

COMMUNITY CONSULTATION - MAY PEN

ON THE

WATERSHEDS POLICY FOR JAMAICA

7 JUNE 2023



Consultation Location: Glenmuir High School, May Pen
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Acronyms

CBD	Convention on Biological Diversity
GCCA+	Global Climate Change Alliance Plus
GEF	Global Environment Fund
GoJ	Government of Jamaica
ICM	Integrated Coastal Area Management
IDB	International Development Bank
IWRM	Integrated Water Resources Management
JAREEACH II	Jamaica Rural Economy and Ecosystems Adaptation to Climate Change II
JCF	Jamaica Constabulary Force
JHTA	Jamaica Hotel and Tourist Association
JSRC	Jamaica Scientific Research Council
MEGJC	Ministry of Economic Growth and Job Creation
MC	Municipal Corporation
NCTF	National Conservation Trust Fund
NEPA	National Environment and Planning Agency
NRCA	Natural Resources Conservation Authority
NLBI	Non-legally Binding Instrument on all Types of Forests
NWC	National Water Commission
PIOJ	Planning Institute of Jamaica
RADA	Rural Agricultural Development Authority
SDC	Social Development Commission
SRC	Scientific Research Council
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	UN Framework Convention on Climate Change
WMU	Watershed Management Unit
WPA	Watershed Protection Act
WRA	Water Resources Authority
WRM	Water Resources Management

Background

The Government of Jamaica (GoJ) is seeking to articulate a comprehensive policy on watershed management given the degradation of the island's watersheds, challenges in the management of watersheds, involvement of certain entities in various areas, outdated laws and policies and threats such as climate change.

The term 'watershed' is defined as the land area in which rain falls and from which water drains into a stream or river. This area covers not only the mountains and hill slopes but also forests, farms, industries, and housing developments located on them. Jamaica is divided into 10 hydrologic basins and 26 watershed management units (WMUs) each identified by the name of the major river which runs through it.

While the protection of watersheds, areas adjoining watersheds and the promotion of the conservation of water resources were assigned to a specific entity with the enactment of the Watersheds Protection Act (WPA), 1963, the range of issues to be addressed is wide and involves several different agencies. Since the enactment of the WPA, there have been many changes among the institutions involved, new policies and legislation have been put in place, new technology has become available, several projects implemented, and new global commitments made. It is within this context that this Policy seeks to address the institutional arrangements for effective watershed arrangement.

According to the State of Environment Report 2017, on the status of the country's watersheds, "...all 26 WMUs have been assessed as degraded to some extent... More than a third of the total watershed area in Jamaica was classified as either degraded (22%), or severely degraded (14%). These are generally located on the eastern side of the island. The most severely degraded WMUs included Rio Minho, Wag Water, Hope River and Yallahs".

This Policy sets out the goals and principles that should guide decision making by public sector agencies that have mandates concerning watershed management and includes provisions related to the involvement of communities and other stakeholders in watershed protection (*taken from Executive Summary, Watershed Policy of Jamaica - Green Paper*).

In order to ensure the fulsome input of stakeholders on the draft Policy six consultations were scheduled to discuss the provisions and recommendations detailed in the document. Stakeholder groups with whom consultations were held were public and private sector representatives, civil society, members of the watershed community in Clarendon, officers of municipal corporations islandwide, and the general public. The latter by way of a virtual town hall meeting. Prior to the consultations, copies of the document were sent to parish libraries across the island as well as offices of municipal corporations. Electronic copies were available on the websites of the National Environment and Planning Agency (NEPA), the Forestry Department, the Water Resources Authority (WRA) and the Ministry of Economic Growth and Job Creation (MEGJC).

Watershed Policy: In-Person Consultation, May Pen 7 June 2023

Opening Remarks: Gillian Guthrie, Chief Technical Director, Policy, Planning & Evaluation, Ministry of Economic Growth and Job Creation (MEGJC)

Ms Guthrie welcomed those present, particularly the Glenmuir students who were able to join the meeting. She explained that the agenda included presentations by the Water Resources Authority (WRA), the Forestry Department and the National Environment and Planning Agency (NEPA) as well as an overview of the draft Watersheds Policy by MEGJC. Following the presentations, there would be the opportunity for members of the audience to provide feedback on the Policy so the team at the Ministry could use the information provided to finetune the Policy to ensure that it addressed all issues pertaining to watersheds effectively.

She advised that the programme would begin with a keynote address from Senator the Honourable Matthew Samuda, Minister without Portfolio, Ministry of Economic Growth and Job Creation (MEGJC). It would be a virtual presentation.

Keynote Address: Senator the Honourable Matthew Samuda, Minister without Portfolio, MEGJC

Senator Samuda welcomed all participants attending the community consultation and apologised for not being able to be present for the duration of the meeting. He expressed thanks to the members Environment and Risk Management Branch, led by Chief Technical Director Gillian Guthrie, for their work on the draft policy and in convening the series of consultations.

