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Draft Background Paper

Toward Improving Caribbean SIDS policy, legislative and regulatory frameworks, implementation and monitoring and reporting approaches to gender mainstreaming into selected sectors of water resources management and climate-related events and disaster risk reduction

This document outlines key issues and experiences related To gender mainstreaming in water resource management for disaster risk reduction.

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1. Introduction

A. Objectives and Study Approach

This document results from a study of the nexus of gender, water resource and disaster risk management in the Caribbean. It is part of an initiative to "review the status of and provide guidance on gender mainstreaming in disaster and risk management frameworks, focusing on water resources management". The initiative is intended in part to inform further development of a Caribbean gender policy and thereby help to enable improvement in measures to reduce disaster risk through protection of all of the populations of CARICOM Member states. A focus on gender is important in this regard because differences in access, control, and use of resources can dictate the extent to which persons are exposed to hazards and rate at which they are able to recover from catastrophic events.

The study was undertaken mainly through secondary research, stakeholder consultations and data and information analysis. The steps and related tasks taken are outlined below.

- 1. Review of documents such as-.
 - i) International and regional agreements and commitments on gender, disaster risk reduction, climate change and water resource management.
 - ii) Assessment of progress made by Caribbean countries toward achieving globally agreed goals, objectives and targets under the Sustainable Development Goals (SDGs) and similar development rubrics.
 - iii) Reports of select Caribbean country experiences of rapid onset and catastrophic hydro-meteorological events.
 - iv) National policies, strategies and plans that directly and indirectly address climate change, disaster risk reduction and water resource management, and that provide for mainstreaming gender considerations in their respective implementation.
- 2. Consultation with regional practitioners on issues related to the key thematic areas of the study, including gender, water resource management, disaster risk reduction/disaster risk management and climate change.
- 3. Analysis of data and information collected through research and stakeholder interviews and development of menu suggestions for policy action.

B. Limitations and Key Concepts

Due to time constraints, the study focuses mainly on the circumstances around rapid onset hydrometeorological events and select aspects of water resource management. Issues reviewed include water resource management policies and practices, and ways in which these are implemented and affect rural and peri-urban areas, and informal communities within urban settings. The rationale for the focus on water is its role in exacerbating climate related events, and therefore the potential for reducing disaster risk through its effective management. This is underscored by the United Nations *Water and Disaster Risk* assertion that"Water-related risks arise from too much water, too little water, or polluted water....Water is key in managing disaster and addressing climate change impacts, because water is the medium through which most climate impacts and many disasters such as droughts and floods are felt. To recognize this reality and to respond accordingly is essential (2014, p. 2)".

Given this recognized role of water in exacerbating and reducing risk, Caribbean experiences in water resource management are analyzed throughout this report in terms of whether they arise before, during or in the aftermath of rapid onset events.

The analysis of gender will be done taking account of the following points drawn from United Nations Development Programme (UNDP) publication <u>Integrating Gender in Disaster Risk</u> <u>Management in Small Island Development States: A Guide (2012, p.10).</u>

"A *gender analysis* helps identify difference between men and women in terms of activities, conditions, needs, and control over resources and access to development benefits and decision–making. Three elements need to be examined:

Division of labour. Men commonly are involved in the productive sphere whereas women often carry the reproductive tasks of caring for children, elderly and the sick, as well as running the household. Differences in social stature, wages or access to decision—making due to a gendered division of labour must be considered.

Division of resources. Access to capital assets and control over resources impacts an individual or household's ability to mitigate the effects of disaster.

Needs. Practical and strategic needs differ greatly between men and women".

C. Key Contextual Issue-Linking rapid-onset and slow-onset events

Whilst the analysis is focused on impacts from rapid onset hydro-meteorological events, the link to and influence of slow onset occurrences cannot be overlooked. Most relevant to the Caribbean in this regard are climate change and droughts. Discussions with practitioners and review of the literature point to the likely effects of climate change on hurricane intensity and on the rapidity with which storms graduate to the highest levels measured on the Saffir-Simpson scale¹. With respect to droughts, discussions with respondents from the Caribbean Regional Fisheries Mechanism (CRFM, Haughton/Murray/Mendoza; 18/11/2019) point to recent experiences of countries such as Saint Lucia, where the impacts of heavy rainfall and tropical storms are exacerbated by conditions that develop during drought. Whilst climate change and drought are not fully treated in this study, these effects are recognized and provided for in analyses and recommendations.

¹ The Intergovernmental Panel on Climate Change 5th Assessment Report acknowledges the constraints on quantitative evidence in this regard whilst recognizing qualitative information that affirm this position (*AR5 29.5*) Factors contributing to constraints include inadequate projections of regional sea level rise and lack of long term monitoring of changes in climate risk.

2. Socioeconomic and Policy Context

The study draws from data, analyses and reports produced by or relating to gender, water resource management, and disaster risk in Caribbean Community member and associate member states. Table 1 below shows population related data for thirteen of these states. Of note is the relatively high proportion of rural population of most of the states, and the wide range in the population densities. Belize, Suriname and Guyana have less than 10 persons per square kilometre; Bermuda and Barbados have 1,106.4 and 618.5, respectively. The indicators point to challenges in providing for water resource needs and for managing disaster risk. Countries with relatively high rural population musts must consider a mix of urban and rural water systems. Where this coincides with low population densities, it is likely that determining the appropriate water system is further complicated by the existence of small communities that are widely dispersed across the country. For many countries in the region also, terrain and variations in elevation levels can pose challenges to constructing piped-water infrastructure.

Country	Population Density-	Percent of Total Population				
Country	Kilometre	Urban	Rural			
Antigua and Barbuda	156.1	24.7	75.3			
Bahamas, The	28.0	82.9	17.1			
Belize	9.1	45.6	54.4			
Barbados	618.5	31.2	68.8			
Bermuda	1,106.4	100.0	-			
British Virgin Islands	128.8	47.3	52.7			
Dominica	94.8	70.2	29.8			
Grenada	295.0	36.2	63.8			
Guyana	3.9	26.5	73.5			
Haiti	281.0	54.3	45.7			
Jamaica	234.0	55.4	44.6			
St. Kitts and Nevis	161.8	30.8	69.2			
St. Lucia	240.8	18.6	81.4			
St. Vincent and the						
Grenadines	277.0	51.8	48.2			
Suriname	2.8	66.0	34.0			
Trinidad and Tobago	244.5	53.2	46.8			

Table 1: Select Population Indicators, Select Caribbean Countries

Source: World Bank Database, World Development Indicators

Other characteristics of the countries that have implications for water resource and disaster risk management are described below.

