

PRIVATE SECTOR CONSULTATION ON THE WATERSHEDS POLICY FOR JAMAICA

MAY 18, 2023



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Contents

Acronyms	3
Background	4
Opening Remarks: Ms Gillian Guthrie, Chief Technical Director, Policy Planning & Evaluation, MEGJC	5
Keynote Address: Senator the Honourable Matthew Samuda, Minister without Portfolio, Ministry of Economic Growth and Job Creation (MEGJC)	5
Status of Jamaica’s Hydrological Basins, Geoffrey Marshall, Deputy Managing Director, Water Resources Authority	7
State of Jamaica’s Forest Cover, Mrs Alicia Edwards, Senior Director, Forest Resource Information Management Branch, Forestry Department	8
Select Watershed Management Interventions in Jamaica, Mr David Reid, Coordinator Watersheds Information System, Ecosystem Management Branch, National Environment and Planning Agency (NEPA)	9
Watersheds Policy For Jamaica (Green Paper), Ms Toni-Ann Miller, Director, Natural Resources (Acting), MEGJC	12
DISCUSSION moderated by Ms Gillian Guthrie	17
CLOSING REMARKS, Ms Gillian Guthrie	22

Acronyms

CBD	Convention on Biological Diversity
GoJ	Government of Jamaica
JHTA	Jamaica Hotel and Tourist Association
MEGJC	Ministry of Economic Growth and Job Creation
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
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
WMU	Watershed Management Unit
WPA	Watershed Protection Act
WRA	Water Resources Authority

Background

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 and areas adjoining watersheds and the promotion of the conservation of water resources were assigned to a specific entity with the enactment of the Watershed 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 have been implemented and new global commitments made. It is within this context that this Policy seeks to address the institutional arrangements for effective watershed stewardship.

The Government of Jamaica seeks 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.

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 have been 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 distributed to parish libraries across the island as well as to offices of municipal corporations. Electronic copies were made 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: Private Sector Consultation May 18, 2023

Opening Remarks: Ms Gillian Guthrie, Chief Technical Director, Policy Planning & Evaluation, MEGJC

Ms Guthrie welcomed all participants to the Ministry of Economic Growth and Job Creation's (MEGJC) private sector consultation on the draft Watersheds Policy for Jamaica. She said that she hoped that the session would be a productive and interactive one. She emphasised that the Watersheds Policy was very important and looked forward to the input of the private sector's vision of the draft. She shared that a consultation had been done with the public sector previously and that there would be consultations with civil society, academia and community-based organisations before rounding off the series by consulting with the public in a virtual townhall meeting.

Ms Guthrie hoped that participants had had the opportunity to read the document which had been posted on the Ministry's website www.megjc.gov.jm. The document, she reported, was also available on the National Environment and Planning Agency's and Forestry Department's websites. In addition, copies of the documents will be distributed to public libraries across the island and offices of the municipal corporations in each parish.

She asked those participants who had not already done so to make every effort to access the document, read it carefully and submit their written comments. She invited comments in the discussion session and advised that a rapporteur would be capturing those comments shared in the meeting. All views and comments would assist in finalising the policy.

Keynote Address: Senator the Honourable Matthew Samuda, Minister without Portfolio, Ministry of Economic Growth and Job Creation (MEGJC)

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

Senator Samuda advised participants that the Watersheds Policy had been approved by Cabinet as a Green paper and was tabled in the House of Representatives on March 2023. He noted that it sets out principles which will 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 and ensuring that Jamaicans are aware of the importance of watersheds and became 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 a wide variety of flora and fauna. However, unchecked human activities have disrupted the delicate balance of these ecosystems leading to the degradation and depletion of our precious water resources.

Senator Samuda shared that the 2019 National Water Sector Policy and Implementation 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 sustaining life, supporting livelihoods and driving economic growth, but, in some cases, was not treated as such and thus not conserved and used efficiently. He noted that rationalisation of the country's legislative and institutional framework was required to ensure coherence, efficiency and effectiveness in water resources management.

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

Senator Samuda cited the monitoring of watersheds in conjunction with disaster risk management and climate change considerations as being important in informing 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, eco-system-based approaches and participatory decision-making had to be undertaken in effective watershed management.

