
ADAPTATION: RAPID INSTITUTIONAL ANALYSIS

Based on the National Adaptive Capacities Framework

Version 2.0

July, 2013

Phase II Workbook

Priority Area: Food Production

Trinidad and Tobago

Introduction	3
Priority Area Cover Sheet	5
1. Assessment	6
Worksheet 1a: Vulnerability and Impacts Assessment	7
Worksheet 1b: Inventory of Ongoing Adaptation Efforts	10
2. Prioritization.....	12
Worksheet 2a: Establishment of Priorities	13
Worksheet 2b: Budget Processes.....	17
3. Coordination	20
Worksheet 3A: Coordination at Priority Area level.....	21
4. Information Management	26
Worksheet 4a: Data gathering.....	27
Worksheet 4b: Information Analysis Institutions	29
5. Mainstreaming.....	31
Worksheet 5a: Mainstreaming in the Priority Area	32
Worksheet 5b: Mainstreaming Adaptation in planning.....	34
Appendix B: Interview Organizer	37
Glossary	39

INTRODUCTION

The “Adaptation: Rapid Institutional Analysis” (ARIA) is an indicator-based toolkit designed to help civil society organizations across the world assess national-level institutional quality and governance in climate change adaptation. The ARIA toolkit is based on the National Adaptive Capacities (NAC) Framework, which was developed in 2009 by WRI in collaboration with its international partners. ARIA has adapted the “functions-based” approach of the NAC, which identifies key functions that national institutions will need to perform to build adaptive capacity to climate change. However, whereas the NAC is designed for governments to use to assess their own institutional capacity, ARIA is specifically designed for civil society groups to develop a credible tool to use to advocate for improved adaptation planning and implementation.

ARIA is broken into two phases. Both phases contain the five functions of analysis: Assessment, Prioritization, Coordination, Information Management, and Mainstreaming. In Phase I, the assessment covers the entire national institutional context and selects three main priority areas on which to focus in Phase II. Phase II, which expands the research group to include a larger set of civil society partners, is a more concise and focused institutional assessment of the priority areas selected in Phase I.

The ARIA Phase II workbook is to be completed by the researchers for each priority area selected at the Phase II workshop. The Phase II research should build upon the Phase I research in the following ways: 1) to help inform priority area selection, 2) to develop an in-depth understanding of how issues identified in the Phase I are manifested at the priority area-level in order to enable case study analysis, and 3) to strengthen advocacy efforts by providing evidence of institutional needs for adaptation in a given priority area.

Phase II begins when the lead research organization holds the Phase II workshop to train civil society partners who have agreed to help carry out the Phase II research. In this workshop, the civil society partners are trained in the ARIA method and process as well as given a summary of the Phase I research. The civil society partners often bring their own expertise to research, climate change adaptation, politics or policy, or otherwise that help inform the research for Phase II. The selection of the priority areas is informed by the research from Phase I, but is still a participatory process that involves the partners who will be helping to carry out the research.

*Please note that, due to limitations on time and funding, Phase II was not carried out by the civil society partners present at the workshop as indicated above. Instead, a consultant was hired to undertake the research for Phase II (refer to method below).

METHOD:

The research for Phase II of the ARIA study in Trinidad was undertaken by a consultant and conducted between September 27th to October 23rd 2013. The research period was broken down into four main stages: i) review of the findings of Phase I, ii) background research and desk reviews, iii) interviews with key informants, and iv) completion of the Phase II ARIA workbooks.

The first stage of the research process involved attending a “*Workshop to Review the Findings of Phase I and Initiate Phase II of the ARIA Study*” facilitated by the Caribbean Natural Resources Institute (CANARI) on September 27th, 2013 at CANARI’s office in Laventille, Trinidad. At this workshop the findings of the Phase I research undertaken by the previous consultant for the project were reviewed and the three priority areas for Phase II (tourism, food production and coastal zone) were also selected. Background research was then undertaken by the consultant to become familiar with the use of the workbook, in addition to, sourcing relevant documentation for the priority areas. Following the workshop, interviews were conducted with key informants for each priority area. Interview questions were guided by the information required to complete the “indicators” and “qualities” sections of the workbooks. Interviews were administered in-person and via phone and email using a preselected set of questions based on the aforementioned workbook sections. The final stage of the process entailed the completion of the ARIA Phase II workbooks for each priority area by the consultant, using the information acquired from the desk reviews and interviews.

The workbook is structured as follows:

Indicator: The indicator at the top of the page checks the existence of an institution or process. The box below allows for the researcher to briefly describe it, or explain that it does not exist.

Qualities of the indicator: The qualities of the indicator describe key aspects of the institution that are likely to lead to better climate change adaptation governance. They are grouped under the following categories: **capacity, transparency and participation, accountability and enforcement, and comprehensiveness**. The indicator qualities are where most of the research will take place. After conducting some combination of legal research, overview of publications and reports, and interviews, the research team should be able to provide a detailed analysis of each indicator quality. They can then mark in the table whether the quality is fully present (“Yes”), somewhat present (“Limited”), or not at all (“No”). If the indicator does not exist at all—if there is no institution in charge of coordinating adaptation efforts as an example—then the researchers would simply mark “N/A” and move to the next worksheet.

Qualities: This section provides a more detailed description and background for each quality. Researchers fill in the results of their research below each quality.

Appendices:

- A. Interview Organizer:** Interviews with certain officials may be difficult to arrange and be conducted under time constraints. With that in mind, this appendix is designed to be used by the researchers to match the indicator qualities with the interview targets who may best be able to respond to them. Since it is likely that some officials will be able to answer questions related to multiple indicators, planning ahead can save time and maintain good relationships.