- Bermuda is the only country that has its entire population classified urban.
- Three states-Belize, Guyana and Suriname-are non-archipelagos and share

transboundary rivers with one or more countries, and have a significant proportion of their population living in rural or non-urban areas. These states also have indigenous peoples, with some residing on their territories in rural areas. For some rural communities' direct access to and use of rivers and streams is central to their daily routines, and activities can include bathing or washing on rocks at the river's edge. For these states, upstream activities or natural hazards that originate in neighbouring countries can have serious impacts. Notably, these states have the lowest population densities and one-third or more of their population living in rural areas.

- One state—Haiti, shares a transboundary river with another country, and has approximately half the population living in rural areas.
- Five states have more than two-thirds their population residing in non-urban or rural areas. These are Antigua and Barbuda, Barbados, Grenada, Saint Kitts and Nevis and Saint Lucia.

Of further note is that Caribbean countries have high proportions of communities living in coastal areas, whether they are considered urban or rural. Also, many communities that reside inland are located on the banks of rivers. This lends to ever-present risks of losses due to storm surge or floods in the event of natural disasters.

There are notable trends in labour and employment across the Caribbean that have implications for vulnerabilities to disasters. Table 2 shows that for eight CARICOM member states 66.1 per cent or more of total employed population are engaged in the services sectors. Furthermore, 82.1 per cent or more of working females in all of the states, except Haiti, work in services. In Haiti, just under half of total employed population work in agriculture and 63.2 per cent of employed males do. Agriculture is also critical for male employment in Belize and Guyana, with just 25.0 per cent of employed males in those countries working in that sector. It is important to note that agriculture in this context represents the primary sector, and therefore includes fisheries.

· · · · · · · · · · · · · · · · · · ·										
	Agriculture			I	ndustry		Services			
Country Name	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Bahamas, The	2.6	4.4	0.4	16.1	27.0	3.3	81.3	68.6	96.2	
Belize	17.4	24.9	5.2	14.6	18.6	8.1	67.9	56.5	86.7	
Barbados	2.8	3.8	1.8	19.2	29.2	9.1	78.1	67.1	89.1	
Guyana	18.3	24.6	6.1	25.7	33.2	11.3	56.1	42.2	82.6	
Haiti	49.7	63.2	34.1	10.2	13.7	6.2	40.1	23.1	59.7	
Jamaica	16.4	22.3	8.9	15.7	23.3	6.0	67.9	54.4	85.0	
St. Lucia	9.9	14.6	4.0	22.1	28.7	13.9	68.0	56.8	82.1	
St. Vincent and the										
Grenadines	13.4	18.5	6.6	0.5	30.5	7.2	66.1	51.1	86.2	
Suriname	6.9	8.7	3.9	24.7	34.3	8.3	68.3	57.0	87.9	
Trinidad and Tobago	3.1	4.3	1.5	27.3	38.4	12.4	69.5	57.3	86.0	

Table 2: Employment by Sector, 2019, ILO Estimates, Per cent of Respective Employed Population

Source: World Bank Database, World Development Indicators

In terms of overall employment trends, Table 3 shows significantly lower percentages of working-age women participating in the workforce across all of the ten countries. An important indicator also is the level of employed population categorized as self-employed. These persons are working on their own or with one or more partners, and draw their income from the returns of their enterprise. This has implications for risk management provisions such as catastrophic insurance coverage, and for the length of time and level of resources needed for recovery after a disaster. Another factor is that indicators for Guyana and Haiti show that a majority of the working population in these countries are self-employed, and the proportion of employed women so described is higher than that of employed men. The proportions of those self-employed are relatively high in Belize, Jamaica and Saint Lucia when compared to the rest of the group. The lowest proportion is recorded for the Bahamas, Barbados and Suriname.

	Labor Ford	e Participat	tion Rate,	Self-Employed as a Percent of				
	Percent o	of Respectiv	e Group	Respective Employed Labor force G				
Country Name	Total	Male	Female	Total	Male	Female		
Bahamas, The	82.1	88.5	76.0	14.4	19.5	8.5		
Belize	69.8	84.0	56.0	33.8	34.0	33.5		
Barbados	77.5	80.2	75.0	16.6	21.3	11.8		
Guyana	61.3	77.6	44.5	60.3	57.5	65.8		
Haiti	69.0	73.0	65.2	86.1	84.2	88.4		
Jamaica	72.7	78.2	67.4	39.2	44.2	32.9		
St. Lucia	74.7	81.6	68.1	35.1	39.8	29.1		
St. Vincent and the								
Grenadines	74.4	84.7	63.7	23.7	27.0	19.4		
Suriname	56.8	69.6	43.9	14.0	16.0	10.6		
Trinidad and Tobago	68.3	78.8	58.0	23.4	29.1	15.7		

Table 3: Key Labour Force Participation and Self-Employment Indicators, 2019, ILO Es	stimates,
Per cent of Respective Population	

Source: World Bank Database, World Development Indicators

A. Overview of Water Resources and Disaster Risk Management in the Caribbean

i) Water Resource Management

Achieving integrated water resource management (IWRM) was a key objective enshrined in the Johannesburg Plan of Implementation of the World Summit on Sustainable Development. IWRM was propagated since before the 1992 United Nations Conference on Environment and Development, and rests on the Dublin-Rio Principles set out below.

- 1. Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment.
- 2. Water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels.
- 3. Women play a central part in the provision, management, and safeguarding of water.

4. Water is a public good and has a social and economic value in all its competing uses.

The second and third principles are particularly relevant to the confluence of gender roles, water and disaster risk.

Table 4 shows that a high proportion of the populations of fourteen Caribbean countries access basic water and sanitation. Notwithstanding, there are vulnerabilities given the exposure of the region to climate hazards, particularly hurricanes and extended period of droughts. For countries for which more detailed indicators are provided the proportion of rural populations that access basic water and sanitation services is lower that of urban populations.

	Total P	opulation	Urban P	opulation	Rural Population			
Country	Basic Drinking Water	Basic Sanitation	Basic Drinking Water	Basic Sanitation	Basic Drinking Water	Basic Sanitation		
Antigua and Barbuda	96.7	87.5						
Bahamas, The	98.9	94.9						
Belize	98.0	87.9	98.9	93.1	97.2	83.5		
Barbados	98.5	97.3						
Bermuda	99.9	99.9	99.9	99.9				
British Virgin Islands	99.9	÷	:					
Grenada	95.6	91.5	:	:				
Guyana	95.5	85.8	100.0	91.5	93.9	83.7		
Haiti	65.5	34.7	84.6	43.8	42.6	23.9		
Jamaica	90.6	87.3	95.5	85.5	84.6	89.5		
St. Lucia	98.2	88.4	97.8	77.8	98.2	90.8		
St. Vincent and the								
Grenadines	95.1	87.2						
Suriname	95.4	84.5	98.2	89.4	90.0	74.8		
Trinidad and Tobago	98.2	93.4						

Table 4: Water and Sanitation Indicators in Select Caribbean Countries as of 2017

Source: World Bank Database, World Development Indicators

Configurations of water resource management arrangement vary across the region. The Global Water Partnership (GWP, 2014) draws on the works of Cashman (2012) and McIntosh and Leotaud (2007) to underscore that in most Caribbean states

"responsibility for different aspects of water management is dispersed across more than one ministry, which often results in water quality and environmental management being shared between ministries of health and environment and governed separately from water management (2014, p 17)".

