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Groundwater monitoring for mapping aquifers in Belize as a tool for climate change adaptation planning

Stakeholder map



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1 Introduction

1.1 Project summary

In Belize, 56% of the population lives in rural areas where groundwater is a vital source for fresh water, and represents almost 95 per cent of the fresh water supply.

Groundwater is also used as a source of drinking water in the cities of the Corozal, Orange Walk, Cayo and Toledo Districts and in some rural areas of Toledo and Cayo. However, the existing aquifers and their annual recharge rate have not been quantified.

Increase in demand for fresh water resulting from increasing population, greater economic activity and agricultural expansion are threatening the quality and availability of fresh water. Each year during low rainy seasons exists the possibility of droughts due to low recharge of aquifers.

Transboundary aspects and distribution of population are other factors that affect the water sector. For example, central and northern regions (Orange Walk and Corozal) have much larger populations and higher agriculture zones for water intensive crops, but less water resources.

Although there is a need for groundwater information across the country, the priority area includes the New River watershed.

The Nationally Determined Contribution (2022)¹ indicated water resource assessment (especially groundwater) as part of the main actions to be implemented to build resilience.

The results of the prioritization of adaptation technology factsheets for the Water Sector documented in the technologies needs assessment (TNA) for adaptation (2017)² include:

- Drought Monitoring System for Northern Belize with Specific Focus on Groundwater Resources;
- Water Efficient Fixtures and Appliances;
- An Integrated Management Strategy for Water Safety for Eight Rural Water Supply Systems in Belize.

The National Hydrological Service (NHS) is leading a process for building an inventory of existing data on groundwater. The objective is to identify and homogenize information that is currently available but spread among different agencies and institutions, and their various departments.

Requests have been made from the executive level of the Ministry (responsible for the NHS) to other ministries for sharing of relevant groundwater data. However, this is still a work in progress. Additionally, the Ministry of Rural Transformation has indicated that they do not geo-reference their wells.

Following the foreseen adaptation actions in the NDC and the TNA for Adaptation for the water sector, the National Climate Change Office of the Ministry of Sustainable Development, Climate Change, and Disaster

¹ Belize's Nationally Determined Contribution, 2022

<https://unfccc.int/sites/default/files/NDC/2022-06/Belize%20Updated%20NDC.pdf>

² Technology Needs Assessment for Adaptation, 2017

https://unfccc.int/tclear/misc_/StaticFiles/gnwoerk_static/TNA_key_doc/3db7d7bbba4c4deebecbc11fd24fb67d/5331353e87a0488e861d1fe6aca1b747.pdf

Risk Management, and the National Hydrological Service (NHS) is implementing a project to develop a Groundwater Monitoring System for the New River Watershed.

1.2 About this report

The Project requires stakeholder engagement and this report provides guidance to facilitate the participatory processes required to achieve the project's objectives. It takes a forward-looking view of engagement activities to be completed during the assignment and more generally for wider dissemination of the main output – the groundwater monitoring system.

Another purpose of the stakeholder mapping activity is to identify possible and relevant stakeholders for the Stakeholder Working Group (SWG). This group, of up to 10 persons, chaired by the National Hydrological Service, will be agreed and formalised, taking into account gender balance and an adequate representation of vulnerable groups. It is important that the Stakeholder Working Group can provide a technical overview and high-level guidance at each stage of assignment whilst members of the restrictive working group should have the capacity to make sound decisions on some key aspects of the technical assistance. These would be the identification of available information (Output 3), definition of the monitoring area, objectives, needs, the selection of technologies to collect (Output 4), analyse and storage of data on a regular basis, and effective management of the monitoring system to be developed and the training of the official representatives of Belize to the groundwater monitoring system (Output 5).

A more in depth, stakeholder analysis will be conducted for the SWG once members have been selected and presented in a report in which each member will be linked to his/her sector of expertise, gender and include individual contact details.