Priority Area: Food Production

Research Conducted by: Melanie Andrews, Consultant

Time Period: September 27th – October 23rd, 2013

1. ASSESSMENT

WORKSHEET 1A: VULNERABILITY AND IMPACTS ASSESSMENT

Indicator	Is there an assessment of climate change vulnerability and impacts for the priority area? This could either be as part of a national-level assessment or separate sectoral assessment. It may come from a source other than a government ministry, however it should still be evaluated using the same Qualities. If no assessment exists, provide an explanation in the Summary box below.
------------------	---

Brief Summary of past or ongoing assessments

An assessment of the “Economic Impact of Climate Change on Agriculture in Trinidad and Tobago” was conducted by the United Nations Economic Commission for Latin America and the Caribbean (UNECLAC) in 2011.

Outside of the ECLAC assessment there appears to be no other known assessments for the sector.

Assessment made by	Government	NGO/Community	Academic Institution	Industry	Other
Name					Economic Commission for Latin America and the Caribbean (ECLAC)

Qualities of the indicator	Yes	Limited	No	n/a
1. The assessment includes both socioeconomic and biophysical aspects of vulnerability and impacts. (Comprehensiveness) <i>*Mainly biophysical and economic factors were considered in detail with some consideration given social aspects.</i>		X		
2. Assessment methodology is made transparent. (Transparency & Participation)		X		
3. Broad set of stakeholders were engaged in assessment development. (Transparency & Participation)		X		

Impacts Assessed:

Biophysical	Economic	Social	Health
Sea level rise	Agricultural and production losses due to rainfall variability and higher temperatures	Loss of livelihoods (farmers, fishers)	Reduced availability of affordable food
Rainfall variability		Food Security	
Temperature increases			
Inundation of agricultural lands			
Decline in fish catch			

References:

United Nations Economic Commission for Latin America and the Caribbean (UNECLAC). 2011. Assessment of the *economic impact of climate change on the agriculture sector in Trinidad and Tobago*. 80 pp. Accessed on: <http://www.caribbeanclimate.bz/closed-projects/eclac-review-of-the-economics-of-climate-change-in-the-caribbean-recc.html>

St.Hill, Anthony; Deputy Director of Research, Crops. Ministry of Food Production. Interviewed by Melanie Andrews. Telephone. October 16, 2013.

Gibson, Norman; Scientific Officer. Caribbean Agricultural Research and Development Institute (CARDI). Interviewed by Melanie Andrews. CARDI Office, UWI St. Augustine Trinidad. October 10, 2013.

United Nations Economic Commission for Latin America and the Caribbean (UNECLAC). *Report of the Meeting of the High-Level Advisory Committee (HLAC) of the Project: A Review of the Economics of Climate Change (RECC) in the Caribbean*. 2010. Port-of-Spain Trinidad and Tobago. 21 pp. Accessed: October 2013. http://www.eclac.org/portofspain/noticias/paginas/4/39474/HLACK_NOV_lcarl284.pdf

Quality 1 Description

This quality asks whether the existing vulnerability and impacts assessment includes socioeconomic and political drivers of vulnerability – issues of wealth and credit access, governance, social stratification, gender impacts, etc., as well as biophysical impacts. Determine whether there are any gaps from research in Phase 1 that need to be addressed for the priority area.

Findings: The assessment mainly emphasises biophysical and economic impacts. It briefly extrapolates the effects that these impacts will have on human health and livelihoods of farmers and fishers.

Quality 2 Description

Assess whether or not the methods for assessing both impacts and vulnerability at the priority area are made transparent – publicly available, appropriately disseminated, and understandable.

Findings: The final report is accessible online on ECLAC's (under Publications tab) and Caribbean Community Climate Change Centre's websites (under Projects tab) and is freely available for download.

The assessment report includes a significant amount of technical language, but for the most part it could be understood by laypersons .

Quality 3 Description

A vulnerability assessment that does not involve representatives of different stakeholder groups may overlook key vulnerabilities and impacts or may fail to consider who or what might be impacted. It may also miss opportunities to gather key information or improve implementation.

Consider key organizations, individuals, and government offices that should be involved in adaptation decisions for the national level. This will differ from country to country. These may include:

- Provincial-level governments
- Representatives of local governments and tribal governments or indigenous organizations
- NGOs
- Key industries
- Members of the scientific community

Findings: The national assessment report was one output from a larger regional project "*A Review of the Economics of Climate Change*". Meeting reports for this project (also available on the 5C's website) indicate that consultation was sought from a variety of stakeholders on the regional and national level. Nationally, the former Ministry of Planning Housing and the Environment, the Ministry of Foreign Affairs and the University of the West Indies St. Augustine were involved in the project.

In reviewing the report, it is evident that information from other government agencies was included; it is however unclear the degree to which these organizations participated in the assessment outside of providing data.

The method does not indicate the extent of involvement, if any, of civil society groups in the undertaking of the assessment.

WORKSHEET 1B: INVENTORY OF ONGOING ADAPTATION EFFORTS

Indicator	If a national inventory of existing and past adaptation efforts exists, is the priority area captured within the inventory? If it is not, provide an explanation in the summary box and move to the next indicator.
------------------	---

Brief Summary

Based on the findings of Phase I, there is currently no national inventory that exists for Trinidad and Tobago (CANARI, 2013). No national inventory exists for the sector.

Inventory created by	Government	NGO/Community	Academic Institution	Industry	Other
Name					

Qualities of the indicator N/A	Yes	Limited	No	n/a
1. Inventory includes initiatives developed by public, private, and civil society sectors. (Comprehensiveness)				X
2. There is a mechanism or process for capturing lessons learned from past initiatives in the priority area. (Comprehensiveness)				X
3. The above information on past initiatives is available, for free, on the internet. (Transparency and Participation)				X

References:

Caribbean Natural Resources Institute (CANARI). 2013. *Adaptation: Rapid Institutional Analysis (ARIA) phase one research report (Draft)*. CANARI Laventille, Trinidad and Tobago. 36 pp.