He reiterated that the Watershed Management Policy was passed 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 the 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 Gillian Guthrie thanked Senator Samuda for his remarks. She outlined the agenda for the benefit of the participants. Three presentations from key government agencies would provide context on watersheds to enhance understanding of the Watersheds Policy. The presentations were being delivered by the Water Resources Authority (WRA), Forestry Department and NEPA. She invited Mr Geoffrey Marshall, Deputy Managing Director, WRA, to make the first presentation.

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

Mr Marshall described the administrative framework of the country's watersheds. He noted that the island was divided into 10 hydrological basins and further subdivided into 26 watershed management units. He explained that the watershed management units (WMUs) were administrative and not geographic units. They were groupings of watersheds put together for management purposes.

He provided the definition of a watershed as an area of land with a common point of outflow, for example, the area of a watershed comprises surface water flow to a common river. He noted that some hydrological basins comprised only a single watershed while others had multiple watersheds. He advised that the names of WMUs could be found on the WRA website.

Mr Marshall shared statistics on the volume of flow from most productive watersheds. The Black River, Rio Bueno and White River contributed most of the island's water in terms of straight annual discharge.

Mr Marshall presented a brief look at the geology of the island in relation to its water-bearing characteristics. Jamaica comprised alluvium aquifers and alluvium aquicludes, coastal aquifer and coastal aquicludes, limestone aquifers and limestone aquicludes as well as basal aquicludes. He clarified that an aquifer was a geological formation that produced water to form wells; on the other hand, an aquiclude did not have groundwater resources. Usually, water in those regions was surface water as occurred in the Blue Mountains with its many rivers. Aquifers, he reported, occurred, primarily, in limestone and karst areas. He said that the rivers in St. Ann were not as dependent on rainfall as some supply came from groundwater. Limestone aquifers produced the most significant volumes, some 50 per cent, he said. Mr. Marshall emphasized that watersheds focused on surface water. He noted that there were also classifications for swamps including the Great Morass in Black River and the morass in Negril. He noted, also that there were areas in which inter-basin transfer occurred with water diverted from one WMU to another (as in the Gut River WMU).

Mr Marshall described the process by which water flow was monitored in the WMUs. The WRA had a large network of stations which carried out continuous daily measurements, and monthly spot measurements and there were discontinued stations which only had historical data. The plan, he said, was to convert the spot measurement stations to daily flow stations so as to increase the reliability of data collection, and to revive some discontinued stations and add new stations to expand the network. He added that there was some groundwater monitoring, executed through monthly monitoring of some wells.

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

Ms Guthrie provided a brief synopsis of the presentation, highlighting the organisation of the island in 10 hydrological basins and 26 WMUs. The latter were categorised for ease of management. She highlighted the monitoring stations utilised by the WRA for daily and spot monitoring, noting that some had been discontinued with only historical data. She shared the proposal for the resetting of boundaries of WMUs in consultation with the Forestry Department and NEPA.

Mrs Alicia Edwards of the Forestry Department was invited to make the second presentation.

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

Mrs Edwards provided an overview of the Forestry Department's role in the assessment of Jamaica's forest cover and introduced the Department's new approach in determining their 2024 land use and cover for the island.

Mrs Edwards advised that the Forestry Department was the lead agency with responsibility for the sustainable management and conservation of the island's forest resources. Guided by the National Forest Management and Conservation Plan, 2016-2026, the Forestry Department ensured the effective management of forests to meet the economic, social and ecological needs of current and future generations. She noted that the Department conducted decadal assessments of forest cover and land use analysis for the island through the use of Landsat imagery, satellite imagery and GIS to determine land use classes on the island. Over the years, they have tried to improve and incorporate advanced technology in conducting these assessments.

The most recent assessment, she said, was conducted in 2013 when it was revealed that the island had over 40 per cent forest cover. At that time, also, a new forest cover class – secondary forests – was identified. It was found that parishes such as St. Ann, Trelawny, Portland and St Catherine had a lot of forest cover. The largest loss experienced on the island was in the category of swamp forest cover and open dry short forest cover. She pointed out that intervention strategies would be required to ensure that what was left was preserved.

