial Fulfilment
Barbados	6	3	3	0	Incipient

4.3 Outreach, training, technical assistance and information on incorporating DRM in PIPs

Table 4.3 indicates that overall, with the exception of Jamaica, the ratings given to the four remaining targeted countries suggest relatively poor performance with regards to political outreach and information on DRM and CCA in NPIS. Notably, Trinidad and Tobago and Barbados are evaluated as incipient for three parameters and partially accomplished for the remaining two parameters each. Jamaica is evaluated as accomplished for two parameters and as having partial progression for another three.

The comparative results suggest that in the area of 'Outreach, training, technical assistance and information,' Jamaica is making exceptional progress when compared to the other four countries. Finally, the Bahamas was evaluated as incipient for two parameters and partially accomplished for three parameters. The Bahamas also shows some progress in this criterion, having at least one parameter assessed 'completed'. There are notable similarities in the performance of The Bahamas, Trinidad and Tobago and Barbados: for example, the need for technical assistance to be provided to institutions that manage the NPIS, and enhancement of training opportunities in the application of risk analysis to PIP.

Table 4.3 Outreach and Information (Criterion 3)

Country	No. of parameters	Red	Yellow	Green	Potential overall classification
The Bahamas	5	2	2	1	Partial fulfilment

Guyana	5	1	4	0	Partial fulfilment
Jamaica	5	0	2	3	Completed
Trinidad & Tobago	5	3	2	0	Incipient
Barbados	5	3	2	0	Incipient

4.4 Political consensus and followup for the gradual adoption of the technical tools in the incorporation of DRM and CCA in PIPs

Results displayed in Table 4.4 suggest the countries, with the exception of The Bahamas and Jamaica, are assessed as being incipient under this criterion. The poor performance of countries is marked by the non-existence of regulations governing the minimum parameters of the DRM in public investment or deadlines for the incorporation of DRM and CCA in PIP in the targeting countries. It is noted that Guyana has a rating of 'completed' for Parameter 3: Existence of mechanisms to identify, exchange and dissemination of successful experiences. Nevertheless, all the countries need to develop capacities in respect of this criterion given its importance to the operationalization of DRM and CCA in PIPs.

Table 4.4 Political Consensus (Criterion 4)

Country	No. of parameters	Red	Yellow	Green	Potential overall classification
The Bahamas	3	1	2	0	Partially fulfilled
Guyana	3	2	0	1	Incipient
Jamaica	3	1	2	0	Partially fulfilled
Trinidad & Tobago	3	3	0	0	Incipient
Barbados	3	3	0	0	Incipient

4.5 Control Mechanisms

As Table 4.5 indicates, there is a general need for the five targeted countries to improve their performance with regard to this criterion.

Trinidad and Tobago, Barbados and The Bahamas showed similar results for Criterion 5: Control Mechanisms. These countries are assessed as being incipient (red) for both parameters in contrast to Guyana and Jamaica which show similar results: Guyana and

Jamaica are both assigned the colour yellow for Parameter 1 and evaluated as showing partial completion for one parameter. These two countries are slightly more progressive in respect of Criterion 5, particularly as it relates to the existence of control or audit involvement by national authorities. Therefore they may require less effort to fully meet the requirements in relation to: (i) the control, audit and verification of compliance of the NPIS; and (ii) sanctions for noncompliance with the incorporation of DRM and CCA in PIP by control and audit authorities or other relevant institutions at the national level. Nonetheless, the overall rating for each country is incipient.

Table 4.5 Control Mechanisms (Criterion 5)

Country	No. of parameters	Red	Yellow	Green	Overall evaluation
The Bahamas	2	2	0	0	Incipient
Guyana	2	1	1	0	Incipient
Jamaica	2	1	1	0	Incipient
Trinidad & Tobago	2	2	0	0	Incipient
Barbados	2	2	0	0	Incipient

5 Conclusions

A summary of the results with respect to the comparative analysis of the status of the incorporation of DRM and CCA in the targeted countries as well as key messages/lessons learnt gleaned from the study are presented below.