St.Hill, Anthony; Deputy Director of Research, Crops. Ministry of Food Production. Interviewed by Melanie Andrews. Telephone. October 16, 2013.

Quality 1 Description

If the priority area is marginalized, either due to location, socioeconomic status, or other reason, it may not have been sufficiently included in the vulnerability and impacts assessment.

Findings:

Quality 2 Description

Effective adaptation and preparedness measures will require iteration, learning, and flexibility. If ministry leadership is frequently replaced, or institutional knowledge is otherwise not retained, mistakes may be repeated

Findings:

Quality 3 Description

This information should be made available for the public concerned, including communities, NGOs, private sector, and academia.

Findings:

2. PRIORITIZATION

WORKSHEET 2A: ESTABLISHMENT OF PRIORITIES

Indicator	There is a process for sequencing adaptation activities within the priority area. If there is not, provide an explanation in the summary box and move to the next indicator.
------------------	--

Brief Summary of Process, if it exists

The Ministry of Food Production outlined seven strategic goals in its *2011-2015 Strategic Plan*. None of these goals were specifically related to climate change adaptation. One could infer from this, that climate change adaptation is currently not a strategic focus for the Ministry.

There are however initiatives currently being undertaken by the Ministry (see below) that are *related* to climate change adaptation, although as mentioned before, this is not the expressed purpose. The process for sequencing these initiatives will therefore be described in the qualities section for this indicator.

In the Ministry's Action Plan 2012-2015, the provision of improved drainage and irrigation systems including on farm ponds and the development of rain harvesting systems were among the stated objectives. Related projects currently being implemented include the:

- Water Management and Flood Control Programme – the objective of the Programme is to increase farm output and income through improved water management infrastructure (Ministry of Planning and Sustainable Development, 2013).
- Accelerated Pond Construction Programme - is intended to provide on-farm water storage via the construction of irrigation ponds in the agricultural food baskets of Trinidad; thereby increasing agricultural production particularly in times of water shortages and droughts. The scope of works of the Programme involves the construction of 2,349 ponds during 2011-2015 (Ministry of Planning and Sustainable Development, 2013).
- Water Management and Irrigation Assessment and Development on the Felicity Site, Central Trinidad - the European Union (EU) recently financed this project which was implemented with the Ministry of Food Production and the Water and Sewerage Authority (WASA). The project assessed the options for the irrigated agriculture and drainage in Felicity and developed detailed plans to address the gaps identified. This project considered the impacts of climate change (European Commission, 2013).

Additionally, the National Agricultural and Marketing Development Company (NAMDEVCO), the statutory body responsible for the agricultural marketing function in Trinidad and Tobago, is currently undertaking a project titled “*Demonstrative Projects – Protected Agricultural Production*”. This project involves demonstration in the use of green house and irrigation technologies to increase the supply of fresh agricultural produce. It also involves the establishment of efficient distribution systems in the shortest possible time that will even out the fluctuations in supply and allow for steady and reasonable prices to both producers and consumers. The Project activities include the purchase,

installation and operation of the following improved technology systems (Ministry of Planning and Sustainable Development, 2013):

- Completed Protected Agricultural Structure (Green House)
- Completed Irrigation Systems
- Training and Consultancy

Most of the initiatives in the fishing sub-sector are geared toward the improvement of facilities for fishers. However, the Ministry of Food Production has embarked on one initiative, that again, although not explicitly stated as such, can be considered a climate change adaptation initiative. This project, the *Community Based Aquaculture Programme*, will establish a model aquaculture farm for training, field testing and demonstration purposes at Bamboo Grove.

The Ministry's Strategic Plan was developed in consultation with external and internal stakeholders. (The process is detailed below in the qualities section)

Qualities of the indicator	Yes	Limited	No	n/a
*Please note that the activities being assessed in this section were not specifically classified as climate change adaptation initiatives by the priority area institutions; however they do fit into that category.				
1. Process for sequencing adaptation activities is transparent and publicly available. (Transparency & Participation)	X			
2. Broad set of stakeholders were engaged in sequencing process– including vulnerable and marginalized groups – in order to assure that priorities are informed by a broad range of perspectives. (Transparency & Participation)	X			

References:

Ministry of Food Production of Trinidad and Tobago. *Strategic Plan 2011-2015*. 73 pp. Accessed on: http://www.agriculture.gov.tt/images/policy_documents/MFP_FINAL_DRAFT_Strat_Plan_2013_final.pdf

Ministry of Food Production, Land and Marine Affairs. *Action Plan 2012-2015*. 24 pp. Accessed on: <http://www.agriculture.gov.tt/pdf/National%20Food%20Production%20Action%20Plan%202012-2015.pdf>

Ministry of Planning and Sustainable Development. *Public Sector Investment Programme 2014*. 196 pp. Accessed on:

<http://www.planning.gov.tt/sites/default/files/content/mediacentre/documents/2014-PSIP.pdf>

European Union (EU). 2013. *Water Management and Irrigation Assessment and Development Final Report*. 170 pp. Accessed on:

http://eeas.europa.eu/delegations/trinidad/eprd_final_report_trinidad20130916_01_en.pdf

Quality 1 Description

This indicator assesses there is a process for sequencing adaptation activities at the priority level. If there is, who determines the sequence? How are costs and benefits evaluated? What is the timeframe?