She advised that with the advent of REDD readiness phase 1 new methods for monitoring forest cover (2021) had been introduced. Utilising the Google Earth Engine, the Department was able to determine forest cover across the island and the results aligned with the 2013 analysis. This analysis provided an enhanced understanding of how Jamaica's land cover was changing. It focused on areas of regrowth and degradation. It was discovered that most of the forest cover outside of the Department's managed areas was privately owned. It was also revealed that the Forestry Department managed only 25 per cent of land under tree cover, about 11 per cent of the island. In terms of tree cover outside of the Forestry Department's managed areas, individuals who owned land with tree cover were facilitating conversions in land use. The analysis also identified larger areas with drivers for change in terms of gains or losses. Most of the gains could be attributed to agricultural shifting in rural areas which had resulted in areas of abandoned farmlands. There were changes in areas where there was settlement expansion, infrastructural development and bauxite mining. She pointed out that an understanding of the changing landscape allowed the Forestry Department to better leverage opportunities which included a more informed approach when interfacing in the international arena in terms of determining a benchmark against performance in forest cover. It would also allow the Department to play a more vital role in relation to compliance with international agreements.

Mrs Edwards cited the decadal assessment that would take place in 2024 to produce land use and land cover data. She shared that data from 2013 and 2021 assessments would facilitate a hybrid approach to understanding land use and land cover in Jamaica. The hybrid approach, she explained, used a combination of low-resolution and high-resolution imagery capturing high-variation and low-variation data across the island. She said that the main value of the approach was that it allowed identification of other areas such as urban forests and a better understanding of different land use and changes occurring in the landscape. Understanding this information would feed into greater opportunities that existed and allowed the Department to focus on:

- sustainable forest management in the face of climate change;
- partnership with stakeholders (declaration of private forests, adopt a hillside, WRA, NEPA, NLA);
- economic restoration of underutilised or post-mined land;
- enhanced income generation (agroforestry businesses); and
- climate resilience and functionality.

Ms Guthrie highlighted the observation by Mrs Edwards that a large percentage of forested lands were privately owned thus underscoring the importance of the private sector being involved in the discussion of how best to conserve and protect forest resources. She also highlighted the government's programme to plant three million trees in three years. She encouraged all who were not yet on board to get on board. Labour Day, she said, would focus on that project.

Mr Reid was then invited to make the presentation on the interventions in which NEPA had been involved.

Select Watershed Management Interventions in Jamaica, Mr David Reid, Coordinator Watersheds Information System, Ecosystem Management Branch, National Environment and Planning Agency (NEPA)

Mr Reid informed the meeting that NEPA had been involved in watershed management for several years. He said that his presentation would highlight relevant interventions by NEPA, many of which had been carried out in association with various funding sources between 2002 and 2023.

He reiterated the 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.

Mr Reid said that NEPA implemented watershed management from the Watershed Area Management Mechanism (WAMM) approach that targeted communities in building resilience to improve the status of the watershed.

He advised that watershed management was the process of organising and guiding the use of land, water and other natural resources in a watershed area to provide appropriate goods and services while mitigating the impact on the watershed resources.

Over the years, NEPA has 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

He identified projects that had taken place:

- 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;
- 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 Climate Change Alliance

He 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 which contained high plant biodiversity in the forests in the upper watershed and which also had significant downstream value were under threat. He 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 preventing and putting out fires at an early stage.

Achievements of the project included the following:

- More than 500 farmers in 13 communities trained in the Hope and Yallahs WMUs in better land management practices;
- A concept developed out of the Hope Yallahs Project is the payment by ecosystem (PES) project whereby end users pay for services provided by watershed area, primarily water production and recreational uses – services watersheds provide. A system to price the services would have to be designed. He explained that these payments would contribute to the financing that was required to continuously effect changes in the upper reaches of watersheds where primary protection must take place to ensure that services provided were sustainable;
- Trained key watershed stakeholders on how to conduct carbon stock assessments and biomonitoring; and
- GIS-based Decisions Support System designed.

Project Achievements under Integrated Watershed and Coastal Areas Management (IWCAM) in Caribbean Small Island Developing States

The Drivers River Watershed had been selected as a demonstration project to assist in identifying good practices in environmental behaviour and activities by communities located within watersheds utilising two approaches. The two approaches involved capturing existing best practices and lessons learnt and developing methodologies that were suitable for successfully replicating integrated watershed and coastal management practices in the future.

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

Some activities conducted towards the development of WAMM included the following:

- Bio-monitoring training took place
- 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
- 18 months of water quality and data collection and analysis
- Reef check conducted at 14 sites
- KAP survey
- Community members trained to conduct sampling
- Proposal writing workshops and
- Fruit Tree Production.