5.1 Summary of results based on comparative analysis

5.1.1 Institutional framework for processes and national systems of public investment

Generally, the institutional framework for NPIS in the five targeted countries is completed or at least partially completed. The absence of manuals to guide the NPIS process is definitely an issue that requires urgent attention, since only Jamaica has made progress in this area, but there is room for improvement. Technical supervision should be improved in Guyana, Barbados and Trinidad and Tobago.

5.1.2 Development of conceptual models, methodologies and tools for incorporation of DRM in PIPs

Conceptual models are virtually non-existent in The Bahamas, Guyana, Barbados, and Trinidad and Tobago, while only partially accomplished in Jamaica. Further, mechanisms for technical approval of the PIP for the reconstructing without risks and the building codes should be improved.

5.1.3 Outreach, training, technical assistance and information on incorporating DRM and CCA in PIPs

Overall, Jamaica has shown the highest level of achievement, while Guyana has been very progressive in the area of outreach, training, technical assistance and information on incorporating DRM and CCA in PIPs. On the other hand, The Bahamas, Barbados and Trinidad and Tobago have at least two parameters rated as incipient under this Criterion. The lack of technical assistance in the incorporation of DRM and CCA in PIP in also noted.

5.1.4 Political consensus and followup for the gradual adoption of the technical tools in the incorporation of DRM and CCA in PIPs

None of the targeted countries have regulations governing the minimum parameters of the DRM in public investment or statutory deadlines for the incorporation of DRM and CCA in PIP.

All the countries with the exception of Guyana for Parameter 1 of Criterion 4 were evaluated as being incipient under this criterion. Guyana has partially accomplished the established of mechanisms to identify, exchange and dissemination of successful experiences. Overall, all targeted countries need to develop capacities in respect of this criterion, given its importance to the operationalisation of DRM and CCA in PIPs.

5.1.5 Control mechanisms

All countries need to create and/or enhance their institutional capacity with regard to (i) the control, audit and verification of compliance of the NPIS; and (ii) sanctions for noncompliance with the incorporation of DRM and CCA in PIP by control and audit authorities or other relevant institutions at the national level.

5.2 Key messages/Lessons Learnt

The key messages emanating from this study are that:

1. The incorporation of DRM and CCA in NPIS can significantly reduce the immediate losses and cost of recovery from impacts associated with natural hazards and climate change. It may be seen as proactive resilience building.
2. A viable approach to addressing the common risk management challenges of Caribbean countries in respect of DRM and CCA is the consolidation of methodologies, the PIP approval process, knowledge and information sharing, and capacity building (particularly training).
3. Risk management integration in NPIS is critical.
4. The extent to which efforts are taken by each of the individual countries to incorporate DRM and CCA in PIP depends largely on the existence of an enabling institutional environment along with trained personnel and the demonstration of political commitment and will are essential elements for the successful implementation incorporation of DRM and CCA in PIP.
5. To ensure positive results of initiatives aimed at incorporating DRM and CCA in PIP, all countries need to strengthen their monitoring and enforcement capabilities.
6. There needs to be greater consolidation of efforts to promote synergies between institutions tasked with CCA and DRM at the national level. This will allow for the sharing of data and information, skilled personnel, best practices, among others, resulting in less duplication and the more efficient use of financial and other resources.
7. More training opportunities should be made available to officials who have critical roles and responsibilities within the context of each NPIS; for example, financial analysts, economists and planners need to acquire specific skills related to the application of DRM and CCA risk analysis tools.
8. Countries need to embrace a culture of evidence based decision making that will require the allocation of funds for a rigorous and sustained data collection system that will support the application of DRM and CCA risk assessment tools.
9. Standardised manuals on the conceptual models and the application of risk assessment tools should be developed and disseminated to Caribbean countries. This should be complemented by biennial regional/sub-regional meetings that may be financed by the IADB. These forums will allow for sharing of experiences and best practices of the incorporation of DRM and CCA in PIP.
10. The Ministry of Finance (MOF) must be a central/lead agency in these efforts and must be engaged across the entire project and policy process.

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Annexes

Annex 1

Questionnaire

This questionnaire is designed to evaluate the incorporation of Disaster Risk Management (DRM) in national public investment. The assessment on the progress is any of three levels: green (accomplished), yellow (in progress) and red (incipient or absent).