Findings: The methodology for the development of the Ministry of Food Production's Strategic Plan 2011- 2015 states that:

"Since July 2010, MFPLMA has been interacting extensively with its clientele, the key actors along the value chain from 'Farm to Fork'. They include farmers, fishers, input suppliers, marketers, processors/manufacturers, entrepreneurs and related supporting service and stakeholder communities. These discussions culminated in three structured national consultations which identified and validated the following critical areas for intervention: infrastructure; incentives; value chain management and marketing; praedial larceny; commodity development – crops, horticulture, livestock; fisheries management and development; technical support; finance and investment capital; land management (including large farms); and labour.

Information generated from the consultations was analysed and incorporated in formulating the Ministry's One Year Action Plan. This process is intrinsically linked to the preparation of the Strategic Plan.

The in-depth nature of the interactions with the stakeholder communities lent credibility to the further structured conversations relating to the strategic planning exercise since the latter were seen as part of a continuing dialogue."

The Ministry's Strategic Plan is available for free download on the Ministry's official website.

Quality 2 Description

Implementing agencies need to address stakeholder concerns, gather information, and disseminate information in order to plan and successfully implement projects

Findings: :According to the methodology of the Ministry of Food Production's Strategic Plan 2011-2015, in developing its Strategic Plan and Action Plan the Ministry of Food Production consulted with a wide range of internal and external stakeholders. Groups included:

- **Governing bodies and policy makers – Cabinet and Parliament**
- **Productive sector- farmers, fisherfolk, food processors, conservation groups, homeowners, back-yard gardeners**
- **Related Public Sector affiliates e.g. Agricultural Development Bank (ADB), National Agricultural Marketing and Development Corporation (NAMDEVCO),**

Trinidad and Tobago Agri-business Association (TTABA)

- **Ministries e.g. Ministry of Finance, Ministry of Planning, Ministry of Housing, Local Government, Regional Corporations**
- **National agencies e.g. Caribbean Industrial Research Institute (CARIRI), Environmental Management Authority (EMA) Eastern Caribbean Institute of Agriculture and Forestry (ECIAF)**
- **Regional agencies e.g. Caribbean Agricultural Research and Development Institute (CARDI), Inter-American Institute for Cooperation on Agriculture (IICA), Food and Agriculture Organisation of the United Nations (FAO), University of the West Indies (UWI)**

These groups were involved in a stakeholder analysis which is included in the Strategic Plan report. Consultations were used to *inter alia*:

- **Obtain views on improvements required;**
- **Establish goals for improving the Ministry;**
- **Facilitate stakeholder analysis;**
- **Undertake SWOT analysis;**
- **Contribute to a plan of action (inclusive of objectives and strategies) for achieving the agreed goals.**
- **Seek buy-in for the Strategic Plan and the strategic planning exercise;**
- **Explain the link between the earlier consultations re One Year Action Plan and the strategic planning exercise;**
- **Share the draft sector operational goals and MFPLMA organization goals;**
- **Obtain stakeholder ideas and suggestions on MFPLMA actions and institutional improvements to achieve goals.**

WORKSHEET 2B: BUDGET PROCESSES

Indicator	Budgetary processes exist to channel finance to adaptation institutions or initiatives for this priority area. If there are none, provide an explanation in the summary box, indicate “N/A” in the qualities table and move to the next worksheet.
------------------	--

Brief summary of processes, if they exist

Finance is available for projects through national budgetary allocations (Public Sector Investment Programme (PSIP)) and international financing agencies.

It was however stated in the Ministry of Food Production’s Strategic Plan 2012-2015 that the Ministry of Finance and Ministry of Planning and Sustainable Development hold the opinion that there was :

“insufficient justification for the quantum of funds requested (by the MFPLMA) and inadequate information to guide the process of budget adjustments (as well as incomplete project proposals and related documents “

The Ministry of Food Production noted, that as a result:

“The MFPLMA budgets are often the first to be cut resulting in scale-back of essential services and programmes, compromising performance and stakeholder confidence (in the) MFPLMA.”

Budget set by	Government	NGO/Community	Academic Institution	Industry	Other
Institution Name	Ministry of Finance Ministry of Planning and Sustainable Development				European Union

Priority area initiatives in planning documents	Reflected in budget? (y/n)
1. Water Management and Flood Control Programme Water Management and Irrigation Assessment and Development on the Felicity Site, Central Trinidad (National Adaptation Strategy for Sugar Industry) Accelerated Pond Construction Programme	Yes. PSIP 2013-2015 (TT\$554M) European Union Funded Project (€ 190,610.00) PSIP 2011-2015 (TT\$82M)
2. Demonstrative Projects – Protected Agricultural Production	PSIP 2011-2015 (TT\$8.2M)

3. Community Based Aquaculture Programme	PSIP 2011-2015 (\$TT3M)			
Qualities of the indicator	Yes	Limited	No	n/a
1. The agency(ies) most closely tied to the priority area reflect adaptation initiatives in their annual budgets. (Comprehensiveness)		X		
2. Budgetary information for adaptation activities in the priority area is available and accessible. (Transparency and Participation)		X		
3. Budgetary allocations are sufficient to enable adaptation activities to proceed according to plans. (Capacity)		X		

References:

Ministry of Planning and Sustainable Development. *Public Sector Investment Programme 2014*. 196 pp. Accessed on:

<http://www.planning.gov.tt/sites/default/files/content/mediacentre/documents/2014-PSIP.pdf>

European Union (EU). Water Management and Irrigation Assessment and Development. Projects Listing. Accessed on:

http://eeas.europa.eu/delegations/trinidad/projects/list_of_projects/315545_en.htm

Quality 1 Description

Budgetary priorities should reflect priorities for adaptation described in strategic documents. It is critical that budgets reflect the adaptation priorities laid out by key institutions in the priority area. Countries often face two challenges: that of donor-driven “drift” and fragmentation or overlapping of priorities. Such issues may result in a lack of country-level ownership and reduce the chance of successful implementation. For that reason, budgets, as much as possible, should reflect sector-wide priorities already established.