Senator Samuda advised participants that the Watershed Policy had been approved by Cabinet as a Green paper and was tabled in the House of Representatives on March 2023. He said that the document set out principles which would guide decision-making by public-sector agencies regarding the watershed management mandates. It also outlined provisions for engaging communities and other stakeholders in watershed protection. Policies and goals detailed in the document included enhanced watershed management strategies. It would ensure that Jamaicans appreciated the importance of watersheds and were active participants in their conservation. He said that watersheds were key sources of clean water for economic sectors such as agriculture, tourism and industry. Additionally, watersheds were habitats for several species of flora and fauna. However, unchecked human activity has disrupted the delicate balance of those ecosystems and has led to degradation of water resources.

He shared that the 2019 National Water Sector Policy and Implementation Plan had recognised the critical relationship between adequate water supply and the health of the island's watersheds. It was imperative, he said, to protect the integrity of the island's watersheds so they could provide the functions for the protection of lives and livelihoods. He emphasized that water was a finite resource, essential for

supporting life, sustaining livelihoods and driving economic growth, but, in many cases, was not treated as such and thus not conserved or used efficiently. He noted that rationalisation of the country's legislative and institutional framework was required to ensure coherence, efficiency and effectiveness in watershed and water resources management.

Senator Samuda pointed to the need for the participation of all stakeholders, including the private sector, civil society and communities, in the efforts that were crucial in fostering inclusivity, ownership and sustainability of water supply sources, including watersheds. He said that community engagement and involvement were vital in watershed management. In addition to legislative and institutional measures, watershed management needed to focus on building capacity and knowledge for effective water resource management. He observed that collaborative efforts among government agencies, public and private sector, academia and research institutions and other stakeholders could help to develop innovative and evidence-based solutions to address the challenges faced.

Senator Samuda cited regular monitoring of watersheds, in conjunction with disaster risk management and climate change considerations, as being important in informing evidence-based decision making. Sustainable watershed management had to consider the social, economic and environmental dimensions of the issue. He said a holistic approach that utilised integrated watershed resources management, ecosystem-based approaches and participatory decision making had to be undertaken in effective watershed management.

He reiterated that the Watershed Management Policy was passed by Cabinet in March 2023 and tabled by the Prime Minister during his budget presentation in that same month. The Policy, he said, was critical to bringing cohesive, integrated management to the country's watersheds. Senator Samuda pointed out that the timing of consultations was most appropriate as the island was experiencing one of the worst droughts it had ever had.

Senator Samuda said he looked forward to feedback from participants as they contributed to the finalisation of the document as it moved from green paper to white paper.

Ms Guthrie thanked Minister Samuda for his address and noted that he set the context for the meeting by explaining the concept of a watershed, why they were important and how they contributed to providing water for the needs of the population in terms of commercial purposes, recreational purposes, for plants and animals. The discussions would look at how to maintain these areas.

She, again, thanked the Glenmuir students for taking the time to join the consultation session. She apologised on behalf of Honourable Mike Henry who was unable to attend but had indicated that Councillor Joel Williams would represent him. Ms Guthrie advised that officers of the Clarendon Municipal Corporation would be in attendance including Director of Planning Jumaine Robinson. Chief Engineer Mr Dyce was also expected. Representatives from CCAM, the primary NGO, were present.

She invited Mr Geoffrey Marshall of the Water Resources Authority (WRA) to make his presentation.

Status of Jamaica's Hydrological Basins, Geoffrey Marshall, Deputy Managing Director, Water Resources Authority

Mr Marshall shared that he would be presenting an overview of the status of the island's hydrological basins as a background to the discussion of the Watershed Policy. He first defined a watershed as an area of land that shared a common output point for the surface water collected in the area from rainfall. He cited the Rio Minho Watershed which was in Clarendon and observed that the riverbed was often dry, However, when there was heavy rainfall a lot of water flowed into the river from the watershed.

Mr Marshall said that Jamaica's watersheds were organised into watershed management units (WMUs). He noted that the island was divided into 10 hydrological basins which were then divided into 26 WMUs. The 10 hydrological basins were identified clockwise from the southeastern end of the island as the Blue Mountain South; Kingston; Rio Cobre; Rio Minho; Black River; Cabaritta, Great River; Martha Brae, Dry Harbour Mountains and Blue Mountain North. He noted that the Rio Minho Basin had the Milk River on the west and the Gut River on the southwest.

Mr Marshall presented a brief look at the hydrostratigraphy of Jamaica – the rock formations in Jamaica can be classified as aquifers or aquicludes. Aquifers were rock types that were able to store water that could be drilled to form wells. In Jamaica, there were two main types of aquifers – limestone and alluvium. He explained that aquicludes did not store water readily, but those areas tended to have a lot of surface water. He pointed out that the Blue Mountains were made up of aquicludes and there were many rivers in these areas – Portland and St Thomas, as well as central parts of the island and northern Clarendon where there were a lot of streams and springs. Those streams and springs which flowed into the limestone aquifer areas generally sank, he said. The rivers that came out of the limestone aquifers were more sustainable flows so the rivers on the north coast such as Rio Bueno and Dunn's River were identified as the products of groundwater discharge.