Once the SWG is created, an inception meeting will be held on-site in Belize with the SWG, the NDE or his representatives, the Team Leader, and international experts and national experts. The objective of this inception meeting is to introduce the team of experts, the goals, milestones, anticipated deliverables, and the role of the stakeholder working group.

2 Principles of stakeholder mapping

Stakeholder analysis is a well-established tool that provides a systematic approach to understanding the interests and influence of identified stakeholders in water security and climate resilience. It supports the achievements of the following outputs: (1) a formal appraisal of roles, responsibilities, and objectives of the identified stakeholders and (2) an understanding of how stakeholders can benefit or obstruct the implementation of a process – in this case the development of a groundwater monitoring system in Belize – and how that same process may benefit stakeholders.

It is important that the emphasis is on stakeholders representing both the 'supply' and 'demand' sides of water service provision, particularly as climate change adaptation measures such as groundwater monitoring often benefits substantially from demand-side measures. The analysis typically involves identifying relevant stakeholders and characterising them with the following attributes using a table:

- Category – for example government, private sector, NGOs, and community groups engaged in water issues.
- Organisation or agency name.
- Mandate and role in the water sector and climate change adaptation – how does the stakeholder relate to the water sector and other stakeholders.

- Role within the adaptation planning process – what level of involvement is anticipated (for example: decision making, championing and leadership within organisations, providing opinions and guidance, receiving, and disseminating information).
- Influence in the implementation of the groundwater monitoring system – how influential the stakeholder is in supporting or blocking the implementation process.
- Interest in the adaptation planning process and associated decision-making tools – how supportive and committed the stakeholder is to the success of the implementation of a groundwater monitoring system.

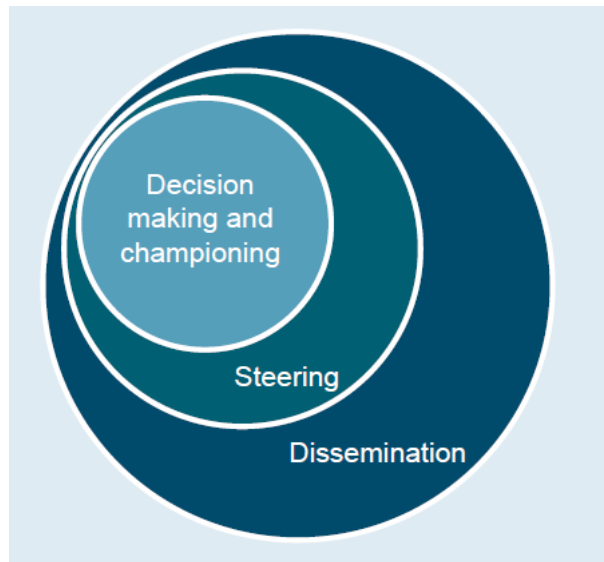
This type of analysis will in turn help mapping stakeholders into an importance/influence grid (as shown in Table 2.1.) and clarify the level of interaction and type of engagement which is more adequate for each stakeholder for the achievement of the project outcomes.

Table 2.1: Stakeholder mapping in the context of Groundwater Monitoring: importance/influence grid

	High influence	Low influence
High importance	Key stakeholder to engage for driving through the development and implementation of the groundwater monitoring system	Key stakeholder who may be under-represented; ensuring participation and protection of interests is important
Low importance	Low importance stakeholders must be managed carefully as their priorities may not align with the implementation of the groundwater monitoring system	Non-key stakeholders who should be involved in wider consultation

Following stakeholder identification and analysis, a good understanding of the stakeholder base will have been achieved. Stakeholder engagement is the final step in the process of operationalising the stakeholder base to fulfil its intended function. The form of engagement is likely to fall into four categories, as follows:

- **Decision making** – A small subset of key stakeholders may be engaged in decision making processes themselves.
- **Championing** – All stakeholders champion the cause to some extent by representing their organisation in the stakeholder base. However, as an explicit role championing involves promoting the Framework application and main activities in related organisations.
- **Steering the process** – Some stakeholders may be consulted for their views in order to maintain the legitimacy of the climate change adaptation process especially the implementation of groundwater monitoring systems and steer the work in useful directions. This advisory role does not carry as much power over the process as a direct role in decision making.