Green	Parameter fulfilled or accomplished
Yellow	There is advancement or progress towards fulfillment of the parameter but there are actions pending.
Red	The actions towards the fulfillment are non-existent or very incipient and isolated.

The National Public Investment System (NPIS) could be defined as **the institution in charge of receiving, analyzing and technically approving investment proposals from Ministries and other public organizations (sectoral and regional (local government level)) with the main objective to make public expenditure efficient; i.e. to approve every Project study that is considered best and adequate to be financed by Budget[11].**

[11] Translated and adapted from CEPREDENAC. *Guía actualizada de evaluación económica de la inclusión de la variable riesgo de desastres en la inversión pública y su aplicación en proyectos de desarrollo en Panamá, Honduras y Nicaragua*. 2da. Edición, (Centroamérica, 2012), 22.

General Information	
Institution	
Country	
Officer(s) Interviewed (Name, Position, Phone and E-mail)	
Mean (F-to-F, V/C, Phone, Mail)	
Beginning Time and Ending Time	

Instructions:

Please provide an assessment of each parameter by selecting a colour that best fits your perception and a brief explanation of your choice.

Criterion	Parameter	Evaluation	Red	Yellow	Green	Comments
Institutional framework for processes and national systems of public investment	Existence of legislation for the NPIS	This assesses whether there is a legal framework that clearly defines the responsibilities in relation to: (i) the development of standards, methods and technical instruments for the formulation of PIPs, (ii) the analysis of technical feasibility and economic and social profitability of the PIPs, (iii) the management of the information on the PIPs, (iv) monitoring for accomplishment and follow-up for public investment process and (v) training to actors involved in public investment. Where there is an institutional				

Criterion	Parameter	Evaluation	Red	Yellow	Green	Comments
		framework that is not enacted legislation or the relevant regulations, country is considered to be in the process of improvement.				
	Existence of an organizational structure for the functionality and coordination of NPIS	It assesses whether the entity or entities responsible for the NPIS have an organizational structure that allows developing functions established by the legal framework, including coordination with all public stakeholders involved in the PIP.				
	Existence of regulations for the NPIS	This assesses whether, in addition to the legal framework that establishes entity or entities responsible for the NPIS, such framework assigns regulations for the establishment and follow up monitoring of procedures for the PIP at the operational level.				
	Existence of manuals for the NPIS	This assesses whether the NPIS has manuals that define the procedures for elaboration, approval, registration and monitoring of a PIP, including specific guidelines for investments at the sector ministries.				
	Existence of mechanisms of technical approval of the PIP	This assesses whether the legal framework and the manuals define clearly the technical mechanisms				

Criterion	Parameter	Evaluation	Red	Yellow	Green	Comments
		(form to be filled, must be explicit about risk analysis, regulators can use for approval process, how is the approval is given? Process?) for the approval of the PIP.				
	Existence of technical supervision for the implementation of projects	This assesses whether those responsible for the NPIS, both in terms of the coordination system and in sector ministries, effectively perform technical supervision of the execution of the PIP. Experience in ex post evaluation				
	Existence of mechanisms for the dissemination and access to material related to the rules and presentation of the PIP	This assesses whether there are mechanisms for the dissemination among members of the NPIS and civil society. Mechanisms include guidelines, manuals, bulletins and other materials relating to procedures and progress of the NPIS. Focus on knowledge sharing etc. e.g. websites				
Development of conceptual models, methodologies and tools for incorporation of DRM in PIP	Existence of conceptual models for the incorporation of the DRM and CCA in public investment portfolios	This assesses whether the legislation and guidelines of the NPIS include the description of conceptual models (how are DRM and CCA conceptualised) for the incorporation of the DRM and climate change adaptation n the PIP.				