He noted that watersheds were based on surface water flow. Groundwater, he said, was not as well defined as surface water as there was the potential of inter-basin transfer of groundwater. He noted that while surface water had a clear mountain divide with water flowing in opposite directions, the groundwater may flow under that divide into the adjoining watershed based on the pressure gradient. He referred to Gut River where there was a small watershed close to Milk River and across to Alligator Pond and discharged into Gut River as an example of inter-basin transfer.

Some 50 per cent of the island's hydrostratigraphy was classified as limestone aquifer, 25 per cent as basal aquiclude with the other classifications being coastal aquifer and coastal aquiclude, areas in St Ann and parts of St Thomas were identified as limestone aquiclude.

He next discussed the total mean annual flow of water from the island's rivers, including historical and current data. The majority of the average annual flow was produced by three WMUs – Black River in St Elizabeth, Rio Grande in Portland and the combined flow of Dry Harbour/White River WMUs. Each provided about seven per cent of the total mean annual flow (or about 21% combined). Dry Harbour included the Rio Bueno from the west and White River from the east. The Martha Brae, Great River and Rio Cobre produced some seven per cent of the mean annual flow. This would be a reflection of high

precipitation. The Rio Bueno, Great River and Black River outflows were primarily from groundwater resources.

Mr Marshall also described the WRA's surface water monitoring network. The information shared on flow was generated from stream flow gauging stations which measured the height of the river and the discharge; records would show stated height and stated discharge. He noted that the map he shared showed red dots which represented stations which measured daily flows, yellow triangles represented spot measuring stations (once per month) – they were hoping to upgrade some of those stations to daily monitoring stations – and the grey dots represented discontinued/historical stations. There were plans to rejuvenate some of the discontinued stations to produce a more accurate record of flows. He looked, also, at the groundwater monitoring wells in Jamaica.

There were three regions in Jamaica. Region 1 – St Catherine, Clarendon and Manchester; Region 2 – all parishes west of St Elizabeth and Trelawny; and Region 3 – Kingston and St Andrew, St Ann, St Mary, St Thomas and Portland. There were stations which took monthly measurements of wells which totalled over 2000, with the majority located primarily on the aquifer areas of the south coast. He noted that these wells reflected our history as they had been established by sugar plantations located in that area of Jamaica and had provided irrigation for sugar cane.

Mr Marshall said that the WRA had proposed the delineation of new boundaries for hydrological basins and WMUs. This would be done in consultation with NEPA and the Forestry Department.

He advised that all data (up to 2022) could be found on the WRA's website.

Ms Gillian Guthrie thanked Mr Marshall for the comprehensive overview provided of the status of the country's hydrological basins. He shared that the island was divided into 10 hydrological basins and 26 management units. She noted that Mr Marshall had shared information on the hydrological basin in Clarendon and on the Rio Minho

Ms Guthrie then invited Ms Alicia Edwards of the Forestry Department to make the second presentation.

State of Jamaica's Forest Cover, Alicia Edwards, Senior Director, Forest Resource Information Management Branch, Forestry Department

Ms Edwards presented an overview of the Forestry Department's role in the assessment of Jamaica's forest cover.

Ms Edwards advised that in describing Jamaica's forest cover she would explain how the Forestry Department monitored it and the opportunities to be leveraged from the information gleaned. She said that the Forestry Department was the lead agency with responsibility for the sustainable management and conservation of the island's forest resources and managed about 117, 000 hectares of forest cover. Its work was mandated by the Forest Act of 1996 along with the sector plan (National Forest Management

and Conservation Plan) which ensured that Jamaica's forests were managed to meet the ecological needs of current and future generations.

Ms Edwards said that for management purposes the island's forest cover was organised into hierarchies. At the top was the closed broadleaf forests found in areas such as the Blue Mountains and the Cockpit Country. At the next level was disturbed broadleaf forest cover, and below that was open short dry and open tall forest cover which were generally found in Clarendon, St Catherine, and Portland Ridge. She advised that the closed broadleaf was the most pristine forest cover.

The assessment of the island's forest cover was computer-based using software called geographic information system (GIS) that allowed the monitoring and assessment of the nation's forest cover revealing areas of high forest cover or low forest cover and the variations across the island. The most recent assessment was conducted in 2013 and showed the variation that had occurred since 1998. She noted that most of the island's forest cover was located in St Catherine and Portland, the larger parishes. The Department was getting ready to commission another assessment in 2024.

The first assessment conducted in 1984, utilised aerial imagery to inform the forest cover types and categories. The Department subsequently incorporated satellite imagery as well as expert opinions regarding forest cover types and the ecological presence on the ground utilising the Department's in-house geographic information systems (ESRI products) to track and classify forest cover for the entire island. The 2013 assessment saw greater accuracy and quality control, she said.

The approach also aligned with the historical baseline from 2006 and transitioned into what was found in 2013 to 2021. The Google Earth Engine platform was used to determine the forest cover of the island and to identify locations in which forest cover was changing.