Achievements of the JAREEACH II project

- Four institutions extended credit to micro, small and medium-sized businesses- a key component in which the private sector can get involved. The Agency could interact with the private sector, through the community to ensure that small businesses could be developed 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 benefited from 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

Mr Reid reported that the Jamaican Path from Hills to Oceans Project was ongoing. During the process, they had completed a rapid ecological assessment which allowed the identification of areas for intervention. He noted that the Rural Agricultural Development Agency (RADA) would be the key partner for that intervention but would also be targeted for community intervention.

- The rapid ecological assessment was completed in three focus areas – Wag Water River, Rio Nuevo and Rio Bueno/White River WMUs.;
- Integrated and sustainable landscape management/ climate change adaptation interventions were being implemented;

- Enhanced food security and sustainable livelihoods programmes are ongoing in communities through the Rural Agricultural Development Agency (RADA). The agency was currently involved in the assessment aspect of the project to identify priority areas for intervention.
- Increase in the knowledge and competence of community members and technical staff interacting within WMUs.

Some of the products that were being offered included the biodiversity of our watersheds.

Ms Gillian Guthrie observed that the three presentations had set the context for the discussion of the draft policy and invited Ms Toni-Ann Miller to present highlights of the draft 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 frameworks for more effective management of Jamaica's critical watershed areas; considering relevant policies and legislation as well as the UN's sustainable development goals.

She started by expanding on the concept of the watershed and noted that a healthy watershed provided several goods and services including food, fresh water, air filtration, soil formation, 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 watershed management units 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, charcoal burning, agricultural runoff and groundwater contamination.

Policy and Legislative Frameworks and Institutional Arrangements

Ms Miller noted that the preparation of the draft Policy 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 primary 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

Other relevant legislations include:

- 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 (NRCA)/ 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 a 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, 2015-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 Development Goals.

Ms Miller pointed out that the legislative and institutional framework governing watershed management required urgent attention. 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 using land without damaging ecological processes or reducing biological diversity. An example of sustainable land management, she said, was agroforestry, in which trees and shrubs were integrated into crop and animal farming systems.

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.

Ms Miller listed the nine **guiding principles** within the draft Policy draft Policy:

1. Transparency and accountability,
2. 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.

Five Policy Goals were identified as follows:

1. Comprehensive legislative and institutional frameworks 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 watershed 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.

Ms Miller explained that the NRCA would be required to establish a Watersheds Protection Committee taking into consideration the status of the WMUs across the island. This committee would comprise representatives from the Ministry of Finance, NEPA, Forestry Department, Water Resources Authority, RADA, National Water Commission (NWC), Planning Institute of Jamaica (PIOJ), Scientific Research Council (SRC), Social Development Commission (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

Ms Miller presented a matrix representing a summary of the proposed implementation plan highlighting selected strategies and accompanying key activities.

Policy Objective	
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 were not there. Also, currently, it did not include sub-committees and these would be incorporated.	
Strategy	Key Activities
1.1 Review and streamline the provision of the NRCA Act, WPA, RADA Act, WRA Act and Forestry Act	1.1.1 Preparation of technical paper and drafting instructions for the amendment to the requisite legislation. 1.1.2 The review of the legislative provisions relating to point and non-point source pollution.
1.2. Prepare the boundary description and zoning plans for the WMUs for inclusion in the WPA	1.2.1 Reconnaissance of WMU boundaries, prepare maps and written descriptions, and conduct ecological assessments.
2. Updating the national watersheds management programme and provision of adequate human and technical resources for the implementation of the programme.	
2.1 The WAMM will be established as a code of practice for watershed management	2.1.1. Consultation with the relevant agencies such as NEPA and the WRA to develop the code of practice.
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.	2.2.1. Consultation with the relevant agencies, training institutions and ministries.
3. Provision of adequate and sustainable financing for watershed management activities.	