Findings: These climate change adaptation related projects are in line with strategic goals established by the Ministry of Food Production and are included in the Public Sector Investment Programme Budget.

While financed by the European Union, the “Water Management and Irrigation Assessment and Development on the Felicity Site, Central Trinidad” project is in line with priorities established for the sector.

Quality 2 Description

Open budgets are a key component of transparency. With the impacts of climate change burdening the most vulnerable, this level of transparency has important equity impacts

Findings: Budgetary information for the PSIP financed projects are available online through the Ministry of Finance’s website in the “ Three year Public Sector Investment Programme 2013-2015” report. Although a detailed breakdown of the budgetary allocation for each project is not available here.

Information on the European Union funded project is available on the EU’s Delegation to the European Union to the Republic of Trinidad and Tobago projects’ page.

Quality 3 Description

Assess funding levels with the help of Advisory Panel members, if necessary, to determine sufficiency.

Findings: N/A

3. COORDINATION

WORKSHEET 3A: COORDINATION AT PRIORITY AREA LEVEL

Indicator	The priority area is included in national coordination efforts reviewed in Phase I. If not, provide an explanation in the Summary box, mark “N/A” on the qualities table below and move to the next worksheet.)
------------------	---

Brief summary of coordination or lack thereof

The Ministry of Food Production, represented on the National Integrated Coastal Zone Management Steering Committee as the Fisheries Division, has a vested interest in the coastal zone and how it is managed. The Cabinet appointed committee coordinates with other Ministries and the civil society in undertaking its mandate to recommend a national policy framework, strategy and action plan that would build the foundation for a permanent coastal zone management function in the country. One of the thematic areas of the Committee is *Vulnerability Assessments and Climate Change*. So in this regard, yes, the priority area is included in national coordination efforts.

At the regional level, the Ministry of Food Production collaborates with institutions such as the Caribbean Agricultural Development Institute (CARDI) and is currently involved in a regional project “Improving Caribbean Food Security in the context of Climate Change” being implemented by the said Institute . The Caribbean Institute for Meteorology and Hydrology (CIMH), the Trinidad and Tobago Meteorological Services and CARDI also collaborated to launch an agro-meteorological service for farmers in Trinidad and Tobago under CIMH’s regional Caribbean Agro-meteorological Initiative (CAMI) project. The objective of the project, which was launched in 2010, was to increase and sustain agricultural productivity at the farm level in the Caribbean region through improved dissemination and application of weather and climate information using an integrated and coordinated approach (CIMH, 2010). CAMI is funded by the European Union.

The Ministry also recently collaborated with the Water and Sewerage Authority (WASA), a statutory agency attached to the Ministry of Public Utilities, on the European Union financed “Water Management and Irrigation Assessment and Development on the Felicity Site, Central Trinidad” project.

An initiative to improve coordination across all sectors, regarding environmental issues and notably climate change, is also currently being undertaken by the Multilateral Environmental Agreement Unit (MEAU) of the MEWR. According to the Environmental Policy and Planning Division of Trinidad and Tobago (EPPD), in 2012, the MEAU sought to establish MEA Focal Points, nominated from relevant stakeholders in the public sector, NGOs and CBOs, to promote participatory management and decision making on national environmental issues. The key role of the MEA focal point will be to:

- liaise with the Ministry as the National Focal Point in respect of the role and functions of their respective institutions in the context of the national obligations under the various MEA
- provide advice and inputs into strategies and actions to be taken at the national level in the implementation of obligations under the MEA and climate change

- provide inputs, data and information to facilitate reporting requirements of Trinidad and Tobago under the MEA
- provide advice and inputs into work programmes of their respective Ministries/agencies in the context of national obligations under the MEA and climate change
- interface with other relevant stakeholders through relevant networking media to enhance co-operation at various levels

The MEAU hosted a sensitisation and capacity building session in 2012, with a wide cross section of stakeholders representing various sectors, toward the establishment of the MEA Focal Points, however, to date it has not been formally brought into being.

Participating Institution at Priority area level	Government	NGO/Community	Academic Institution	Industry	Other
Institution Name	<p>Ministry of Environment and Water Resources (IMA, EMA)</p> <p>Tobago House of Assembly (THA)</p> <p>Ministry of Planning and Sustainable Development</p> <p>Ministry of Tourism</p> <p>Fisheries Division</p> <p>Town and Country Planning Division</p> <p>Ministry of Planning and</p>	<p>Council of Presidents of the Environment (COPE)</p>			<p>European Union (International)</p> <p>Caribbean Agricultural Research and Development Institute (CARDI)</p>

	Sustainable Development				
	Ministry of Energy				
	Water and Sewerage Authority (WASA)				

Qualities of the indicator	Yes	Limited	No	n/a
1. There is horizontal coordination (across ministries) as necessary, to carry out adaptation initiatives for the priority area. (Capacity)	X			
2. There is vertical coordination (global, national, local) as necessary to carry out adaptation initiatives for the priority area. (Capacity)	X			
3. There is intersectoral coordination (between gov't, civil society, and/or business) as necessary to carry out adaptation initiatives for the priority area. (Capacity)	X			

References:

Inter-American Development Bank (IDB). *Feasibility Studies for a Risk-Resilient Coastal Zone Management Program* (TT-T1038). 56 pp. Accessed on: <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=38011503>

Gibson, Norman; Scientific Officer. Caribbean Agricultural Research and Development Institute (CARDI). Interviewed by Melanie Andrews. CARDI Office, UWI St. Augustine Trinidad. October 10, 2013

Environmental Policy and Planning Department of Trinidad and Tobago (EPPD). 2012. MEA Focal Points. <http://eppd-tt.blogspot.com/p/mea-focal-points.html> (Accessed: May, 2014)

European Union (EU). 2013. *Water Management and Irrigation Assessment and Development Final Report*. 170 pp. Accessed on: http://eas.europa.eu/delegations/trinidad/eprd_final_report_trinidad20130916_01_en.pdf

Juman, Rahanna; Principal Research Officer, Biodiversity and Ecology; Chairman of the ICZM Steering Committee. Institute of Marine Affairs (IMA). Interviewed by Melanie Andrews. Telephone. October 23, 2013.