Ms Edwards said that the ownership information incorporated into the analysis from the assessment showed that most of the country's forest cover was outside of Forestry Department managed lands and most of the forested areas were privately owned. The analysis also assisted the Department in determining what the multiple drivers of change were. Gains in forest cover had been identified and were attributed to shifts in land use in rural areas, such as the abandonment of farmlands. This was in alignment with the 2013 assessment which had shown that secondary forests represented the second largest category of forest cover. She observed that the main reasons for the loss of forest cover were expansion of human settlements, infrastructure development and bauxite mining, particularly on the north coast.

Ms Edwards advised that an improved understanding of the country's changing landscape allowed the Department to better leverage its opportunities. It could improve the way it monitored forest cover, the way in which conservation initiatives were applied; how watershed management approaches were integrated and how to engage stakeholders through public awareness programmes so they would understand how to protect the island's forests and watersheds.

The Department was about to embark on the 2024 land change assessment. They would apply new assessment techniques to facilitate improved methods for future assessments. This would allow the development of new initiatives to:

- assist the implementation of the National Forest Management and Conservation Plan (2016-26) that promoted sustainable forests;

- strengthen partnerships with stakeholders (declaration of private forests, adopt a hillside, WRA, NEPA, NLA);
- Feed into increased climate resilience and functionality; and
- facilitate economic restoration of underutilised or post-mined land.

She invited participants to contact the Forestry Department for additional information if desired.

Ms Guthrie thanked Ms Edwards for her comprehensive presentation on the island's forest cover and reiterated that:

- The first assessment of the island's forest cover was conducted in 1984, further improved in 1998 with the most recent in 2013;
- The largest type of forest cover was disturbed forest, the second category was secondary forest and the third was closed broad leaf;
- Largest areas of forest cover were found in St Catherine, St Ann and Trelawny. These parishes, therefore, have greater responsibility for the protection and conservation of forests.

Drivers of change in forest cover include settlement expansion, infrastructure expansion and bauxite mining and agriculture.

Ms Guthrie invited Ms Monique Morris from NEPA to present on watershed management interventions undertaken by the agency.

Select Watershed Management Interventions in Jamaica, Monique Morris, Environmental Officer, NEPA

Ms Morris informed the meeting that she would share watershed management interventions in which NEPA had been involved between 2006 and 2023. She provided a definition of a watershed as an area which had a common outlet for its surface runoff; a watershed management unit (WMU) was the land area from the ridge of a mountain to the coast within which a group of sub-hydrological basins drained into a major water body. Watershed Area Management Mechanism (WAMM) was described as a mechanism that utilised a bottom-up approach that allowed communities to learn about sustainable land management and brought partners and stakeholders together to enable watershed management.

She next highlighted the importance of watershed management which allowed the application of known land use skills in minimising damage to vulnerable areas and to repair degradation to protect and safeguard the land for future generations. She noted, also, that it was a process of guiding the use of the land, water and other natural resources in a watershed to provide the appropriate goods and services while mitigating the impact on the soil and watershed resources. Management also involved socio-economic, human, institutional and bio-physical inter-relationships among soil, water and land use and the connection between up stream and downstream.

Over the years, NEPA had looked at various management approaches including:

- Ecosystem based approach

- Integrated coastal area management, also known as integrated coastal zone management.
- Integrated water resources management
- Ridge to reef management
- Sustainable land management
- Water resources management.

The approaches all had the objective of facilitating the pursuit of livelihoods but also ensuring that the watershed and its ecosystem resources were protected.

She identified watershed management projects that had taken place in which NEPA was a stakeholder:

- Integrated management in the Yallahs -Hope WMU (2014-2020) IDB-funded;
- Integrated Watershed and Coastal area management in small island developing state (2006-2011) GEF-funded, a regional project in which Jamaica participated;
- Jamaica Rural Economy and Ecosystems adapting to Climate Change II (JAREEACH II) – USAID funded; and
- A Jamaican path from hills to oceans (2020-2025) European Union funded Global Change Alliance

She then reported on the achievements of each project.

Yallahs- Hope Watershed Management Project

The Yallahs-Hope Project was a high priority for action because the areas the Yallahs and Hope watersheds which contain high plant biodiversity in the forests in the upper watershed were under threat resulting in unstable areas. They also had significant downstream value. She noted that planned activities included the training of government staff in the two WMUs in IWRM and of land use and use of biodiversity data for watershed management; demonstration projects in sustainable land use, forestry, agroforestry and alternative livelihoods; and fire management training for 120 participants in five communities. The participants in fire management were trained as first responders and in putting out of fires at an early stage.

Achievements of the project included:

- More than 500 farmers in 13 communities trained in Hope and Yallahs WMUs in better land Management practices to prevent soil erosion, increase crop yields improve livelihoods.
- A payment by ecosystem scheme concept was developed out of the Hope Yallahs Project whereby farmers in the watershed were encouraged to conserve resources to aid preservation of the environment. End users paid for services provided by watershed area. For example, the National Water Commission might be required to pay a percentage of earnings towards watershed protection. Funding was required to continuously effect changes in upper reaches of watershed where primary protection should take place to ensure that the services provided were sustainable;
- Trained key watershed stakeholders on how to conduct carbon stock assessments and biomonitoring; and

- GIS based decisions support system was designed.