A further assertion of the report is that in most states in the region water resource management is undertaken by water service providers, whilst in Jamaica, Saint Lucia and Trinidad and Tobago, it is separated from water delivery (needs update). In fact, Cashman (2012, p.19) indicates that these three countries, along with Grenada, are the only ones in the region that had adopted sector

water policies [as 2012, the date of the report]. A further consideration in water resource management and provision of water services is the distance between source and users, and features of the terrain over which delivery infrastructure would need to be built

ii) Disaster Risk Management

The Caribbean Disaster Emergency Management Agency (CDEMA) is critical to the response mechanisms of regional states. A total of 18 Caribbean countries are member states of CDEMA, which has an expressed philosophy of "changing lives through cdm [comprehensive disaster management]" and mission "to empower participating states, influence, collaborate and partner with other organizations, to build disaster resilience in the Caribbean." CDEMA is currently pursuing a 2014-2024 CDM Strategy, centered on the following future desired state for participating countries.

- 1. National, regional and sectoral institutions with adequate minimum standards of capacity to deliver the CDM Programme
- 2. Knowledge management which is applied for fact-based decision-making
- 3. Disaster resilience which is enhanced within key sectors of the economy
- 4. Operational readiness at regional, national, sectoral and local levels
- 5. Harmonized governance of CCA [Climate Change Adaptation] and DRR [Disaster Risk Reduction] programming
- 6. Community resilience which has been enhanced for the most vulnerable with gender concerns addressed at all stages and levels
- 7. Resource allocation which underpins the ability to deliver on the strategy

The inclusion of a desired state of countries' harmonizing CCA and DRR in the CDM Strategy underscores the region's recent experiences with tropical cyclones. Annex 3 shows that of the six cyclones that impacted the region since 2016, four have been recorded at Category 4 or 5 on the Saffir-Simpson scale. The increased frequency of high intensity storms has been linked to a warming climate by the IPCC.

The commitment to a comprehensive approach to disaster risk management and to the desired states of the CDM strategy are reinforced and reflected at the national levels. In that regard, Caribbean states' have all adopted emergency response mechanisms that rely on organizations, and individual experts drawn from the public and private sector, and on community level participation. Furthermore, many states have disaster risk management provisions enshrined in national, local and sectoral level plans [source].

iii) Gender

All Caribbean countries are signatories to the Convention on the Elimination of All forms of Discrimination Against Women (CEDAW), and subscribe to the Beijing Platform of Action which sets the agenda for the empowerment of women. Of note when considering the confluence of gender, water resource management and disaster risk reduction is that a high proportion of households in the region are female headed. ECLAC-Caribbean's Synthesis report of the region's progress toward achieving Beijing Platform objectives show the proportion of

households headed by women ranged from 28.3 per cent to 43.5 per cent (Mondesire, 2015, p. 13). These measures were recorded at different points between 2007 and 2014.

Other gender consideration highlighted in part by the Synthesis Report, and reinforced and complemented by a review of the 2017 gender development index (GDI) as seen at Annex 1 are related to education and health outcomes. The 2017 GDI shows women's life expectancy and expected and average years of schooling surpassing men's. The synthesis report points to factors such as lifestyle, use of medical and healthcare facilities, and higher risk levels of some male dominated occupations as possible contributors to this difference (p. 11). It is well known too that for most Caribbean countries school dropout and transition rates are respectively higher and lower for males than for females. This affects expected and realized years of schooling.

A further note on the GDI is that for seven of the countries in the table men's average per capita income significantly exceeds women's. Moreover in four of the six countries for which GDI data is complete, gender parity has not been achieved. The exceptions to this are Barbados and Trinidad and Tobago.

a) Gender and Water

The need for mainstreaming gender in water resource management for disaster risk reduction is reinforced by the visibility of women in water resource use across the Caribbean. Outside of periods of emergency and disaster response, women generally lead household activities around storing and using water. Where access is challenged because of service interruptions, the process of identifying alternative sources is often led by women. This is especially notable in rural communities and in areas where piped water supply is sporadic or provided on a rotation basis.

b) Gender and Disaster

A 2009 study conducted through the Caribbean Risk Management Initiative (CRMI) looked at gender visibility in Disaster Risk Management and Climate Change in five Caribbean countries, including Belize, Dominica, Jamaica and Guyana. The study demonstrated the following key issues with respect to gender visibility in disaster risk management (UNDP, 2009).

- 1. Limited awareness of differences in the gender impact of disasters;
- 2. Limited knowledge of the regional plan of action for gender mainstreaming that was then being advocated by the Caribbean Disaster Emergency Response Agency, now CDEMA;
- 3. No integration of gender machineries into national disaster planning mechanisms (with the exception of Jamaica, where the Bureau of Women's Affairs led a training activity...
- 4. Absence of a policy to mainstream gender in disaster risk management

With respect to linkages between the gender and disaster risk management mechanisms operating in the focus countries the study found that "a common feature in all the... assessments; collaboration between the two respective groups was generally sporadic and specific to welfare response for women and their families when disasters occurred (p. 14)."

Since the completion of the CRMI study, awareness of the need to incorporate gender in disaster risk management activities across the region has been heightened.

B. The enabling framework for mainstreaming gender in water resource management for disaster risk reduction in the Caribbean.

As with other socioeconomic areas, establishing an enabling framework for gender mainstreaming in water resource management requires deliberate effort and a multi-pronged approach. UN Women 2014 Guidance Note on mainstreaming explains the concept as follows-

"Gender mainstreaming integrates gender equality components in national public and private organizations, in central or local policies, and in services and sectoral programmes. In the longer run, it aims at transforming discriminatory social institutions, recognizing that discrimination can be embedded in laws, cultural norms and community practices that, for example, limit women's access to property rights or that restrict[s] their access to public space. Such progressive changes rely on access to data, gender expertise, sound analysis, supportive cultures, budgets and the mobilization of social forces (p. 7)".

The document also sets out the following multiple tracks that can be adopted in order to achieve gender mainstreaming, which itself is described therein as multifaceted (ibid, p.19).