- **Dissemination** – A wider stakeholder base can be consulted in order to gather opinions and disseminate the ongoing work to organisations outside the core stakeholder base.

3 Stakeholder identification and analysis

The tables below present a list of the key stakeholders and their primary functions and roles, divided by target groups.

3.1 Stakeholder map for Belize

Table 3.1: Stakeholder map for Belize

Stakeholder	Primary function / role	Relevance for the water sector	Influence in the development and implementation of the groundwater monitoring system	Interest in the development and implementation of the groundwater monitoring system
National Hydrological Service (<i>Ministry of Natural Resources, Petroleum & Mining</i>)	The National Hydrological Service is responsible for the sustainable management of water resources to meet the economic, environmental, and social needs of Belize.	<p>Decision making</p> <ul style="list-style-type: none"> Responsible for well drilling applications, collection of data on the quantity, quality, and variability of Belize's natural water resources. Advises government on watershed management, environmental concerns, and disasters such as: Floods, Droughts, Water pollution. Coordinates the Development of the National Water Master Plan, National Water Safety Plan and Vulnerability profile. Coordinates the Development of the National Water Safety Plan. 	High	High

Stakeholder	Primary function / role	Relevance for the water sector	Influence in the development and implementation of the groundwater monitoring system	Interest in the development and implementation of the groundwater monitoring system
Mining Unit (<i>Ministry of Natural Resources, Petroleum & Mining</i>)	The Mining Unit facilitates the exploration of minerals via Prospecting Licenses, Exploration Licenses, Mining Licenses and Quarry Permits. The Unit also Enforces compliance with the conditions of Mineral Rights.	Championing <ul style="list-style-type: none"> • Possess groundwater data collected from boreholes. 	High	High
National Climate Change Office (<i>Ministry of Sustainable Development, Climate Change & Disaster Risk Management</i>)	The National Climate Change Office is responsible for the coordination of Belize's national climate Change policies and action such as the Nationally Determined Contributions and the National Climate Change Policy for Belize.	Decision making <ul style="list-style-type: none"> • The water sector is likely to be highly affected by climate change, and therefore a priority for climate change adaptation action. 	High	High
Department of the Environment (<i>Ministry of Sustainable Development, Climate Change & Disaster Risk Management</i>)	The Department of the Environment enforces the Environmental Protection Act which grants regulatory and enforcement authority for the prevention and control of environmental pollution, conservation, and management of natural resources.	Decision Making <ul style="list-style-type: none"> • Establishes and enforces standards for control of pollution in water sources. • Regulates and monitors water quality. • Serves as the Commission and chair of the New River Task Force. 	High	High

Stakeholder	Primary function / role	Relevance for the water sector	Influence in the development and implementation of the groundwater monitoring system	Interest in the development and implementation of the groundwater monitoring system
Forest Department (<i>Ministry of Sustainable Development, Climate Change & Disaster Risk Management</i>)	The Forest Department oversees the sustainable management of Belize's Forest resources including wild species.	Championing <ul style="list-style-type: none"> The protection, improvement and rehabilitation of watersheds is integrated into the sustainable management of forests which falls under the responsibility of the Forest Department. 	Low	High
National Meteorological Service (<i>Ministry of Sustainable Development, Climate Change & Disaster Risk Management</i>)	The National Meteorological Service provides meteorological and climate-based products and services to the Belizean public. The Unit also serves as the National Focal Point for Belize on the Intergovernmental Panel on Climate Change.	Championing <ul style="list-style-type: none"> Collects and monitors rainfall data; Issues public advisories on flooding. Provides specialised weather forecasts for the agriculture, forestry, marine, military, and tourism sectors. 	High	Low
National Biodiversity Office (<i>Ministry of Sustainable Development, Climate Change & Disaster Risk Management</i>)	The National Biodiversity Office coordinates the implementation of Belize National Biodiversity Strategy and Action plan.	Dissemination <ul style="list-style-type: none"> Receives and disseminates information and biodiversity related data. 	Low	High