Quality 1 Description

Different ministries with roles and responsibilities may not be coordinating sufficiently due to a variety of reasons: lack of coordination in institutional culture, poor relationships, competitiveness, etc. These barriers may adversely affect adaptation at the priority area level.

Findings: The Fisheries Division of the Ministry of Food Production is represented on the National Integrated Coastal Zone Management Steering Committee which is comprised of a mix of government ministries along with civil society representation. Three main barriers were identified in the functioning of the ICZM Steering Committee:

- i) **Not all committee members were familiar with coastal zone management and so time had to be allocated to bring those members up to par regarding knowledge of coastal zone issues.**
- ii) **Many of the Committee members are senior officers in their respective agencies and as such have other important roles and responsibilities outside of the Committee. This creates a problem in terms of consistent commitment of time for Committee related duties.**
- iii) **Some of the Committee members also recently retired or resigned from their positions in their respective agencies. Approval from Cabinet is still being sought for replacements.**

It should be noted that while these barriers were identified by the interviewee, they did not appear to seriously impede the work of the Committee.

Quality 2 Description

Multiple funders may fund similar initiative with implementing institutions at different levels. Poor vertical coordination in planning and implementation may lead to waste, inefficiency, and confusion.

Findings:

From the research conducted for this assessment there does not appear to be an issue with regard to duplication of effort and resources, however in the absence of a national/sectoral inventory and information platform this cannot be ascertained.

Climate change adaptation is a major focus for many international and regional institutions. Climate change adaptation with respect to agriculture for example is a key focus for CARDI. As a result CARDI continues to engage the Ministry on issues related to climate change adaptation even though it is not currently a strategic focus for the Ministry. The Ministry benefits from the technical expertise of CARDI.

The European Union also provided financial resources for the Ministry to undertake the “Water Management and Irrigation Assessment and Development on the Felicity Site, Central Trinidad” project

Quality 3 Description

Different sectors may have different technical capacities, social capital, and resources, and therefore may find mutual benefits in coordinating adaptation work.

Findings:

Represented on the ICZM Committee are key government agencies that make policy, manage information, invest in public infrastructure and monitor and assess development in the coastal zone (IDB, 2013). The Committee also has one civil society representative from the Council of Presidents of the Environment (COPE)*.

***COPE is a grouping of autonomous, not-for-profit, non-governmental organisations (NGOs) and community based organisations (CBOs) representing specialist interests in environmental concerns.**

4. INFORMATION MANAGEMENT

WORKSHEET 4A: DATA GATHERING

Indicator	Actors in the priority area have access to adaptation-relevant information identified in Phase I (If not, mark “N/A” in the qualities table and move to next worksheet.)
------------------	--

Summary

The Trinidad and Tobago Meteorological Service (TTMS) makes data available and in a usable format to key stakeholders.

Identify Key Data climate change adaptation-relevant data types for the priority area:

Key data are rainfall, temperature and wind. The formats which are presented are either in tabular format in excel or word, graphical format (Maps) or wind roses which is a map of wind directions and speeds.

Assess Quality—Are they up to date? Relevant? Maintained?

TTMS data is updated on a monthly basis as soon as it is quality controlled. The data is relevant, yes, however relevance would be based on clients/users needs. The data is maintained.

Qualities of the indicator	Yes	Limited	No	n/a
1. The MET Office makes data available and usable to key actors in the priority area. (Transparency and Participation)	X			
2. If data is not made readily available, there is a process for submitting a request for information. (Accountability and Enforcement)	X			

References:

Morrison-Aaron, Arlene; Chief Meteorologist (Ag.). Trinidad and Tobago Meteorological Service (TTMS). Email correspondence with Melanie Andrews. October 16, 2013.

St.Hill, Anthony; Deputy Director of Research, Crops. Ministry of Food Production. Interviewed by Melanie Andrews. Telephone. October 16, 2013.

Quality 1 Description

In addition to managing and maintaining key climate info, the MET is responsible for sharing the information and making it relevant and useful to other ministries, the private sector, and civil society.

Findings: Yes, the Trinidad and Tobago Meteriological Service (TTMS) makes data available and in a usable format to key stakeholders. In particular the TTMS has an agro-meteorological service which it provides to farmers. This service provides farmers with forecasting information, mostly rainfall, for different regions on both islands. This information is accessible directly from the TTMS' website.

Quality 2 Description

If data is not readily available, there should be a mechanism to enable other government personnel or members of the public, to request the information.

Findings: Data is requested through the office of the Director of TTMS either by fax at 669-4009 or email at dirmet@tstt.net.tt. A formal request is made and it usually takes three (3) working days depending on the nature of the request.

WORKSHEET 4B: INFORMATION ANALYSIS INSTITUTIONS

Indicator	Is there a platform for the exchange of climate information that includes the priority area? If not, provide an explanation in the summary box and move to the next worksheet.
------------------	--

Brief summary of platform

There is currently no platform for the exchange of climate information on the national level (CANARI, 2013).

Qualities of the indicator N/A	Yes	Limited	No	n/a
1. According to key stakeholders, is there sufficient awareness of the platform at the priority area level? (Capacity)				X
2. Does the platform make appropriate use of technology or other media to translate data into useful information? (Capacity)				X
3. Is the platform sufficiently staffed and funded? (Capacity)				X

References:

Caribbean Natural Resources Institute (CANARI). 2013. *Adaptation: Rapid Institutional Analysis (ARIA) phase one research report (Draft)*. CANARI Laventille, Trinidad and Tobago. 36 pp.