- **Targeted or focused**. These are described as programme interventions that address the needs and circumstances of specific population groups, geographic areas or organizations.
- **Integrated Operations.** These are intended to change or shape existing mainstream policies, sector initiatives and government systems.
- **Direct Interventions.** These are initiatives such as services, subsidies, community level advocacy and large-scale social mobilization efforts that are implemented or taken along specific themes.
- **Indirect Interventions.** These are activities such as research, policy dialogue, institution building, capacity development, gender-responsive budgeting.
- Short term measures. These are initiatives that are progressive, transitional or preparatory. The guide cites media campaigns as an example.
- Long term measures. This refers to systemic changes. Social or behavioral changes that are followed by transformation in social norms.
- **Government measures across sectors.** These are measures such as new legislation, policies, approaches to data generation or government budgeting
- Sector Specific Measures. Measures taken within specific sectors, such as health or transport.

Efforts at gender mainstreaming across the Caribbean typically initiate with government measures—legislation, policies and approaches. The analyses in this section will look at the extent to which policy and administrative measures exist that engender mainstreaming in water resource or disaster risk management. In addition to a panoramic view of efforts to adopt or encourage measures across the Caribbean, the section will include articulation of approaches to and practices in water resource and disaster risk management and gender to highlight issues that could improve or impede mainstreaming.

i) Recent Measures to Improve Legislative and Institutional Arrangements and Practices for Water Resource and Disaster Risk Management

Caribbean countries sustainable development objectives are largely enshrined in the SIDS Accelerated Modalities of Action (SOMOA) Pathways adopted in 2014. The Region's 2018 Draft Caribbean Midterm Report on the SOMOA Pathways identifies a number of policy and legislative measures taken by countries toward achieving SDGs through the Pathways. A number of measures that have implications for gender mainstreaming in water resource and disaster risk management and were included in the draft are identified below.

a) Toward Water and Sanitation (SDG 6)

The following points are drawn from pages 65 to 69 of the draft report.

- Government of Jamaica development of a draft National Water Sector Policy and Implementation Plan.
- Trinidad and Tobago initiation of plans to construct a third desalination plant.
- Projects underway in Dominica and in Haiti to rebuild water systems that were significantly damaged or destroyed by hurricanes.
- Legislation for rainwater harvesting passed in Barbados, Bermuda, Grenada and the U.S. Virgin Islands and the Caribbean Rainwater Toolbox updated and re-launched in 2015.
- Development of a Water, Sanitation and Hygiene (WASH) sectoral plan in Haiti.

The report cites a need for attention to and investment in wastewater management, as well as lower levels of coverage in sanitation services than in potable water.

b) Toward Disaster Risk Reduction (SDG 11)

The following points are drawn from pages 51 - 52 of the draft report.

- Barbados' preparation of a Draft Physical Development Plan inclusive of provisions for flood mitigation measures that would "increase water infiltration and reduce run off".
- The Bahamas' incorporation of water preparedness and response measures in the Bahamas long term development plan.
- Belize's elaboration of a climate resilience plan.
- Guyana's application of a community consultation approach to disaster risk management planning.
- Jamaica's 2018 passage of a Building Act that would facilitate revision of a national building code.
- Suriname's adoption of a Policy and Development Plan 2017 2021 that incorporates provisions of its national disaster reduction strategy,
- Inclusion by Haiti of provisions for national and local development that would help to include disaster risk management as par
- c) The British Virgin Islands 2018 establishment of a Recovery and Development Agency.

ii) Gender Mainstreaming

Notwithstanding the clarity provided by guidelines such as that from which this list is drawn, efforts at mainstreaming gender considerations in public policy and programmes have met with limited success across the Caribbean. One of the considerations in this regard may be that mainstreaming gender is still largely viewed as a sectoral concern relating to women's security. Overall, the situation continues to be marked by ECLAC's assessment of challenges, drawing on Dunn (200x,) as follows-

"In sum, the efforts to integrate gender into environmental management are affected by the lack of legislative framework to promote gender planning, gender stereotypes in the institutional frameworks with males at the leadership core and females in support roles, the lack of engagement of national gender machineries, and the lack of a sound basis for sex-disaggregated data collection and use (p.)."

The limitation in the perspective on gender is further reinforced by the placement of gender equality in the national development planning processes. Gender is often referenced in countries' development plans and addressed fully at a sectoral level which is often under-resourced. In those regard, a review of gender equality plans in Latin America and the Caribbean showed only Haiti and Trinidad providing for equality at the highest political level. A review of Haiti's national development strategy shows that ensuring gender equality is a specific programme (3.9) that is a part of thrust for Social Reconstruction (Government of the Republic of Haiti, 2012, p.235).

iii) Some Aspects of Water Resource and Disaster Risk Management Arrangements in Select Caribbean Countries

Antigua and Barbuda

Water Resource Management

Antigua and Barbuda developed a roadmap for Integrated Water Resource Management (IWRM), a process that culminated in 2011 with the articulation of a vision and policy statement. Per a concept note on water submitted to the Green Climate Fund in April 2018, the draft Integrated Water Management Policy that had been developed in that earlier initiative had not yet been adopted (p.8). The note also asserts the following factors as having impact on the demand for water in the country.

"...destruction and damage to watersheds, an increasing population, frequent occurrences of droughts, salt water intrusion of wells, high energy costs for desalination, poor groundwater yields, and inadequate infrastructure for supply, distribution and storage (p.6).

Antigua's policy response to the water challenges it faces includes stipulating that cisterns or other water harvesting and storage be incorporated in the design and construction of new homes.

The Antigua Public Utilities Authority (APUA), a government statutory agency established by the Public Utilities Act No. 10 of 1973, distributes and provides clean and safe water to paying customers. Potable water is sourced through desalination. Given the high production cost water from the two desalination units is made available for domestic use and for use in the tourism sector only. During drought conditions 95.0 per cent of potable water is provided by

desalination. Furthermore, water is provided to residents on a rotating basis in order to meet all of the populations' needs.

Disaster Risk Management

The overarching legislation governing disaster risk reduction in Antigua and Barbuda is the Disaster Management Act, No. 13 of 2002. Under this Act, a "disaster emergency" means a public emergency declared under section 20 of the Constitution or a state of emergency declared under section 2 of The Emergency Powers (Hurricane, Earthquake, Fire or Flood) Act, Cap. 148 on account of the threat or occurrence of a disaster. The Act establishes a National Disaster and Response Advisory Committee (NDRAC) committee that constitutes representatives from the national parliament, uniformed services, representatives from government ministries, and statutory bodies, and from non-government organisations.

In the context of disaster risk management, Antigua and Barbuda is guided by the provisions of the SDGs² and related international agreements. Furthermore, the comprehensive national disaster risk management mechanism is underpinned by the Caribbean region approach to disasters as is articulated in various forms, including the following-³

- The Caribbean Disaster Emergency Management Agency (CDEMA) Regional Response Mechanism (RRM);
- The Nationally Determined Contributions (NDC); and
- UN Conference on Small Island Developing States (SIDS 2014); and
- Regional Framework for Achieving Development Resilient to Climate Change (2009-2015) and its Implementation Plan (2011-2021).