Stakeholder	Primary function / role	Relevance for the water sector	Influence in the development and implementation of the groundwater monitoring system	Interest in the development and implementation of the groundwater monitoring system
<p>Department of Rural Transformation (<i>Ministry of Rural Transformation, Community Development, Labour and Local Government</i>)</p>	<p>The Department of Rural Transformation's portfolio includes rural development and rural water supply. The Department ensures a sustained strategy to improve the quality of life of the low-income rural population by guaranteeing that the rural communities have access to safe and healthy water sources. The Department empowers rural communities in addressing development needs, strengthening of local governance, and the adoption of sustainable development practices.</p>	<p>Decision Making</p> <ul style="list-style-type: none"> Assesses the operations and maintenance of all rural water systems including infrastructure, water collection and distribution, revenue collections and reporting of water boards, Establishes records and keep a log of all wells, water, wastewater, and electrical systems. 	<p>High</p>	<p>High</p>
<p>Ministry of Agriculture, Food Security, and Enterprise-Extension service (MAFS&E)</p>	<p>The MAFS&E provides an environment that is conducive to increase in production and promotes investment in the sector. It also encourages private sector involvement in agribusiness enterprises.</p>	<p>Decision Making</p> <ul style="list-style-type: none"> Agricultural water uses and agricultural runoff may have an impact on water quality. The Ministry's Climate Change Unit has undertaken some work on Climate Smart Agriculture. This has relevance for water abstraction. The Irrigation and Drainage Unit is responsible for irrigation systems, may have information on water abstraction locations / volumes. 	<p>High</p>	<p>High</p>

Stakeholder	Primary function / role	Relevance for the water sector	Influence in the development and implementation of the groundwater monitoring system	Interest in the development and implementation of the groundwater monitoring system
Fisheries Department (Ministry of Blue Economy and Civil Aviation)	The Fisheries Department regulates/administers the Fisheries Resource Act and ensures the protection, maintenance, and rehabilitation of marine and freshwater systems via integrated management tools which safeguard the integrity of marine and freshwater species and ecosystems.	Championing <ul style="list-style-type: none"> • Possess data on species and ecosystems. • Regulates extractive uses within Freshwater systems. 	Low	High
Ministry of Health and Wellness	The Ministry of Health and Wellness administer health service for the health and wellbeing of all Belizeans.	Championing <ul style="list-style-type: none"> • The Ministry supports public health system by conducting tests and monitoring the spread of vector-borne illnesses. 	Low	High
Belize Water Services Limited	The Belize Water Services Limited delivers cost-effective and sustainable supply of high-quality water and wastewater services to improve the lives of consumers. The Water Service is regulated by the Public Utilities Commission (PUC).	Decision Making <ul style="list-style-type: none"> • Utilizes watersheds such as the New River and rivers to safeguard water supply for towns and communities in Belize. 	High	High

Stakeholder	Primary function / role	Relevance for the water sector	Influence in the development and implementation of the groundwater monitoring system	Interest in the development and implementation of the groundwater monitoring system
<p>Water Boards³</p> <ul style="list-style-type: none"> • To be Confirmed-Department of Rural Development • Backlanding • Indian Church • Carmelita • Chan Pine Ridge • Fire burn • Guinea Grass • San Carlos • San Jose Palmar • San Estevan • Tower Hill Trial Farm. 	<p>Water Boards manage the rudimentary water systems in the rural areas. These Boards carry out various functions related to the supply of water. Water Boards are also responsible for the maintenance of the water system to ensure the uninterrupted supply of water within the village. They also regulate pumping hours, collection of fees and undertake expansion of water systems.</p>	<p>Decision Making</p> <ul style="list-style-type: none"> • Possess the ability to provide gender disaggregated data on water use and demand. • Manages the day-to-day operations of the rural water systems in village. 	<p>High</p>	<p>High</p>

³ Appendix 1 highlights communities located along the new river and helps to demonstrate the scope of rural water systems within this area.