Criterion	Parameter	Evaluation	Red	Yellow	Green	Comments
	Existence of methodologies for incorporation of DRM in PIP	This assesses whether the guidelines and manuals for the PIP develop (specify) methodologies to be applied for the incorporation of DRM are consistent with proposed conceptual models.				
	Existence of technical tools for the incorporation of the DRM in NPIS	This assesses whether, in addition to a conceptual framework and a methodology for the incorporation of DRM in NPIS, there are technical tools (tools for risk analysis, e.g. CBA framework), such as for site evaluation, models for vulnerability analysis by each component, etc.				
	Existence of mechanisms of technical approval of the PIP with inclusion of the risk analysis	This assesses whether the mechanisms (CBA Cash flow that includes some risk analysis, or form for vulnerability analysis, any specific requirement of tools that goes into format to be approved)for approval of the PIP considers, as part of the criteria for approval, the incorporation of risk analysis in the PIP.				
	Existence of mechanisms of technical approval of the PIP for the phase of reconstruction[1]	This assesses whether there are special mechanisms for the reconstruction phase (as soon as possible may render technical requirement 'soft' in the context of resilience building that guarantee				

Criterion	Parameter	Evaluation	Red	Yellow	Green	Comments
		rapid processes, with transparency and without reconstruction of the risk.				
	Existence of other instruments, such as building codes, environmental impact assessment which are used at a general level both in the public and private sector	This assesses whether instruments (could be sectoral) such as building codes and the environmental impact assessment/evaluations incorporate considerations of DRM and CCA, and if applied widely to the PIP, as part of the rules and procedures in force.				
Outreach, training, technical assistance and information on incorporating DRM in PIP	Existence of processes of sensitization for authorities and national and subnational officers, private sector, civil society and others in respect to the importance of incorporating DRM in PIP	This assesses whether actions (forums/systematic attempts) have been developed/taken to sensitize key actors regarding the incorporation of DRM and CCA in public investment portfolios, in order to ensure and increase awareness of the issue.				
	Existence of technical assistance to the institutions that manage the system to formulate PIP, with emphasis on the specific application of the concepts and methodologies developed by the government.	This assesses whether the NPIS provide technical assistance (training, website resources, elearning step by step manuals; Advisers/Resource Persons to be accessed by emails/phone call) to the institutions that that formulate PIP system, including specific support for the application of the methodologies and concepts in relation to the incorporation of DRM in PIP.				

Criterion	Parameter	Evaluation	Red	Yellow	Green	Comments
	Existence of personnel responsible for project design trained in the application of the methodology of risk analysis	This assesses whether the staff responsible for the design of the PIP within the NPIS is trained in the application of methodologies and tools for incorporating DRM and CCA.				
	Existence of inventories of public infrastructure by sector or territory[2]	This assesses whether there are databases of public infrastructure inventory for different sectors or territories.				
	Existence of timely and reliable information of hazards, vulnerability and risk available to PIP formulators and managers.	This assesses whether PIP formulators have access to timely and reliable information on threats, vulnerability and risk, allowing for application of the methodology and tools for the incorporation of DRM in PIP.				
Political consensus and follow-up for the gradual adoption of the technical tools in the incorporation of the DRM in PIP	Update the regulations governing the minimum parameters of the DRM in public investment	This assesses whether in the last 5 years, the country has developed or is developing initiatives to update the rules and the criteria that define the minimum parameters for the incorporation of DRM in PIP.				
	Existence of reasonable deadlines for the incorporation of DRM in PIP and the verification of its obligation.	The legal framework and procedures define reasonable deadlines for the incorporation of the DRM in PIP and the verification of their mandatory minimum				

Criterion	Parameter	Evaluation	Red	Yellow	Green	Comments
		contents, general methodology and projects bank, specific sectorial methodologies, and specific methodologies at the territorial level.				
	Existence of mechanisms to identify, exchange and dissemination of successful experiences.	This assesses whether there are mechanisms to identify, document and disseminate best practices that can promote the incorporation of the DRM in PIP.				
Control mechanisms	Existence of control or audit involvement by national authorities, in order to ensure the timely compliance with the regulations.	This assesses whether the national authorities (financial authorities) of control and audit perform actions to verify the compliance of the NPIS.				
	Existence of sanctions for non-compliance with the standards and the incorporation of the DRM in PIP from authorities of control and audit or other relevant institutions.	This assesses whether there are relevant experiences, sanctions for noncompliance to the incorporation of DRM and CCA in PIP by control and audit authorities or other relevant institutions.				