Gender Visibility and Mainstreaming

There is no specific national framework or mechanism to address gender and disasters, or the differentiated roles and responsibilities of men and women vis-a-vis national institutions during a climate related event.

Belize

Water Resource Management

Belize passed principal legislation <u>National Integrated Water Resources Act, Chapter 222:01,</u> <u>Substantive Laws of Belize in 2010</u>, which came into force in 2011. This act complements and incorporates aspects of pre-existing legislative and institutional arrangement for water abstraction and delivery, which in turn reflects the Country's demographic profile. In the Interamerican Development Bank Policy Note on <u>Water and Sanitation in Belize (2013)</u>, Grau and Rihm point out that a challenge to providing water and sanitation services for the approximately 340,000 residents of Belize posed is that "[o]ver one-third of the population lives in about 190 villages and communities each with less than 4,000 inhabitants. (p.2)" Water abstraction and supply is executed under two separate arrangements. Cities, towns and adjoining villages and communities are serviced by the Belize Water Services Limited, [as empowered under the Water Industry Act, Cap 222]. Communities in more are supplied through more

 $^{^{2}}$ On this the DRR Country Documents specifies that three of the seventeen goals - 13, 14, and 15 of the SDGs relate specifically to actions necessary for DRR.

³ Antigua and Barbuda Country Document for DRR frames its national analysis using these key reference sources.

rudimentary rural water systems managed by village water boards established under the Village Councils Act [Cap 88] (p. 3).

There is less coverage in terms of sewage systems in Belize than there is for piped delivery of potable water. In a <u>Baseline Assessment Study on Wastewater Management Belize</u> (2015) Silva indicates three main clusters of sewerage coverage built around conventional gravity sewers (p. 29). These are in the urban areas of Belize City, the capital city of Belmopan and the town of San Pedro (on Ambergris Caye) which each have sewerage systems that are operated by Belize Water Services Limited. The assessment indicates that just 28 per cent of the population is covered for sewerage services and that, with the exception of some hotels, there are no community based sewerage systems.

Water supplied for domestic or commercial consumption in Belize is differentiated to a large extent by geographic location. In municipal and peri-urban areas, people access water by connecting to the services of the BWS Limited. According to BWS, at March 2019, this coverage accounted for approximately 257,000 consumers, which is just over half of Belize's population.⁴

Disaster Risk Management

Belize's response to disasters is governed by the Disaster Preparedness and Response Act⁵ which is similar to those in force in other Caribbean countries. Under the Act the National Emergency Coordinator directs the work of the National Emergency Management Organisation. Furthermore, it is the Coordinator's duty to facilitate the implementation of the general policy of the Belize Government relating to mitigation of, preparedness for, response to, and recovery from emergencies and disasters in Belize. In doing so, the Director reviews various national programmes and determines the extent to which these contribute to the Disaster Preparedness and Response Policy Review. In this capacity, the Director may also: develop and recommend national policies that foster and promote the mitigation of, preparedness for, response to and recovery from emergencies and disasters for consideration by the Prime Minister; co-operate with non-governmental organizations and other private sector entities to develop and draw up a comprehensive plan; gather timely and authoritative information that can indicate the likelihood of disasters in Belize.

Gender Visibility and Mainstreaming

In the context of water resource management in Belize women tend to play a key role in the management of communal water resources. While women tend to be actively engaged in some community activities more than others, it is not uncommon to find that their engagement and participation on matters related to water in their communities still occurs in an informal basis. This is in part because women's reproductive roles in and around their households limit their official engagement with water management and administration. In contrast, men are more likely to sit on official committees and boards and have formal leadership roles in organisations that have interests in the water sector. The result of these patterns is that at the community level, more men than women are likely to be members of producers' organisations, village councils, water boards, industry associations and cooperatives. In these organisations, men's interests in

⁴ Latest population estimates by the Statistical Institute of Belize, indicate that the national population now stands at

⁵ See, Belize Disaster Preparedness and Response Act Chapter 145, Revised Edition 2011.

water are likely to be linked to their productive and economic activities which mostly stems from their engagement with agriculture. A key measure of visibility and active engagement of women in the water sector is their inclusion and representation in water policy discussions and governance mechanisms. Furthermore, water and the related issues of access and control are highly relevant to men and women owing to the growing impact that climate change and disasters can have in this sector.

Dominica

Dominica. The country's 2014 Disaster Risk Profile points to the incorporation of measures to develop a disaster risk management policies and plans within its Growth and Social Protection Strategy. The document points to natural hazards as a particular concern of the public, private

The disaster response mechanism is described as consisting of an executive committee, an executive advisory council, thirteen task forces and district and community level emergency management committees. As described further, day-to-day risk management operations are anchored by an Office of Disaster Management (ODM), which is charged with pursuing the implementation of a CDM approach. Disaster management partners listed included the Red Cross, Local Government Department, private sector agencies, community-based organizations and individuals with special skills who serve as resource persons. Inclusive of the ODM, these elements all make up a National Emergency Planning Organization, as demonstrated in a schematic at Figure 24-Structure of the NEPO (p.58).

In its post-disaster needs assessment report following the impact of Hurricane Maria in 2017, the Government of the Commonwealth of Dominica indicated a need for strengthening of the legislative framework and regulatory mechanism for disaster risk management in order to maximize on the ongoing investments in reconstruction and recovery (p. 116). A particular issue identified was the need for more research and data gathering to enable effective planning, monitoring and decision making (ibid).

4. Lessons from and Observations on the Gender, Water and Disaster Drawn from Caribbean Experiences

The review of the literature and stakeholder consultations suggest that whilst gender mainstreaming is typically included in discussions for developing gender policies and plans in Caribbean countries, it is less likely to be included in disaster risk management planning, and even less so in water resource management. With the exception of more recent post-hurricane disaster assessments, very few of the documents reviewed included gender analysis. The application of a gender lens to the area of water, and furthermore, with the intent of reducing disaster risk, was often recognized in the course of discussion with practitioners as a new area and valuable area of focus. The topics covered in this section draw heavily on these discussions to identify lessons and new and emerging approaches that can help to operationalize the mainstreaming of gender in water resource management and thereby help to reduce disaster risk.