<p>Communities⁴:</p> <p>Orange Walk</p> <ul style="list-style-type: none"> • Back landing • Blue Creek • Indian Church • Carmelita • Chan Pine Ridge • Fire burn • Guinea Grass San Carlos Jose Palmar • Orange Walk • Shipyard San • San Jose Palmar • San Estevan • Tower Hill • Trial Farm <p>Corozal</p> <ul style="list-style-type: none"> • Aventura • Caledonia • Benque Viejo • Estrella • Libertad • Little Belize • Pueblo Nuevo • San Joaquin • San Francisco • San Maximo • Santa Cruz. 	<p>The communities within the project area make direct use of water resources. These communities are also vulnerable to decision related to groundwater management.</p>	<p>Dissemination</p> <ul style="list-style-type: none"> • Makes use and demands water resources. Influenced by and influences water availability. • A wider stakeholder base of social service institutions- schools, hospitals, clinics, and other civil society groups who have demands for water are located within communities. • Can provide opinions and disseminate information on the ongoing work. 	<p>Low</p>	<p>High</p>
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⁴ Appendix 1- Map of the New River in relations to communities.

Stakeholder	Primary function / role	Relevance for the water sector	Influence in the development and implementation of the groundwater monitoring system	Interest in the development and implementation of the groundwater monitoring system
Women MAMAS GROUP- Orange Walk	MAMAS Group is committed at empowering women and children to be self-sufficient in their daily lives.	Dissemination <ul style="list-style-type: none"> Aid in the dissemination of information within households and community. Makes use of and demands water resources. Influenced by and influences water availability. 	Low	High
Youth Groups <ul style="list-style-type: none"> Escuela Secundaria Técnica México Environmental Club Eco Hearts Environmental Youth Club- Orange Walk. 	Youths advocate for change and protection of civic and environmental rights.	Dissemination <ul style="list-style-type: none"> Aid in the dissemination of information within households and community. Implement environmental projects and initiatives within communities. Advocates of sustainable use of resources to safeguard and reduce vulnerability of future generations. 	Low	Low
District Association of Village Councils (North)	The District Association of Village Council ensure the good governance and improvement of villages. The council also ensure that public properties are maintained.	Championing <ul style="list-style-type: none"> Has insights into the work of water boards. Makes use and demand of water resources. Promotes established policies and regulations to safeguard water resources. 	Low	High

Stakeholder	Primary function / role	Relevance for the water sector	Influence in the development and implementation of the groundwater monitoring system	Interest in the development and implementation of the groundwater monitoring system
Non-Governmental Organizations- <ul style="list-style-type: none"> Association of Protected Areas Management Organization Corozal Sustainable Future Initiative Friends of the New River Program For Belize The Nature Conservancy. 	Non-Governmental Organizations promote good governance and alignment of national and organizational agendas with conservation targets for Belize. They also partner with governments, communities, businesses and international financial institutions to fulfil conservation targets.	Championing <ul style="list-style-type: none"> May implement project which promote healthy freshwater systems and conservation of wildlife. 	Low	High
Belize Livestock Producers Association	The Belize Livestock Producers Association manages the local livestock industry, and by extension works closely with the stakeholders of the industry. The Association also provides technical and other information of assistance to members.	Championing <ul style="list-style-type: none"> Source of information on use and demand of water resources within the industry. Affected by adverse weather conditions such as droughts and flooding. 	Low	High
Belize Poultry Association <ul style="list-style-type: none"> Blue Creek Shipyards Little Belize. 	The Belize Poultry Association directs and guides the poultry industry in Belize to play a significant role in Belize's food security, nutrition, and overall development by providing technical and management expertise and by forging strong partnerships.	Championing <ul style="list-style-type: none"> Makes demands and use of water resources. Influenced by and influences water availability. 	Low	High