The data gleaned by the system would identify areas in which development could take place without damaging the watershed.

Project Achievements under Integrated Watershed and Coastal Areas Management (IWCAM) in Caribbean small island developing states

A regional project, in Jamaica it was implemented in the Drivers River Watershed which had been selected as a demonstration site. The project assisted in identifying good practices in environmental behaviour and activities by communities located within watersheds utilising two approaches. They captured existing best practices and lessons learnt (Ridge to Reef Watershed Project; Coastal Water Quality Improvement Project (CWIP) and Environmental Action Programme (ENACT)); and developed methodologies that were suitable for successfully replicating integrated watershed and coastal management practices in the future.

Ms Morris explained that the WAMM had emerged from the Dry River Project and comprised biomonitoring training, training for financing project development, project writing skills, monitoring of the actual output and components so persons involved in the management of the area would understand changes taking place and be able to determine whether corrective actions should be taken.

Some activities conducted towards the development of WAMM included:

- 18 months of water quality and data collection and analysis;
- Reef check conducted at 14 sites;
- Bio monitoring training;
- Community members trained to conduct sampling;
- KAP survey;
- 20 farmer training days with persons directly involved in land use changes allowing the integration and dissemination of best practices to practitioners involved in landscape changes;
- Proposal writing workshops; and
- fruit tree production.

Achievements of the JAREEACH II project

Among the highlights were as follows.

- Four institutions had extended credit to micro business and small and medium sized businesses. This was seen as a key component in which the private sector could become involved. The Agency would facilitate this by interacting with the private sector and the community to develop small businesses so as to minimise reliance on forest services.
- 79 value chain actors were supported to market climate smart agriculture products to 171 stakeholders implementing risk reducing practices.
- 127 institutions increased capacity to assess climate change impacts
- 102 institutions were supported in mainstreaming climate and disaster risk reduction in development planning.

Jamaican Path from Hills to Oceans

Ms Morris commented that the Jamaica Hills to Oceans Project was ongoing in three watershed areas – Rio Bueno/White River, Rio Nuevo and Wagwater. The achievements were listed as follows.

- Rapid ecological assessment was completed in three focus area – Wag Water River, Rio Nuevo and Rio Bueno/White River WMUs. She advised that the REAs completed would be shared with RADA which would prioritise areas for intervention.
- integrated and sustainable landscape management/ climate change adaptation interventions were being implemented.
- enhanced food security and sustainable Livelihoods were ongoing in communities through RADA. The agency was currently involved in the assessment aspect of the project to identify priority areas for intervention.
- There was an increase in the knowledge and competence of community members and technical staff interacting within WMUs.

Ms Morris noted that when the policy was finalised, the activities to be implemented would be supported by the finalisation of the new WMUs that the WRA was recommending.

Ms Guthrie thanked Mrs Morris for her presentation. She referred to the three comprehensive talks which provided the context for a better understanding of the draft watershed policy – from the Water Resources Authority on the status of the island’s hydrological status; the Forestry Department on the nation’s forest cover and NEPA on watershed management interventions undertaken by the National Environment and Planning Agency.

Next would be the presentation on the draft Policy on watershed management the key issue which all stakeholders had been invited to discuss. She acknowledged that many present had not had the opportunity to read the document. She advised that the policy had been disseminated to parish libraries and offices of municipal corporations and was also posted on the websites of the Ministry of Economic Growth and Job Creation (MEGJC), the Forestry Department, NEPA and WRA. She noted that the series of consultations would culminate with a virtual townhall meeting for the general public.

She emphasised the importance of getting feedback on the document from the municipal corporations (MCs). She asked that participants read the document, have internal discussions with colleagues and submit written comments. She stressed the fact that many of the recommended policy prescriptions were actually related directly to the work of MCs. Hence, the need for MCs to indicate their support or not. Where they were not in support of a prescription she asked for appropriate recommendations. She advised that after the presentation of the Policy there would be a discussion to elicit feedback.

Ms Guthrie invited Ms Toni Ann Miller to make the presentation on the draft Watersheds Policy.

Watersheds Policy For Jamaica (Green Paper), Ms Toni-Ann Miller, Director, Natural Resources (Acting), MEGJC

Ms Miller advised participants that the feedback elicited in the discussion session would inform the finalisation of the Policy document.

She advised that the main purpose of the Policy was to address the institutional and legal framework for more effective management of Jamaica's critical watershed areas; to consider relevant policies and legislation as well as the UN's Sustainable Development Goals.

She first defined three important terms: a **watershed** as an area having a common outlet for its surface water runoff; a **watershed area** as one defined and declared to be a watershed area under section 5 of the Watershed Protection Act; and a **watershed management unit** as a defined land area from the ridge of a mountain to the coast within which a group of sub hydrological basins drained into a major water body.