Annex 2

Criteria and Assessment Parameters for Assessing the Incorporation of DRM in the NPIS in the Caribbean

Criterion	Parameter	Assessment
Institutional framework for processes and national systems of public investment	Existence of legislation for the NPIS	This assesses whether there is a legal framework that clearly defines the responsibilities in relation to: (i) the development of standards, methods and technical instruments for the formulation of PIPs, (ii) the analysis of technical feasibility and economic and social profitability of the PIPs, (iii) the management of information on the PIPs, (iv) monitoring for accomplishment and follow-up of public investment process and (v) training to actors involved in public investment. Where there is an institutional framework that is not supported by enacted legislation or the relevant regulations, the status of accomplishment of this parameter is assessed as being in progress.
	Existence of an organizational structure for the functionality and coordination of NPIS	This assesses whether the entity or entities responsible for the NPIS has/have an organizational structure that allows developing functions established by the legal framework, including coordination with all public stakeholders involved in the PIP.
	Existence of regulations for the NPIS	This assesses whether, in addition to the legal framework that establishes entity or entities responsible for the NPIS, such framework assigns regulations for the establishment and follow up monitoring of procedures for the PIP at the operational level.
	Existence of manuals for the NPIS	This assesses whether the NPIS has manuals that define the procedures for elaboration, approval, registration and monitoring of a PIP, including specific guidelines for investments at the sector Ministries.
	Existence of mechanisms of technical approval of the PIP	This assesses whether the legal framework and the manuals define clearly the technical mechanisms for the approval of the PIP.
	Existence of	This assesses whether those responsible for the

Criterion	Parameter	Assessment
	technical supervision for the implementation of projects	NPIS, both in terms of the coordination system and in sector Ministries, effectively perform technical supervision of the execution of the PIP.
	Existence of mechanisms for the dissemination and access to material related to the rules and presentation of the PIP	This assesses whether there are mechanisms for the dissemination among members of the NPIS and civil society. Mechanisms include guidelines, manuals, bulletins and other materials relating to procedures and progress of the NPIS.
Development of conceptual models, methodologies and tools for incorporation of DRM in PIP	Existence of conceptual models for the incorporation of the DRM in public investment portfolios	This assesses whether the legislation and guidelines of the NPIS include the description of conceptual models for the incorporation of DRM and in the PIP.
	Existence of methodologies for incorporation of DRM in PIP	This assesses whether the guidelines and manuals for the PIP develop methodologies to be applied for the incorporation of DRM that are consistent with proposed conceptual models.
	Existence of technical tools for the incorporation of the DRM in NPIS	This assesses whether, in addition to a conceptual framework and a methodology for the incorporation of DRM in NPIS, there are technical tools such as for site evaluation, models for vulnerability analysis by each component, etc.
	Existence of mechanisms of technical approval of the PIP with inclusion of the risk analysis	This assesses whether the mechanisms for approval of the PIP considers, as part of the criteria for approval, the incorporation of risk analysis in the PIP.
	Existence of mechanisms of technical approval of the PIP for the phase of reconstruction	This assesses whether there are special mechanisms for the reconstruction phase that guarantee rapid processes, with transparency and without reconstruction of the risk.

Criterion	Parameter	Assessment
	Existence of other instruments, such as building codes, environmental impact assessment which are used at a general level both in the public and private sector	This assesses whether instruments such as building codes and the environmental impact assessments incorporate considerations of DRM and if applied widely to the PIP, as part of the rules and procedures in force.
Outreach, training, technical assistance and information on incorporating DRM in PIP	Existence of processes of sensitization for authorities and national and subnational officers, private sector, civil society and others in respect to the importance of incorporating DRM in PIP	This assesses whether actions have been developed/taken to sensitize key actors regarding the incorporation of DRM in PIPs, in order to ensure and increase awareness of the issue.
	Existence of technical assistance to the institutions that manage the system to formulate PIP, with emphasis on the specific application of the concepts and methodologies developed by the government.	This assesses whether the NPIS provides technical assistance to the institutions that formulate PIP systems, including specific support for the application of the methodologies and concepts in relation to the incorporation of DRM in PIPs.
	Existence of personnel responsible for project design trained in the	This assesses whether the staff responsible for the design of the PIP within the NPIS is trained in the application of methodologies and tools for incorporating DRM.