3.1 Implementation of a PES scheme	
3.1 Implementation of a PES scheme	3.1.1. Pilot and implement the PES scheme 3.1.2. Develop and recommend an incentive scheme for private sector participation in watershed management.
3.2. Rehabilitation and management needs in WMUs will be identified	3.2.1. Establishment of the Watersheds Protection Committee and Watersheds Protection sub-Committee with a constitution having consideration for youth and gender balances
3.3. Funding options will be explored and implemented	3.3.1. Solicit commitment from Government to provide financial support for watershed management
4. Increased availability of appropriate information and data for effective watershed management	
4.1. Enhance the use of information technology	4.1.1 Implementation of the integrated watershed management GIS-DSS. 4.1.2. Revision of the WMU classification system. The last one was done in 1999.
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. Development and execution of strategies and material for public awareness and education developed and executed. 5.1.2. Creation of a 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 (SLM).	
6.1 Integration of SLM practice through programmes	6.1.1. Determine existing SLM practice 6.1.2. Integrated management of watersheds 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. Existing development orders focussing on core areas for protection to be updated by NEPA	6.3.1. Assess to determine core areas for watershed protection
6.4. NEPA will recommend to the municipal corporation 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 areas within watersheds to be protected	6.5.1. Recommendations on the designation of Tree Preservation Orders at the parish level.
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Ms Miller stated that the monitoring and evaluation of the Policy would be carried out by the responsible ministry for the environment (MEGJC) bi-annually and shared a list of Appendices that should 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 Framework

DISCUSSION moderated by Ms Gillian Guthrie

Ms Guthrie advised participants that the floor would be opened up for comments on the draft Policy. Having had the benefit of the three presentations providing the context on the status of watersheds and watershed management as well as a synopsis of the draft Policy, participants were being invited to make their input in terms of their thoughts on the vision, goals, objectives and the implementation plan.

Ms Guthrie shared that this was the second in a series of consultations. The first was held with the public sector and others would follow with the final being a townhall meeting that would invite responses from the public.

The Ministry, she said, would like to hear from the private sector on the appropriateness of the document. She invited participants to ask questions relating to the three presentations made by the Water Resources Authority, Forestry Department and the National Environment Planning Agency.

The discussion will be focused on the following questions.

1. In relation to existing policies, legislation and state actors, are there any additional gaps or other matters to be considered/addressed in the Policy Framework?
2. Are the Vision, Goals and Principles adequate?
3. Are the Objectives, Strategies and Actions adequate?
4. Are there any programmes, projects, strategies, plans of other initiatives (past, ongoing or planned) that may have an impact on the policy's context and its recommended objectives/strategies/actions?
5. Other recommendations?

Ms Guthrie emphasised the importance of participants reading the policy in detail as only a synopsis had been shared in the presentation and the feedback of the sector on the full document was vital to ensuring an effective Policy.

Ms Guthrie invited participants to begin the discussion by first looking at the Vision, Goals and Principles (question 2).

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.

Mrs Camille Needham, Jamaica Hotel and Tourist Association (JHTA), considered the vision statement simple and straightforward and clearly expressed.

Mr Kyle Mais, JHTA, noted that the vision served the intended purpose. He understood the need to protect the hydro-ecosystem. However, he was unclear about what constituted ecosystem services.

Gillian Guthrie outlined some ecosystem services such as water production, food security, water security, regulation of the climate, soil conservation, and provision of habitats for all types of species.

Kyle Mais advised that in view of the above explanation he considered the vision to the point.

Mrs Needham suggested some rewording to say, “efficiency and effectiveness in the maintenance of the ecosystem or the development of the ecosystem”. She questioned whether it was possible to do anything to further develop or rehabilitate ecosystems as, presumably, climate change and other environmental threats had impacted ecosystems. She suggested that there might have been a stage at which there was an optimal ecosystem for the maintenance of life. Nature continued to support life. Perhaps the vision could include wording to express more clearly the maintenance of an optimal ecosystem that would support a way of life that was sustainable.

Gillian Guthrie noted that Mrs Needham’s comments were very useful and would be taken on board. The purpose of the ecosystem was to provide services that sustained life through the provision of services such as clean air. Ms Guthrie suggested that Mrs Needham might be recommending a more pointed statement on the maintenance of the ecosystem. The team would look again at the wording to ensure every Jamaican would fully appreciate what was being communicated.

Mrs Needham added that it should be clear that all referred to human life, animals, and plants. Everything would be done to make life viable.

Gillian Guthrie reiterated that the comments would be taken on board and the team would see how they could further refine the language to achieve better and more comprehensive understanding.

She then turned the participants’ attention to the list of 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.