Tinto, Marcia; Senior Educational Officer. Environmental Management Authority (EMA). Interviewed by Melanie Andrews. Environmental Management Authority, Elizabeth Street, St. Clair Port of Spain. October 9, 2013.

Quality 1 Description

If there are no awareness building activities, including funding to promote and educate on use of the platform, it will likely go unused, and may be used to justify less transparency in the future.

Findings:

Quality 2 Description

The platform should use a range of media to allow the greatest participation that is reasonably possible. These could include web-based platforms, mobile technology, early-alert systems, and community meetings.

Findings:

Quality 3 Description

Without sufficient and reliable resources and adequate staffing, it's unlikely that the information platform would meet its targets.

Findings:

5. MAINSTREAMING

WORKSHEET 5A: MAINSTREAMING IN THE PRIORITY AREA

Indicator	There are processes or procedures for integrating climate change risk and adaptation into projects or sectoral planning (if applicable). If not, provide an explanation in the summary box, mark “N/A” in the qualities table and move to the next worksheet
-----------	--

Brief summary of examples

There is currently no formal process or procedure for integrating climate change risk and adaptation into projects or sectoral planning.

However, the GORTT received financing from the IDB for the institutional strengthening of the Environmental Management Authority of Trinidad and Tobago in order to improve its coordinating role in mainstreaming environmental management and climate change related priorities into all development sectors . The purpose of the program is to contribute to the implementation of the mitigation and the adaptation agendas for the country (IDB,2013).

This includes:

- **Support with technical and legal expertise to integrate environmental aspects related to climate change vulnerability, deforestation, erosion and other impacts and adaptation into national development plans and building codes.**
- **Preparation of a proposal to harmonize the Certificate of Environmental Clearance (CEC) Rules among other supporting regulations to consider Green House Gas (GHG) emissions (This, however, is related to mitigation and not adaptation).**

Qualities of the indicator N/A	Yes	Limited	No	N/A
1. There are guidelines for assessing climate change impact risk in projects or sectoral planning. (Comprehensiveness)				X
2. Relevant ministries, industries, and/or civil society stakeholders’ input was sought during project development. (Transparency and Participation)				X
3. There is an accountability mechanism to ensure that climate change impacts are considered. (Accountability and Enforcement)				X

References:

Tinto, Marcia; Senior Educational Officer. Environmental Management Authority (EMA). Interviewed by Melanie Andrews. Environmental Management Authority, Elizabeth Street, St. Clair Port of Spain. October 9, 2013.

Inter-American Development Bank (IDB). 2013 *Institutional Strengthening of the EMA in Relation to Climate Change* (TT-T1035). Project Details. Accessed on: <http://www.iadb.org/en/projects/project-description-title,1303.html?id=TT-T1035#.UmWLJnBzCFA>

Quality 1 Description

Are considerations of climate change impacts integrated into project development and planning? For instance, are there regulations requiring adaptation measures in project development? If so, are these piecemeal, or is there a comprehensive mainstreaming of climate change adaptation into government projects?

Findings:

Quality 2 Description

Were key stakeholders consulted in the mainstreaming process? Were any key groups left out? Is there evidence that their input informed planning or implementation?

Quality 3 Description

If climate change impacts were not considered, leading to adverse risk for groups, sectors, or individuals, are there grievance mechanisms?

WORKSHEET 5B: MAINSTREAMING ADAPTATION IN PLANNING

Indicator	The institution(s) tasked with prioritization and coordination have identified barriers for adaptation at the priority area level. (If not, explain so below, mark "N/A" in the qualities table and move to the next worksheet)
-----------	---

Brief summary of examples

Evidence of this could not be found for the agriculture sector in Trinidad and Tobago.

Qualities of the indicator N/A	Yes	Limited	No	N/A
1. The responsible institution has examined multiple causes of barriers to adaptation in the priority area (Comprehensiveness)				X
2. The responsible institution has considered a broad range of solutions. Where relevant, the responsible institution has considered addressing problems of infrastructure, natural resources and social safety nets. (Comprehensiveness)				X
3. Authorities make publicly available a description of the process for selecting interventions and justify for its selection. (Transparency and Participation)				X
4. Priority-setting and budgetary process is sufficiently transparent. Broad set of stakeholders were engaged in identification of solutions. (Transparency and Participation)				X

Quality 1

Adaptation is possible where it encounters few barriers. A wide examination of possible causes of barriers will be necessary if policy makers are to encourage adaptation in the policy area.

For a particular sector, population, or place, sources of barriers to be considered include:

- Policy framework;
- Rates, charges, taxes, permits, or tariffs;
- Zoning regulations;
- Insurance premiums;
- Standards;

- Land tenure or other property rights structures;
- Design of social protection programs;
- Lack of awareness or information;
- Lack of resources;
- Sub-national institutional structure;
- Lack of authority at a particular administrative level or body;
- Market factors;
- Legal harmonization between sections of the law or between levels of government;
- Sources of social inequity.

Ideally, the responsible institution has considered a broad range of players including: government agencies; sub-national government bodies; businesses; households; NGOs; and, community-based institutions

Findings:

Quality 2

Different interventions are appropriate to address different barriers to adaptation. While consideration of such barriers is beyond the scope of the ARIA analysis, this indicator asks whether a variety of interventions were considered before a decision.

Where relevant, the responsible institution should consider addressing problems of infrastructure, natural resources and social safety nets.