Stakeholder	Primary function / role	Relevance for the water sector	Influence in the development and implementation of the groundwater monitoring system	Interest in the development and implementation of the groundwater monitoring system
Public Utilities Commission (PUC)	The PUC is the authority of the Water Industry Act, the Public Utilities Act and associated Regulations. It is also the economic regulator for Belize's water industry. PUC Seeks to ensure that the utilities company continue to provide services to customers.	Decision Making <ul style="list-style-type: none"> Monitors the sector performance and conduct periodic tariff reviews, ensuring that the water utilities deliver affordable services while earning a reasonable return on their investments. 	Low	High
Sugar Cane Farmers Association- <ul style="list-style-type: none"> Belize Sugar Cane farmers Association Corozal Sugar cane farmers Association Northern Sugar cane farmers Association Progressive Sugar cane farmers Association. 	The Belize Sugar Cane Farmers Association works in union to improve the quality, quantity and efficiency of sugar cane production, processing and marketing.	Championing <ul style="list-style-type: none"> Farmers Associations. 	Low	High

Stakeholder	Primary function / role	Relevance for the water sector	Influence in the development and implementation of the groundwater monitoring system	Interest in the development and implementation of the groundwater monitoring system
Sugar Industry Research and Development Institute (SIRDI)	The Sugar Industry Research and Development Institutes conducts research, develops, and adopts technological innovations and production options for the benefit of the industry. The Institutes also establishes norms and standards and provide technical services to the Sugarcane Production Committee (SCPC) for determining sugarcane quality.	Dissemination <ul style="list-style-type: none"> • Receives and disseminates information. • Offers programs oriented to address scientific, technological, and environmental needs of the sector. • Currently manages groundwater data. 	Low	High
Private sector- <ul style="list-style-type: none"> • Belize Sugarcane Industry-ASR Group • Shipyard Farmers (Livestock, Poultry, Vegetables) • Blue Creek Farmers • Little Belize Farmers. 	The Private Sector represents private sector companies or groups with business enterprises directly or indirectly dependent on the availability of adequate water resources.	Steering the Process <ul style="list-style-type: none"> • Possess data which can contribute to knowledge on water use and demand within industries. • Has the ability to provide information on water resource use and demand by both male and female farmers. • Possess water quality information. 	Low	High
Academia <ul style="list-style-type: none"> • Galen University • University of Belize • Muffles College. 	Academic Institutions provide support in research and knowledge development. Academic Institutions also aid in monitoring programs across sectors.	Dissemination <ul style="list-style-type: none"> • Receives and disseminates information. • Offers programmes oriented to address scientific, technological, and environmental needs of the country. 	Low	Low

Stakeholder	Primary function / role	Relevance for the water sector	Influence in the development and implementation of the groundwater monitoring system	Interest in the development and implementation of the groundwater monitoring system
Protected Areas Conservation Trust	The Protected Areas Conservation Trust provides investments to enhance Belize's socio-ecological systems through strategic financing and partnership.	Championing <ul style="list-style-type: none"> • Makes Investment in conservation and environmental Projects. • Nationally Accredited Entity of the GCF. 	Low	High
External donors⁵ <ul style="list-style-type: none"> • Caribbean Community Climate Change Centre • Food and Agriculture Organization • Inter-American Development Bank • United Nations Development Programme • UN Habitat. 	External donors invest in national development; supporting effective mitigation and adaptation solutions via projects to combat climate change impacts.	Championing <ul style="list-style-type: none"> • Makes investment in conservation and environmental projects. • Aligns agendas with national priorities. • Receives and disseminates information. 	Low	High

⁵ Other donors exist however based on project scope and impact on water monitoring the above mentioned were selected as relevant.