She expanded on the concept of the watershed and noted that a healthy watershed provided several goods and services including food, fresh water, habitat for a variety of flora and fauna, opportunities for recreation and ecotourism and was better adapted to mitigate against climate change.

She reiterated that there were 26 WMUs across the island and listed some of the issues impacting watersheds. These included: forest removal to facilitate mineral extraction, improper disposal of solid waste, poor farming practices including the improper use of chemicals which resulted in the contamination of water, informal settlements, illegal logging, and charcoal burning.

Policy and Legislative Frameworks

Ms Miller noted that the preparation of the draft was guided by the Fundamental Rights and Freedoms and was aligned to the Vision 2030 – National Development Plan – and several policies including:

- The Climate Change Policy Framework, 2023
- National Land Policy, 1997
- The Forest Policy, 2016
- The National Forest Management and Conservation Plan, 2016-2026
- The National Water Sector Policy and Implementation Plan, 2019
- The National Minerals Policy, 2017-2030
- Policy for Jamaica's System of Protected Areas, 1997
- Protected Areas System Master Plan 2013-2017
- Local Sustainable Development Plans

She explained that the Land Policy and the Protected Areas Policy were currently being updated.

The legislations relevant to Watershed protection and preservation were identified as:

- The Watershed Protection Act, 1963
- The Natural Resources Conservation Authority Act, 1991
- The Forest Act, 1996

- The Water Resources Act, 1996
- The Rural Agricultural Development Authority Act
- The Wildlife Protection Act
- The River Rafting Act
- The Public Health Act.

The institutional arrangements for the oversight of the Policy, listed the body with primary responsibility as the Ministry with responsibility for the environment, the Ministry of Economic Growth and Job Creation. Associated with the Ministry was the Integrated Water Resources Management Council, which fell under the aegis of Senator the Honourable Matthew Samuda. The ministry was supported in the effort by the Natural Resources Conservation Authority/National Environment and Planning Agency, Forestry Department and the Water Resources Authority.

Ms Miller then shared the relevant regional and global arrangement to which Jamaica was party and thus had made certain commitments in relation to environmental protection. These included:

- The Convention on Biological Diversity (CBD), 1992
- The UN Framework Convention on Climate Change (UNFCCC), 1994
- The United Nations Convention to Combat Desertification in those countries experiencing serious drought/ or desertification, particularly in Africa (UNCCD), 1994
- The Convention on Wetlands of International Importance (Ramsar Convention), 1971
- The Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention), 1983
- The United Nations Forest Instrument, 2025 – formally known as the Non-legally Binding Instrument on all Types of Forests (NLBI)
- The Global Programme of Action for the Protection of the Marine Environment from land-based activities, 1995
- Regional Agreement on Access to Information public participation and justice in environmental matters in Latin America and the Caribbean, 2018
- The Convention Concerning the Protection of World Cultural Music and Natural Heritage, 1972 (The UNESCO world Heritage Convention)
- International Plant Protection Convention, 1951
- Agenda 2030 and its sustainable goals.

Ms Miller pointed out that the legislative and institutional framework governing watershed management required updating. Also, human and financial as well as technical resources were needed for effective watershed management. Other challenges and gaps to be addressed included the practice of sustainable land management which meant that land should not be damaged by human activity. An example of sustainable land management, she said, was agroforestry, in which trees and shrubs were integrated into crop and animal farming systems. These were to be supported by ongoing public education and awareness raising.

Vision of the Policy – Jamaica has healthy and optimally functional watersheds that are efficient and effective in the provision of ecosystem services for the benefit of all.

She noted that the draft policy had nine **guiding principles**.

1. Transparency and accountability
2. The precautionary Approach
3. Sustainability and inter-generational equity
4. Participation and collaboration
5. Conflict resolution
6. Environmental economic tools and technology
7. Protection and sustainable use of water resources
8. Evidence-based approach
9. Polluter pays principle.

She highlighted the goals and objectives of the Policy.

Five Policy Goals

1. Comprehensive legislative and institutional framework are developed to support the effective management of Jamaica's watersheds.
2. Adequate and sustainable finance mechanisms are provided for improved watershed management.
3. Watershed management is enhanced through increased access to information and data to facilitate informed decision making at all levels.
4. Jamaicans are aware of the importance of watersheds and are active participants in their conservation.
5. Sustainable land management is promoted within the watersheds through the utilization of best environmental practices and best available technologies.

Objectives of the Policy

1. Rationalization of legislative and institutional frameworks for watershed and water resources management.
2. Updating the national watersheds management programme and provision of adequate human and technical resources for the implementation of the programme
3. Provision of adequate and sustainable financing for watershed management activities.
4. Increased availability of appropriate information and data for effective waterhead management.
5. Increased public education and awareness initiatives geared towards positive changes in attitudes to watershed conservation and promotion of public participation in the planning of watershed management interventions.
6. Support initiatives to encourage appropriate land use and sustainable land management.

Institutional framework for implementation of the Policy.