Ms Guthrie highlighted the concept of the precautionary approach which she explained did not require someone to have all the scientific information before embarking on an action if something required urgent attention.

Mrs Needham asked her to expand on the precautionary approach.

Ms Guthrie explained that if it were necessary to embark on an activity or initiative which had an element of risk, one did not have to wait to have complete scientific information before taking action. There had to be sufficient information to be able to take the action but did not need to wait to react.

Ms Guthrie then highlighted the “Polluter pays principle” which held that those who were responsible for any pollution of the environment had a significant role to assist in mitigating the threat to the environment.

As there were no comments or questions, Ms Guthrie then asked participants to examine the goals for any gaps.

She pointed out that goal 1 required the updating of the Watersheds Act which was enacted in 1963. She emphasised that the main piece of legislation governing watersheds was six decades old. Once the policy was approved, she said, the Act would be amended to respond to the Policy. One of the amendments would be the inclusion of definitions of relevant terms that were not currently in the legislation. For example, the Watersheds Act did not provide a definition for a watershed. She advised that the amended Act would also declare watershed zones of protection and provisions for compliance schemes and an increase in the level of fines would also be recommended as funds were required for the maintenance of the island’s watersheds. The amended act should also foster compliance which called for robust public education to facilitate increased awareness. The Act would be brought in alignment with the amended Policy.

She added that there was a proposal to look at resetting the boundaries of the 10 hydrological basins. She pointed out that the 26 WMUs had been allocated for management purposes/interventions. In revisiting the boundaries, the Water Resources Authority would consult with the Forestry Department and NEPA.

Ms Guthrie next highlighted the institutional framework with oversight for the Policy, pointing out that the Cabinet is the principal decision-making body of the GoJ. The lead agency with responsibility for the Policy was MEGJC, the ministry with responsibility for the environment. Under MEGJC was the Natural Resources Conservation Authority, which in law was the Watersheds Commission established under the Watersheds Protection Act. Under the commission two bodies would be set up – Watershed Protection Committee which would include key public sector agencies, private sector and civil society representatives. At the next level would be Watersheds Protection Sub-Committees established at the parish level.

Other key stakeholders were identified as the Ministry with responsibility for local government and all the municipal corporations which were responsible for governance at the community level. The Ministry with responsibility for water, the responsibility for which was now in MEGJC and also the Ministry of Agriculture.

The Ministry with responsibility for water now had in its purview the Integrated Water Resources Management Council which is chaired by the minister with responsibility for water, the Prime Minister who had delegated the responsibility to Senator the Honourable Matthew Samuda.

Ms Guthrie asked participants whether they could now determine if goal 1 was adequate for the task.

Mrs Needham noted that it appropriately covered the legislation as well as the institutional framework.

Goal 2 – Adequate and sustainable finance mechanisms are provided for improved watershed management.

Ms Guthrie observed that this was a big issue – having the financial resources to manage the island's watersheds. These she pointed out were large areas which supported lives and livelihoods. Ecosystem financing was required on an ongoing basis to support watersheds. Page 37 of the Policy document recommended:

1. The Minister with responsibility for the environment will be charged with coordinating the implementation of a Payments for Ecosystems Services scheme as developed under the Government of Jamaica (GoJ)/Inter-American Development Bank/Global Environment Facility Yallahs and Hope Watershed Area Project, or an appropriate alternate.
2. NRCA, Tourism Product Development Company (TPDCo), Mines and Geology Division and municipal corporations will make a contribution towards watershed management from the administrative fees associated with permits and licenses issued by these entities.
3. NEPA in collaboration with the Social Development Commission (SDC) will build the capacity of community groups within the watershed management unit to enable access to funds for sustainable livelihoods. The development of sustainable livelihoods is considered under Component 8 of the WAMM.

Mrs Needham suggested a change in wording to use effective watershed management rather than improve. She said it was difficult to comment on the issue of allocating a percentage of large construction projects to financing watershed management. In her opinion at the point of giving the licences, it should be determined whether the project would damage the watershed, in which case permission should not be given. However, she recognised that one had to balance the need for development against environmental conservation. She recommended that on giving permission it should be carefully stated how any damage would be costed.