Criterion	Parameter	Assessment
	application of the methodology of risk analysis	
	Existence of inventories of public infrastructure by sector or region	This assesses whether there are databases of public infrastructure inventory for different sectors or regions.
	Existence of timely and reliable information of hazards, vulnerability and risk available to PIP formulators and managers.	This assesses whether PIP formulators have access to timely and reliable information on hazards, vulnerability and risk, allowing for application of the methodology and tools for the incorporation of DRM in PIPs.
Political consensus and follow-up for the gradual adoption of the technical tools in the incorporation of DRM in PIP	Update the regulations governing the minimum parameters of the DRM in public investment.	This assesses whether in the last five (5) years, the country has developed or is developing initiatives to update the rules and the criteria that define the minimum parameters for the incorporation of DRM in PIPs.
	Existence of reasonable deadlines for the incorporation of DRM in PIP and the verification of its obligation.	This assesses whether the legal framework and procedures define reasonable deadlines for the incorporation of DRM in PIPs and the verification of their mandatory minimum contents, general methodology and projects bank, specific sectoral methodologies, and specific methodologies at the territorial level.
	Existence of mechanisms to identify, exchange and dissemination of successful experiences.	This assesses whether there are mechanisms to identify, document and disseminate best practices that can promote the incorporation of DRM in PIPs.
Control mechanisms	Existence of control or audit involvement by national authorities, in order to ensure	This assesses whether the national authorities of control and audit perform actions to verify the compliance of the NPIS.

Criterion	Parameter	Assessment
	the timely compliance with the regulations.	
	Existence of sanctions for non-compliance with the standards and the incorporation of the DRM in PIP from authorities of control and audit or other relevant institutions.	This assesses whether there are relevant experiences, sanctions for noncompliance in the incorporation of DRM in PIPs by control and audit authorities or other relevant institutions.

Annex 3

List of Interviewees

The Bahamas

Entity	Interviewee(s)
Ministry of Finance	Senior Officer(s) with Responsibility for Public Investment
Ministry of Works and Urban Development	Acting Director and Assistant Director
Ministry of The Environment and Housing	Director
National Emergency Management Agency	Director
Bahamas Society of Engineers	President and Member

Barbados

Entity	Interviewee
Ministry of the Environment and Drainage	Director, Coastal Zone Management Unit Acting Director, Coastal Zone Management Unit Project Manager, Coastal Risk Assessment and Management Program
Ministry of Finance and Economic Affairs	Manager, Public Investment Unit
Ministry of Health	Senior Medical Officer of Health (with responsibility for Climate Change and Disaster Management) Deputy Chief Environment Health Officer Project Manager, Climate Change in Health Project Health Planner Financial Controller
Ministry of Transport and Works	Chief Technical Officer Chief Planning Officer Planning Officer (Ag)
Department of Emergency Management (DEM)	Director, Department of Emergency Management Program Officers (2)

Guyana

Entity	Interviewee
Ministry of Communities	Permanent Secretary
Ministry of Agriculture	Permanent Secretary

Ministry of Finance	Director of Budget
Work Services Group **Ministry of Public Infrastructure**	Coordinator/Chief Works Officer
Civil Defence Commission	Director General (ag.)
Guyana Association of Professional Engineers (GAPE)	President
Office of Climate Change **Office of the Presidency**	Presidential Advisor on the Environment

Jamaica

Entity	**Interviewees**
The Planning Institute of Jamaica	PPCR Focal Point SD Planning Officer
Jamaica Institute of Engineers	President Honorary Secretary
Meeting with Ministry of Transport and Works	Permanent Secretary
Meeting with Ministry of Water, Land, Environment and Climate Change	Chief Technical Director
Disaster Risk Reduction Centre, University of the West Indies, Mona Campus, Jamaica	Director

Trinidad and Tobago

Entity	Interviewee
Ministry of Finance	Permanent Secretary
Ministry of Planning and Sustainable Development	Director Project Planning and Reconstruction
Ministry of Works	Deputy Permanent Secretary Acting Chief Planning Officer Land Use Planner Senior Health and Safety Specialist Senior Planning Officer Senior Economist
National Infrastructure Development Company Limited (NIDCO)	Vice- President (Ag), Engineering and Programme Management Senior Planning Officer
University of the West Indies	Professor, Life Sciences
Office of Disaster Preparedness and Management	Chief Executive Officer