A. The Role of Water During and After Rapid Onset Hydro-m.eteorological Events

As described by CDEMA's Ronald Jackson (personal communication, Nov. 12, 2019), Caribbean countries' experiences related to water during and immediately after rapid onset climatic events can have two main impacts—one water infrastructure and on households. The analysis below further expands these by separating impacts on select livelihoods activities that are critical to Caribbean economies. This approach is for ease of analysis since it is understood that the ultimate effect is on human lives, whether through immediate or delayed.

i) Impact on Water infrastructure

Impacts on water infrastructure can manifest initially through damage to or destruction of reservoirs or water lines. This disrupts the ability for water abstraction and related processes, such as desalination or reverse osmosis. Furthermore, it renders impossible the capacity to delivery potable water to households. Examples of country experiences of disrupted systems include the British Virgin Islands after Hurricane Irma in 2017 (Irma Diaries), and Saint Lucia after Hurricane Tomas in 2010 (personal communication (Clauzel/Mendoza, 15/11/2019).

ii) Impact on Households

More direct impact on households recorded through hurricanes, tropical storms and depressions result from catastrophic and life-threatening impacts of storm surge such as experienced by survivors of Hurricanes Irma in the British Virgin Islands (2017) and Dorian in the Bahamas (2019). Storm surge attendant to higher intensity (categories 4 and 5) hurricanes can breach or completely one or more floors, or sometimes all, of a building and confront those sheltering within with immediate threat of drowning.

Whilst not as explosive as storm surges, rapidly rising waters and flash floods can also present families with threat to life and damage property and means of livelihoods. These result from long periods of rains, often a result of tropical depressions, tropical storms or slow moving, lower intensity hurricanes (Categories 1 and 2). Notably, vulnerable areas of certain cities and towns across the Caribbean are easily flooded during short periods of intense rainfall. This is the case for Belize City, Belize, Port of Spain, Trinidad and Tobago and Georgetown, Guyana. Where poorly constructed homes exist in areas subject to such flooding, the residents are regularly

displaced, and face health related risks from contact with contaminated water and potential hazardous objects hidden by flood waters.

Further impacts on households arise through WASH issues that affect food and living environment. In addition to disruption in water availability from damaged infrastructure, these impacts can arise from compromise in water quality due to sedimentation and bacterial contamination. Furthermore, even where homes are not destroyed by storm surges, there can be health related issues that arise as a result of dampness and rot to structures that are not quickly repaired.

The Caribbean Public Health Agency assessment of impacts of Hurricanes Irma and Maria as set out in their State of Public Health in 2017 Report highlights the following water related impacts of hurricanes on affected countries across the region that year.

- 1. WASH Issues
 - i) Health risks arising from contact with floodwaters and increase in standing water arising from tidal waves, floods and heavy rains. These include bacterial diseases such as leptospirosis and mosquito borne diseases, such as dengue or malaria.
 - ii) Threats of gastro-intestinal diseases and conditions, such as cholera, dysentery, and gastroenteritis, because of loss of or interruption in water, sanitation and hygiene services that undermined daily functions such as meal preparation (p.).
 - iii) Disruption of health care facility services as a result of damage to water and electricity infrastructure (p. 152).
- 2. Loss of food and medical supplies due to water damage.
- 3. Infrastructure damage due to mudslides from excessive and forceful rains, and build-up and deposit of debris resulting from rivers their banks (p. 158).
- 4. Compromise in effectiveness of shelters during and immediately after the event partly as a result of lack of potable or stored water and toilet facilities (p. 168).
- 5. Loss of water for abstraction and other allocation purposes due to damage to and destruction of watersheds and natural reservoirs.

[Further research, analysis and consultations will be undertaken to identify issues related to pockets of vulnerabilities in low-lying urban areas susceptible to impacts of water related damages from hurricanes, storm surge and flash floods]

iii) Impacts on Livelihoods Activities

Rapid onset hydro-meteorological events also result in water related impacts to economic activities that can have gender implications. Drawing from discussions with a number of regional practitioners, some of these are described below for three industries that are critical to Caribbean economies. These are fisheries and aquaculture, agriculture and tourism (mainly hotels and restaurants).

a) Fisheries and Aquaculture

Wind and storm surges attendant to hurricanes can lead to damages to and losses of fish stock and of infrastructure and equipment, such as boats, cleaning sheds, traps and nets. This affects men more directly in terms of loss of income, and the resources needed for full recovery. Whilst there is an increase in the number of women who are fishers, there is still a higher proportion engaged in the on-shore activities related to fisheries, such as cleaning, marketing and sale of the product, and managing the finances of the business.

There have also been cases where entire fishing communities located in remote, hard to reach areas, experience delays in receiving assistance after a hurricane. One such case occurred in Dominica after Hurricane Maria, in that a fishing community had not been reached until approximately one month after the event (personal communication, Haughton/Murray/Mendoza, Nov. 18, 2019).

A noted gender implication of hurricanes is that the need to resume income generating activities means that men focus on restoring boats and returning to sea, whereas women are invested in the care of the households. This emphasizes the productive-reproductive gender roles, and the trend of women and children being more susceptible to water related challenges in the aftermath of an event.

b) Agriculture

Water related losses to agriculture would arise mainly from flooding of crop. Analysis on this will be expanded in the final draft.

c) Hotels and Restaurants

Most hotels and restaurants across the Caribbean are located in coastal areas or near rivers and are therefore susceptible to storm surges and flooding resulting from hurricanes and other rapid onset hydro-meteorological events. Where piped water service is compromised as a result of such events, and in the event that limited service can be provided, discussions touched on the tendency to give priority to areas where hotels and restaurants are located in order to support economic activities. This suggests two alternative impacts which both affect women more proportionately, since most employed females work in the services sector and there is a high proportion of women-headed households. The first impact would be loss of operations at the hotels and restaurants which in turn could result in a decline in levels of employment. This would be a more likely scenario where water services are not prioritized to business and tourist districts. The second scenario is that households face more proportionate levels of deprivation of piped water services and therefore have to find alternative sources. This is the scenario where the tourist and business districts are prioritized.

d) Informal Economic Activities

[Whilst no data or informal on economic activities that would be impacted by water related impacts of disasters data or information has been identified, the sector is acknowledged to be significant. Further research will be conducted to identify gender patterns in the informal sector, as it relates to water resource management]

iv) Countries' disaster and post disaster experiences in gender differential of water-related disaster impacts.

Drawing from discussions on Caribbean country experiences with representatives of several regional bodies such as CDEMA (Jackson/Mendoza, 12/11/2019) and CRFM (Haughton/Murray/Mendoza, 18/11/2019), water impacts from rapid-onset hydro-meteorological event can be seen as occurring in three main ways. The first is in damage to water delivery infrastructure during the event and subsequent disruption in delivery services. The second is through direct impacts on household posed by storm surges and flooding during or immediately

after an event. This manifests in damage to or loss of structures and property (homes, cars) and in injury to or loss of life of persons who are without adequate shelter or lose shelter during the course of an event.

The poignant accounts of Irma survivors provides insights into the intensity of confronting and evading injury and death from storm surges, and highlights how gender roles manifest during such events. Examples of specific aspects of some of these accounts, along with the roles demonstrated, are set out below.