- Full consideration of infrastructure-based solutions should include:
 - o A variety of options (“soft” options, “hard” options, ecosystem-based solutions, adjustment/removal of existing infrastructure, or any combination of the above)
 - o Cost analysis, including total costs, cost effectiveness, comparisons of long and short-term options, and issues of benefit distribution across sectors, populations, and regions
- Full consideration of ecosystem-based solutions should include:
 - o A variety of options (“soft” options, “hard” options, ecosystem-based solutions, or a combination of the above)
 - o Cost analysis, including total costs, cost effectiveness, comparisons of long and short-term options, and issues of benefit distribution across sectors, populations, and regions
- Full consideration of social safety nets should include:
 - o The full range of policy tools for providing safety nets, including market-based approaches (e.g. insurance) and options that support community-based safety nets.
 - o Cost analysis, including total costs, cost effectiveness, comparisons of long and short-term options, and issues of benefit distribution across sectors, populations, and regions

While few policy processes
Findings:

Quality 3

This indicator measures whether there was transparency in the processes for intervention selection in the priority area and whether reasons were presented for such delegation. Identify whether authorities have publicly justified their selection of interventions in light of other options. Such justification may be in rule-making documents, project planning documents, program objectives, reports by Executive offices, or “findings” sections of relevant laws.
Findings:

Quality 4

<p>This indicator assesses whether the process for development of interventions to support adaptation in the policy area involved a wide range of stakeholders.</p> <p>Members of the public, organizations, other levels of government and businesses have a legitimate interest shaping how adaptation is encouraged through official interventions.</p> <p>As officials considered policy interventions, identify whether the public had an opportunity to comment on decision-making procedures. If they did, did they have a reasonable amount of time to comment, sufficient notice that the opportunity was upcoming, and sufficient information to make an informed contribution?</p> <p>Furthermore, consider whether special effort was made to include members of poor and marginalized communities.</p>
Findings:

APPENDIX B: INTERVIEW ORGANIZER

Interviewee name	Affiliation	Title	Sector	Indicator	Quality(ies)
Mr. Norman Gibson	Caribbean Agricultural Research and Development Institute (CARDI)	Scientific Officer	Agriculture	3B	
Mr. Anthony St. Hill	Ministry of Food Production	Deputy Director of Research, Crops	Agriculture	1A 1B	
				2A 2B	
				3B	
				4A, 4B	
				5A, 5B	
Ms. Marcia Tinto	Environmental Management Authority (EMA)	Senior Educational Officer	Environment	1A, 1B	
				3A	
				4B	
				5A	
Ms. Arlene Aaron-Morrison	Trinidad and Tobago Meteorological Service (TTMS)	Chief Meteorological Officer (Ag.)	Meteorological Service	4A	
Dr. Rahanna Juman	Institute of Marine Affairs	Principal Research	Coastal Zone	1A	
				2B	

	(IMA)	Officer, Biodiversity and Ecology/ Chairman of the ICZM Steering Committee		3B	
--	-------	--	--	----	--

GLOSSARY

Vulnerability and impact assessment: An integrated and multi-sectoral assessment at the national level that helps decision-makers identify adaptation needs, priorities and options.

Exposure: A 2012 IPCC report defines exposure as “the presence of people; livelihoods; environmental services and resources; infrastructure; economic, social or cultural assets in places that could be adversely affected” (IPCC, 2012). As the definition indicates, exposure is determined by location. This could be confined to a floodplain or as widespread as a country. It is possible to be exposed to climate impacts, but not be vulnerable to them (if adaptive capacity is sufficient enough to mitigate risks).

Vulnerability: The IPCC defines vulnerability as the “propensity or predisposition to be adversely affected”. Vulnerability depends on social, economic, cultural, demographic, institutional, governance, geographic, and environmental factors. Vulnerability may be hazard-specific—in other words, a population may be more vulnerable to new disease vectors than to hurricanes, but socioeconomic vulnerabilities such as poverty and poor social network support can aggravate vulnerability no matter the hazard. Key to adaptation and development policy, the IPCC also notes that there is *high agreement* and *robust evidence* that high vulnerability and exposure are mainly an outcome of “skewed development processes, including...environmental mismanagement, demographic changes, rapid and unplanned urbanization, failed governance, and scarcity of livelihood options for the poor” (IPCC, 2012). Ecosystem vulnerabilities, such as ocean acidification or new plant disease vectors, may be linked to socio-economic vulnerabilities.

Prioritization – the process of developing a list of high-priority areas for action on climate change adaptation; some lists may include specific projects while others identify priority sectors or demographics.

Institutional needs – Institutions (in this case, governmental, non-governmental, and private organizations) will need to enhance their ability to address the challenges of adaptation. This includes having a clear (or expanded) mandate and sufficient budgetary and human resources.

Upward accountability – transparency, answerability, and removability of members of an institution to a higher, democratically elected institution.

Downward Accountability – Accountability of institutions to the people that they serve through mechanisms of feedback, complaints, and grievances.

Regulatory impacts analysis – any process for evaluating the human, economic, or environmental impacts of a proposed action and its alternatives. Such an analysis should include the effects of mitigation measures within the analysis.

Rule-making – a process for executive branch interpretation of the law. In many countries, rule-making has procedures for public notice and comment, justification of the rule, consideration of alternatives, and predicted impacts.

No-action alternative – During an impacts analysis, most systems require, the effects of not acting. This is critical for adaptation, as some processes may increase resilience, while others may make communities more vulnerable.

Cumulative impacts scenarios – For purposes of this assessment, cumulative impacts scenarios are a section of impact assessments which outline potential impacts of planned, ongoing, or reasonably foreseeable projects, decisions, and events in the affected area.

Strategic Environmental assessment - SEA refers to a range of “analytical and participatory approaches that aim to integrate environmental considerations into policies, plans and programmes and evaluate the inter linkages with economic and social considerations”