The NRCA would be required to establish a Watersheds Protection Committee taking into consideration the status of the WMUs across the island. This committee will comprise representatives from the Ministry of Finance, NEPA, Forestry Department, Water Resources Authority, RADA, NWC, PIOJ, SRC, SDC, civil

society, community-based organisations, NGOs and the private sector. The Committee would be established at the national level and sub committees at the parish level.

Implementation plan

<p>Policy Objective</p> <p>1. Rationalization of legislative and institutional frameworks for watershed and water resources management. For example, the WPA will be amended to include definitions and institutions that are not there. Also, currently it does not include sub committees and these will be incorporated.</p>	
<p>Strategy</p>	<p>Key Activities</p>
<p>1.1. Review and streamline the provision of the NRCA Act, WPA Act, RADA Act, WRA Act and Forestry Act</p>	<p>1.1.1. Preparation of technical paper and drafting instructions for the amendment to the requisite legislation.</p> <p>1.1.2. The review of the legislative provisions relating to point and non-point source pollution.</p>
<p>1.2. Prepare the boundary description and zoning plans for the WMUs for inclusion in the WPA</p>	<p>1.2.1 Reconnaissance of WMU boundaries, prepare maps and written descriptions, and conduct ecological assessments.</p>
<p>2. Updating the national watersheds management programme and provision of adequate human and technical resources for the implementation of the programme.</p>	
<p>2.1 The WAMM will be established as a code of practice for watershed management</p>	<p>2.1.1. Consultation with the relevant agencies such as NEPA and the WRA to develop the code of practice.</p>
<p>2.2 A national programme will be developed and implemented to facilitate training in watershed management in areas such as soil conservation, hydrology and GIS. Courses would be offered at vocational institutions among others.</p>	<p>2.2.1. Consultation with the relevant agencies, training institutions and ministries to identify gaps and best practices.</p>
<p>3. Provision of adequate and sustainable financing for watershed management activities.</p>	
<p>3.1 Implementation of a PES scheme. This scheme will incentivise individuals living within watersheds to practice land management systems to preserve and maintain ecological integrity within the areas.</p>	<p>3.1.1. Pilot and implement the PES scheme.</p> <p>3.1.2. Develop and recommend an incentive scheme for private sector participation in watershed management.</p>
<p>3.2. Rehabilitation and management needs in WMUs will be identified</p>	<p>3.2.1. Establishment of the Watersheds Protection Committee and Watersheds Protection sub-Committee with a constitution having consideration for youth and gender balance</p>
<p>3.3. Funding options will be explored and implemented</p>	<p>3.3.1. Solicit commitment from Government to provide financial support for watershed management</p>
<p>4. Increased availability of appropriate information and data for effective watershed management</p>	
<p>4.1. Enhance the use of information technology</p>	<p>4.1.1 Implementation of the integrated watershed management GIS_DSS.</p> <p>4.1.2. Revise the WMU classification system. The last one was done in 1999.</p>

	4.1.3 Implement the use of drones in monitoring watersheds.
4.2 Increase the capacity to conduct research and exchange information	4.2.1. Determine research by the Watershed Protection Committee
5. Increased public education and awareness initiatives geared towards positive changes in attitudes to watershed conservation and promotion of public participation in the planning of watershed management interventions.	
5.1. Preparation of public awareness and education programming on watersheds.	5.1.1. Strategies and material for public awareness and education developed and executed. 5.1.2. Create public education programme on the importance of watershed protection to be used in schools in Jamaica.
5.2 Implementation of the WAMM	5.2.1. Implementation of WAMM components 1.9 and 10
6. Support initiatives to encourage appropriate land use and sustainable land management.	
6.1 Integration of SLM practice	6.1.1. Determine existing SLM practice 6.1.2. Integrated management of watershed will pay specific focus on changing landscapes.
6.2 Commissioner of Lands will address issues relating to land tenure and access to crown land	6.2.1. Support the systematic land registration programme
6.3. NEPA will update existing development orders focussing on core areas for protection	6.3.1. Determine core areas for watershed protection
6.4. NEPA will recommend to the municipal corporations the inclusion of watershed protection strategies in parish development plans.	6.4.1. Develop strategies for parishes 6.4.2. NEPA makes recommendations for local government to include watershed protection strategies
6.5. The NRCA/TCPA and the municipal corporations will take into consideration area within the watershed to be protected	6.5.1. Recommendations on the designation of tree preservation orders at the parish level.

Ms Miller said the monitoring and evaluation of the Policy would be carried out by the responsible ministry (MEGJC) biannually and shared a list of Appendices that might be consulted for further details on areas covered by the Policy.

1. Policies and Plans Relevant to Watershed Management
2. Approaches to the Management of Land and Water Resources
3. Declared Watershed Areas
4. Watershed Management Units and Hydrological Basins
5. Global and Regional Commitments Relevant to the Management of Watersheds
6. Main Global Agreements Focused on Sustainable Development
7. Consolidated List of Watershed Management Projects
8. Detailed Monitoring and Evaluation

DISCUSSION moderated by Gillian Guthrie

Ms Guthrie thanked Ms Miller for her presentation and pointed out that it was a synopsis of some of the issues addressed in the Policy. She reminded all present that copies of the document had been sent to regional libraries as well as to the offices of the municipal corporations. They were also to be found on the websites of MEGJC, WRA, NEPA and the Forestry Department. She advised that information on the hydrological status of the island could be found on the WRA's website, and information on the island's forest cover on the Forest Department's website. Ms Guthrie reiterated that the WRA's presentation had shared that the island was divided into 26 watershed managements units. Mr Marshall had focused on the watershed in Clarendon. She discussed the importance of watersheds and why they should be properly managed, emphasising the following.