Surviv	ors
Male	Females
Preparation and Sheltering	
Filling vehicles and moving to high ground	Purchasing groceries and supplies
Boarding up homes prior to storm	Preparing food during approach and initial
	impact
Keeping watch during the approach and initial	
impact	
Survival at Elevation to Disaster	
Using their bodies as physical shields	Shielding and comforting young children
Using their strengths to hold doors closed	Guiding and supporting elderly family
against the force of wind and surge	members
Swimming and supporting and guiding	
family members through water to safety	

Table 5: Manifested Gender Roles of British Virgin Islands 2017 Hurricane Irma Survivors

Derived from readings of survivors' accounts included in The Irma Diaries

In many of the accounts, families were at the point of having breakfast when their homes were breached by the force of wind or storm surge. In many of these cases too, the meal preparation was being undertaken by the mothers, even as other family members would be watching trees being uprooted and debris airborne. This implies attempts at normalcy, at maintaining calm, and perhaps a function of nurturing. Notably too, roles were not strictly aligned to a person's sex. Single parents or single males or females performed the full range of functions. In general, the survivors' accounts provided graphic details of roles delineated along the lines of males as producers and protectors and female as reproducers and nurturers.

The third way in which water impacts from storm rapid-onset hydro-meteorological event is the direct effect on specific industries. For the Caribbean, the most important industries are agriculture, fisheries and aquaculture, and tourism.

The Hurricane Maria Post Disaster Needs Assessment Report prepared by the Government of the Commonwealth of Dominica includes analysis of disaster response roles through a gender lens. The main points of this analysis are set out below, separated into two spheres of activities.

A. Households, Shelters and Community Assets

- 1. Observational Evidence suggests that there is a predominance of women, elderly persons and children in shelters. Site visits indicate that elderly women are doing the majority of care work especially in the shelters (p.11).
- 2. The shelter workers further indicated that they were providing at least 18 hours of unpaid work per week, and most of them were found to be over 65 years of age and were heads of their own households (p.12).
- 3. Elderly men in the shelters were unaccompanied, and in a number of communities many were found to be ailing (p.12).
- 4. Women made up 39% of household heads; many of them were found to have been living in family homes built by their parent and not have had home insurance prior to the hurricane's impact. These women were without building materials, skills or financial resources to undertake rebuilding of their homes (p.12).
- 5. Most primary schools were closed and primary caregivers were mainly women. Many left their children in shelters under communal care, which was usually done by elderly women (p. 12).
- 6. Health centers were impacted, so that primary health care was provided in buildings that were not completely repaired, or in alternate facilities. Women were concerned with getting the word out as to where such services could be accessed.

B. Economic Production

- 1. "Market vendors are mostly women and many have lost their basic tools such as cutting boards, coolers, knifes, etc. (p. 11).
- 2. Women farmers cited lack of feed, shelter and <u>water</u> contributing to daily increases in their losses, exacerbating the initial loss of livestock.

Notably, the report cited a need to target recovery support to families headed by single women and to women farmers.

B. Lessons Learned and Emerging Practices

i) Differential Roles and Disaster Response Implications

- As with other areas of administration, water system governance is dominated by males, and the review of reports and documents for preparation of this report show no specific provision made for ensuring full participation of women in decision-making related to harvesting and provision of water.
- Whilst women are seen as engaging in nurturing and reproductive roles and men largely in productive or protective roles, multiple roles are undertaken by individuals as the circumstances require. This is especially true in female single parent headed households, or in male only households, as seen in accounts from the Irma Diaries.

- Men's roles of protectors and providers often results in them taking risks and suffering physical harm during disasters as a result.
- ii) Gender Impact Considerations of Recovery and Reconstruction Response
- Water scarcity resulting from disruption in piped-water services can result in threats to security as seen in the Saint Lucia experience where two weeks of shortage led to a practice of "stealing water" and where, particularly in rural areas, women and children may need to engage in the collection of water outside the home. In discussion of the Saint Lucia experience, it was asserted that many persons took decisions to remain at home and guard their water supply. This implies a potential for confrontation and escalation, with potential differences in results based on the sex of either homeowners or those who were appropriating water.
- An increasing number of women are either single parents or engaging in economic activities that are male dominated. Challenges faced by these women during normal times are exacerbated during periods of disaster and recovery. At the extreme, this would entail issues arising from lack of access to water for personal hygiene purposes and for productive use, such as in agriculture.
- Female single parents face particular challenges during and after catastrophic events. These include taking on roles that involve heavy lifting and maneuvering of bulky objects and undertaking the reconstruction of homes post event. In the accounts of survivors of storm surge during Hurricane Irma, one may infer that many of the women were unable to swim. This suggests a need for acquisition of that skill to improve chances of survival in such circumstances.
- The practice of rotating access to water to different segments of the society can be influenced by economic considerations that lead to preference of specific industries or commercial sectors. As an example, water may be provided more regularly and during working hours to tourist districts, or to town centers as opposed to sub-urban, peri-urban and rural areas. Such a decision would likely be based on the assumption that use for economic activities that generate monetary returns are more critical to a society than household use, such as cooking. This would have a more than proportionate impact on women. Likewise, such decisions can divert water away from other productive sectors, such as agriculture, aquaculture and fishing. In such cases, the impacts will depend on which sex is most engaged in the sector.

iii)Emerging Approaches

a) PPCR Regional Track Initiative involving St Lucia, Jamaica and Grenada.

One of the first activities of the initiative was a gender screening workshop at which the approach to the taken to ensure gender considerations are factored into design and implementation were discussed. This informed factors now being taken into consideration in the design of rainwater harvesting systems, such as the following-

1. Considering that mostly engineers are involved in the construction of the systems, whilst women are primary users, efforts to ensure women are included in the planning;

- 2. To accommodate the group that would rely most on the system, first identify the demographic: women that would have achieved primary education or less, have young children and live in rural areas. This is informs design considerations such as
 - a. Ensuring valves are not too difficult to open or close;
 - b. Setting downpipes in positions where they can be readily accessed by women;
 - c. Designing user friendly directions on operation of the system. Considerations here could be effective use of diagrams and graphic designs that would enable mounting easily on walls or refrigerators.
- 3. Build in the right provisions depending on whether the system is gravity-fed or operated by pump. This includes ensuring effective access and functionality in the event of loss of power.
- 4. Look at any provision that should be made to ensure that water can be accessed in homes during and after storms and floods so that women and children are less likely to face risks. The risks involved when women with children in their care have to leave their homes to fetch water include security risks to children if they are not left in the care of adults. Where mothers must carry children with them whilst fetching water, the amount that can be carried would be less than if they were able to go alone, and there is potential long term health risk.

b) Caribbean Community Climate Change Center-The Coconut Bay

An example of conflict in water use and adoption of a solution is identified in the case of Coconut Bay Resort in the North of the country. The resort, which includes at least 5 pools and a water-park, now uses harvested rainwater and uses grey water strategically to reduce the level of its demand on the country's water supply. Prior to this initiative, which was implemented through the Caribbean Community Climate Change Center, the resort had been pulling water from the system to the extent that increased water stress in the nearby community. This situation was part of a catch-22, since many of the residents of that very community were employed at the resort.

c) Adoption of Rainwater Harvesting as a Lifestyle Option

Since the post Tomas experience construction or installation of water reservoirs on private premises has been adopted by a higher proportion of the population. Saint Lucia allows withdrawal of the piped water system for storage in cisterns.