Ms Guthrie noted that Mrs Needham's amendment would see the goal reading **Adequate and sustainable finance mechanisms are provided for effective watershed management.**

Ms Guthrie noted that the type of construction being referred to included highways, dams, housing, etc. She pointed participants to page 37 of the Policy which had a list of recommendations for funding streams for the protection of watersheds.

The options for funding to be explored include:

- i. Allocation of a percentage of the cost of major construction projects taking place in upper watershed areas (such as projects related to highways, reservoirs, dams and housing) for

- watershed protection purposes, including slope stabilization via the inclusion of a new provision under the NRCA Act.
- ii. In consultation with the relevant entities, the NWC would seek to allocate a percentage of water utility bills for conservation and rehabilitation activities for water resources and watersheds in critical areas.
 - iii. The National Irrigation Commission (NIC) would seek to allocate a percentage of their irrigation charges towards sustainable watershed management, including best agricultural practices.
 - iv. Support of the capitalization of the Forest Conservation Fund which could be used for watershed rehabilitation.
 - v. Allocation of a percentage of the fees collected by NEPA for permit applications for projects and programmes in upper watershed areas.
 - vi. Exploration and support of creative financing mechanisms through NGOs and CBOs, including the Water Fund proposed by the international NGO, The Nature Conservancy.
 - vii. Institution of a scheme of fiscal incentives to facilitate participation of the private sector, including landowners, in watershed management.
 - viii. Allocation of a percentage of the environmental levy for projects and programmes related to watershed management.

Ms Guthrie asked for reactions to the recommendations presented. Highlighting that there are 12 recommendations responding to Goal 2 in the draft Policy.

Mr Mais observed that all the information shared in the past two hours was overwhelming as, in the main, participants were not environmentalists. They, however, had environmentalists on their teams who could be asked to go through the document and share their comments with the MEGJC team.

Ms Guthrie accepted the recommendation and said she would share the document with Mrs Needham and Mr Mais who could then share it with their environmental committee.

Goal 3 addressed access to information and data to inform decision making including GIS-based decision making. The plan was to enhance the use of technology, utilising more innovative technology for monitoring watersheds. Ms Guthrie asked if anyone had any issues with the wording of goal 3.

Mrs Needham said she had no issues, and it was fine.

The focus of Goal 4 was awareness raising, sensitising Jamaicans as to the importance of all watersheds. Increased awareness would promote the participatory approach of communities. Ms Guthrie cited the finding by the Forestry Department that the majority of Jamaica's forested areas were held by private entities, hence, the private sector needed to be involved in the conversation. She also referred to the tree planting programme and adopt a hillside programme.

Mrs Needham concurred that goal 4 was very important.

Goal 5 tackled the big issue of sustainable land management. A major facet of land management was land tenure. Ms Guthrie advised that the Government was looking at an expanded land titling programme targeting the distribution of 20,000 titles in three years. It was important that all landowners appreciated the need to practice sustainable land management. Improper land use activities could contribute to infertility in soil.

The island was covered by development orders. These were available at NEPA and there was one for each parish. The Kingston and St Andrew and Pedro Keys development order was the latest to be completed. She noted that the Kingston and St Andrew landscape was changing. New development orders should include watershed protection zones so all parties would be aware of the activities allowed in particular areas. She noted that those were some of the elements of sustainable land management.

Ms Guthrie requested comments on the wording for goal 5.

Mrs Needham said she was fine with the wording for goal 5.

Ms Guthrie asked that participants go through the document and provide comments in writing as these would contribute to the finalisation of policy.

She asked if participants had any general questions on watershed management for the other presenters. There were none.

CLOSING REMARKS, Ms Gillian Guthrie

Ms Guthrie thanked members of the private sector for taking the time to join the consultation. Ms Guthrie noted that after the consultations were completed, the draft Policy would be revised and re-submitted to Cabinet for tabling in Parliament. Once approved it would become a public document and then we will proceed to amend the Watersheds Protection Act and any other piece of legislation included in the draft Policy.

She advised, further, that once the Watersheds Policy was completed the team would be undertaking the preparation of the Protected Areas Policy for Jamaica which would also benefit from the participation of the private sector.

She reiterated her thanks to participants on behalf of the Ministry, Senator the Honourable Matthew Samuda and the Honourable Audrey Sewell, Permanent Secretary in the MEGJC. The Ministry appreciated the effort taken to participate in the consultation. She reminded participants to reach out to the team with any comments or questions.