1. Watersheds were the area in which water was generated by surface run off from rainfall.
2. Watersheds supported livelihoods for humans and water for plants and animals.
3. Watersheds provided locations for recreational functions.

She asked for comments/questions on issues which impacted watersheds adversely to be highlighted – some which they believed the Policy should address. Some, such as the illegal clearing of land, logging, expansion of residential areas, discharges from industrial sources, were well known.

Leighton Mamdeen, Caribbean Coastal Area Management Foundation (CCAM), noted that a lot of fresh water was used for farming and asked if there were any regulations to prevent overextraction of water from wells.

Geoffrey Marshall, Water Resources Authority, advised that the mandate of the Water Resources Act required a licence from the WRA for the extraction of water. The granting of a licence was determined by the safety and manner in which it would be extracted. He noted that before the WRA was established in 1994, there was unregulated public extraction of water. That practice led to saline intrusion in the southern part of Kingston and St Andrew, St Catherine and St Mary which has had an adverse impact on water quality. The WRA required subtraction of water to be licenced. He added that there was a moratorium on licences to reduce extraction. There was a project underway to reduce the saline in the water of the Rio Cobre, he said. In addition, there was a study to see exactly where saline intrusion was occurring and sea level rise occasioned by climate change also added to the saline problem. Licensing was intended to control extraction. The WRA monitored water quality regularly.

Geoffrey Marshall cited information from the presentation by the Forestry Department which advised that the majority of the nation's forests were in private hands. He asked whether the owners of these lands were known and what were the plans in terms of working with the private owners to ensure maintenance of the forest cover.

Alicia Edwards, Forestry Department, noted that the Department's assessment had revealed that most of the forested land in Jamaica was privately owned. They also recognised that land tenure was a mixed issue. Where the land parcels had names, most were not properly documented showing details of ownership. This was a major issue across the island; land tenure was uncertain. Also, many persons depended on the land for their livelihood.

Gillian Guthrie asked colleagues from the municipal corporation if there was anything they wanted to highlight as they were the regulators. She did not realise how sensitive the Clarendon area was in terms of the fragility of the geology and flooding. She asked them to advise how the Watersheds Policy could assist.

Jumane Robinson, Clarendon Municipal Corporation, said he recently learnt about ecosystem-based evaluation. He noted that rainwater harvesting was a prescription that Senator Samuda wanted to be included in building applications. He felt that it was important to look more closely at the development orders for Clarendon, perhaps even regionally. As it related to forests, he learnt from the presentation that most of the country's forested lands were privately owned. He added that there was a serious drainage problem in the parish. One of the strategies that the MC was implementing was substituting grass for concrete in subdivisions. He promised to go through the Policy document.

Rushaun Green, Building Officer (Acting) Clarendon Municipal Corporation, highlighted the issue of mining, where companies built channels to access water outside of their approved area. He reported, also, that sometimes subdivisions could not access water.

Gillian Guthrie asked if municipal corporations if their approval process was informed by maps indicating no-build zones and areas that were ecologically sensitive, so as to be mindful about the types of approvals given.

Rushaun Green advised that there were no build zones, for example indicating areas too close to river channels and ensuring, too, that building was not taking place illegally in areas such as Portland Cottage.

Jumane Robinson added that the entire parish was zoned, and plans were public.

Gillian Guthrie highlighted the recommendations for a sustainable financing mechanism (payment for ecosystem services) whereby stakeholders in the watershed were paid for activities and practices which helped to maintain the health of watersheds. Those who benefit pay those whose actions protect and conserve the watershed to ensure it is functional. She highlighted beekeeping as one such low impact livelihood activities which sustained the watershed.

Alicia Edwards advised that nothing had been implemented at the community level, but they were talking about the next step for the REDD+ initiative. They had just completed a proposal for a four-year European Union project which was a sustainable livelihood project and among the proposals was grant funding for community-based organisations to support sustainable management practices such as farming, craft and activities which support sustainable management practices.

Gillian Guthrie pointed out that the discussion on financing included a recommendation that agencies whose activities depended on functioning watersheds such as the WRA and those who issue licences such as NRCA and TPDCo, should assign a portion of fees to watershed management. Also, a portion of the water bill should be retained for watershed management.

She pointed out that there were many strategies and objectives in the document that had implications for agencies. So, she asked for recommendations from the corporations.

Rushaun Green suggested that dedicated consultation with all municipal corporations, specifically about this issue, be held.

Ms Guthrie thanked all those present for attending and for their contribution. She asked for comments to be submitted to MEGJC by 21 June 2023.