Antigua and Barbuda legislated a requirement for construction of cisterns for water harvesting in new homes, and prohibits filling any water storage structure with piped water.

4. Gaps in and Opportunities for Mainstreaming Gender in Water Resource Management for Disaster Risk Reduction

Despite significant effort at gender mainstreaming, especially coming out of government units and entities responsible for, there are a number of disconnects and gaps that must be addressed in to achieve this end. Guided in part by the discussions undertaken so far, some issues to be address in that regard are described below.

A. Gaps Identified

- i) Disconnect Across Programmes
- ii) Gender Blindness in Water Resource and Disaster Risk Management

B. Potential Mainstreaming Measures

i) Policy Level

There is a need to raise the level of priority of gender equality programmes and establish linkages between gender and other portfolios.

- Elevate gender equality measures to national planning level
- Establish mechanisms for joint planning of gender disaster risk reduction

ii) Programme and Intervention Level

- Design Training Programme to Build Capacity in Water Resource Management tailored to gender roles and addressing gender specific needs; include "cross-training" to enable switching of roles.
- Ensure effective application of gender disaggregated data.

There is a need to ensure that the gender disaggregated data that is being produced already be used for programme design and policy decisions that will take account of localized gender differentials, and allow for programmes to be designed to meet all stakeholders' needs.

- *iii) Include gender interventions within programmes first for the most vulnerable*
- *iv)* Research and identify the model client for which an intervention should be included.

iii) Design and deploy and gender awareness programme at community levels

5. Conclusions.

Main conclusions and recommendations will be completed subsequent to the next steps will be included here.

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Annex 1: Gender Development Indicators

					SDO	G 3	SDO	G 4	.3		SDG	4.6		SD Estimat	G 8.5 ed Gross
		GDI	н	DI	Life Exp at Bi	ectancy irth	Expected Scho	d Y ooli	ears of ng	Me S	an Y cho	ears of oling	f	Nationa Per (l Income Capita
					Year	'S	Yea	ars			Yea	:S		Yea	irs
		Value	Female	Male	Female	Male	Female		Male	Fema	le	Male		Female	Male
54	Bahamas				78.8	72.7				11.5	h	10.5	h	22,156	31,397
58	Barbados	1.015	0.805	0.792	78.4	73.6	16.7		13.9	10.6	k	10.4	k	13,509	18,384
69	Trinidad and Tobago	1.013	0.794	0.784	74.4	67.4	14.4	1	12.5 ¹	11.0	h	10.8	h	22,008	35,435
70	Antigua and Barbuda				78.9	74.0	13.9	h	12.6 ^h	••					
72	Saint Kitts and Nevis						14.6		14.3						
75	Grenada				76.3	71.4	17.4		16.3						
97	Jamaica	0.988	0.731	0.739	78.5	73.7	14.4	h	12.8 th	10.0	h	9.5	h	5,898	9,812
	Saint Vincent and the														
99	Grenadines				75.6	71.2	13.4		13.1					7,643	13,306
100	Suriname	0.975	0.705	0.723	74.9	68.4	13.0	m	12.0 1	ⁿ 8.3	h	8.6	h	9,132	17,449
103	Dominica														
106	Belize	0.979	0.699	0.714	73.6	67.9	13.0		12.7	10.5	h	10.4	h	5,689	8,655
125	Guyana	0.948	0.631	0.666	69.2	64.5	11.7		11.0	8.5	k	8.4	k	4,543	10,295
168	Haiti	••			65.8	61.4				4.3	m	6.6	m	1,400	1,937

Table 1: Gender Development Indicators, Select Caribbean Countries, 2017

Annex 2: Setting the Analytical Framework-Select Provisions of International and Regional Agreements and Related Political Declarations

The text is this section represents select provisions for gender, water and disaster risk management within the international agreements to which most of the Caribbean countries are party. As such, the entire agreements are not reproduced here, and those clauses that are quoted do not represent the entirety of provisions for these thematic areas.

The list of provisions starts with those of the sustainable development goals, which for the foundation of global commitments for reducing poverty and vulnerability by significant levels by the year 2030, and to which other thematic agreements and commitments are linked. Provisions of the most relevant of these other agreements follow.

A. The Sustainable Development Goals

	DIRECT (INPUT/OUTPUT/OUTCOME)
SDG Target 1.4:	By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.
Indicator 1.4.1:	Proportion of population living in households with access to basic services.
SDG Target 1.5:	By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.
Indicator 1.5.1:	Number of deaths, missing persons and persons affected by disaster per 100,000 people (persons).
SDG Target 5.4:	Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate.
Indicator 5.4.1:	Proportion of time spent on unpaid domestic and care work, by sex, age and location.
SDG Target 6.1:	By 2030, achieve universal and equitable access to safe and affordable drinking water for all
Indicator 6.1.1:	Proportion of population using safely managed drinking water services.
SDG Target 6.2:	By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
Indicator 6.2.1:	Proportion of population using safely managed sanitation services, including a hand- washing facility with soap and water
SDG Target 6.4:	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
Indicator 6.4.1:	Change in water-use efficiency over time
Indicator 6.4.2:	Level of water stress: freshwater withdrawal as a proportion of available freshwater resources.

SDG Target 6.B:	Support and strengthen the participation of local communities in improving water and sanitation management				
Indicator 6.B.1:	Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management.				
SDG Target 11.5:	By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations				
Indicator 11.5.1:	Number of deaths, missing persons and persons affected by disaster per 100,000 peoplea (persons)				
SDG Target 13.1:	Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.				
Indicator 13.1.3:	Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies				
Indicator 13.1.1:	Number of deaths, missing persons and persons affected by disaster per 100,000 people (persons)				
INDIRECT (PROCESS)					
SDG Target 10.1:	By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average				
Indicator 10.1.1:	Growth rates of household expenditure or income per capita among the bottom 40 per cent of the population and the total population				

SDG Target 13.B:	Promote mechanisms for raising capacity for effective climate change-related planning
0	and management in least developed countries and small island developing States,
	including focusing on women, youth and local and marginalized communities
Indicator 13.B.1:	Number of least developed countries and small island developing States that are
	receiving specialized support, and amount of support, including finance, technology
	and capacity-building, for mechanisms for raising capacities for effective climate
	change-related planning and management, including focusing on women, youth and
	local and marginalized communities