Stakeholder	Primary function / role	Relevance for the water sector	Influence in the development and implementation of the groundwater monitoring system	Interest in the development and implementation of the groundwater monitoring system
<p>Ministry of Economic Development (MED)</p>	<p>The vision of the Ministry of Economic Development is to be an integral partner in the economic and social development of Belize by providing efficient and timely advice on and coordinating development initiatives in order to improve the general well being of all Belizeans.</p> <p>The Ministry's mission is to assume a leadership role in formulating and recommending national development policies, strategies and programmes to promote macroeconomic stability, sustainable socioeconomic development and the reduction of poverty.</p>	<p>Steering the process <i>MED has oversight of public investment (both domestic and externally financed) and may provide guidance on financing and funding for the monitoring system.</i> <i>MED responsibilities include:</i></p> <ul style="list-style-type: none"> • <i>Capital budget preparation and management;</i> • <i>International Financial Institutions and Multilateral Development Banks (National Designated Authority for the Green Climate Fund);</i> • <i>National Authorizing Office for EU funds (NAO);</i> • <i>Economic Development Planning;</i> • <i>Public Sector Investment Programme (PSIP);</i> • <i>Statutory Boards:</i> <ul style="list-style-type: none"> ○ <i>Social Investment Fund (SIF),</i> ○ <i>Statistical Institute of Belize (SIB).</i> 	<p>High</p>	<p>Medium-Low</p>

Based on the stakeholder map outlined above and preliminary discussions with the National Hydrological Service and the National Climate Change Office, the recommended stakeholder working group is highlighted below (Table 3.2.).

Table 3.2: Recommended stakeholder working group

Stakeholder/Organisation/Agency	Contact Information
National Climate Change Office- Ministry of Sustainable Development, Climate Change & Disaster Risk Management	Dr Lennox Gladden, Chief Climate Change Officer and UNFCCC; Ms. Gina Young, NDC Update and Implementation Facilitator.
National Hydrological Service- Ministry of Natural Resources, Petroleum & Mining	Mrs. Tennielle Hendy, Principal Hydrologist.
Department of the Environment- Ministry of Sustainable Development, Climate Change & Disaster Risk Management	Mr. Anthony Mai- Chief Environmental Officer.
Ministry of Agriculture, Food Security, and Enterprise- Extension service	Dr. Victoriano Pascual- Chief Agriculture Officer.
Department of Rural Transformation- Ministry of Rural Transformation, Community Development, Labour and Local Government	Ms. Elsa Cardinez, Coordinator of Rural Transformation.
Forest Department- Ministry of Sustainable Development, Climate Change & Disaster Risk Management	Mr. Wilber Sabido, Chief Forest Officer.
Ministry of Economic Development	Mr. Leroy Martinez, Economist.
Belize Water Services Limited	Mr. Alvan Haynes, Chief Executive Officer.
Belize Sugarcane Industry-ASR Group	Mrs. Olivia Carballo-Aviles, BSI ASR Cane Farmers' Relations Manager.
MAMAS Group Orange Walk	Ms. Ophelia Novelo, Coordinator.

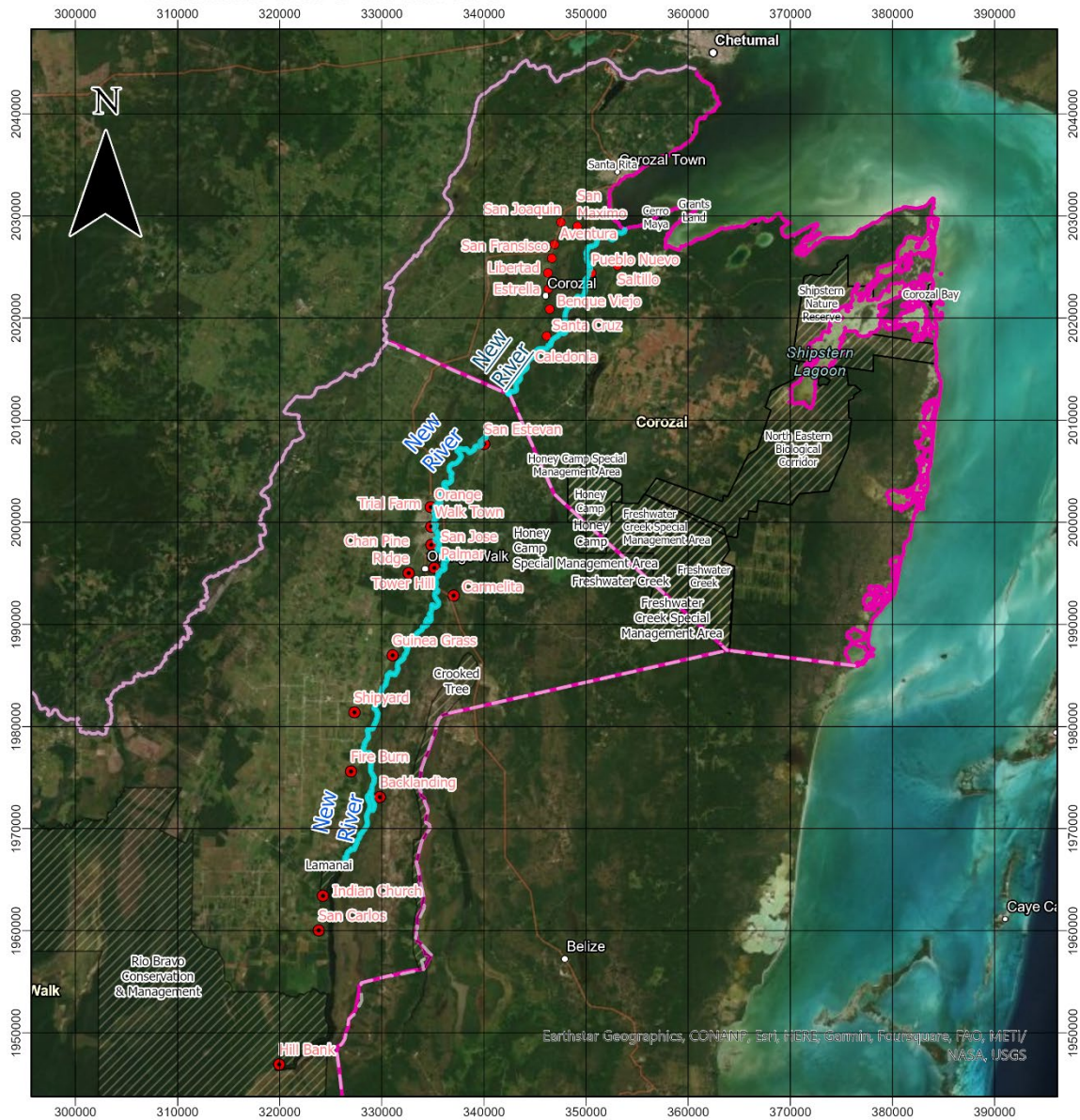
As noted in the technical proposal and kick-off meeting, it will be beneficial to collaborate within the region to share experiences of groundwater monitoring in the Caribbean region or other countries with similar monitoring needs. The relevant stakeholders could support by sharing successful projects and lessons learned that will increase the potential for future collaboration.

Appendix

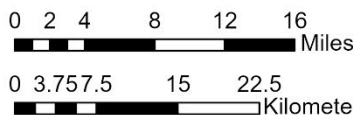
A Map of the New River in relations to communities

New River Settlements

Settlements close to the New River



Spatial Reference
Name: NAD 1927 UTM Zone 16N
Datum: North American 1927
Projection: Transverse Mercator
Central Meridian: -87.0000
False Easting: 500,000.0000
False Northing: 0.0000
Map Units: Meter



Scale: 1:500,000

- Legend**
- Corozal District
 - Corozal_PA
 - Orange walk PA
 - Orange Walk District
 - Corozal New River Settlements
 - Orange Walk New River Settlements

Source: Ministry of Sustainable Development, Climate Change & Disaster Risk Management, (2022), New River Settlements, Scale: 1:500,000.



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