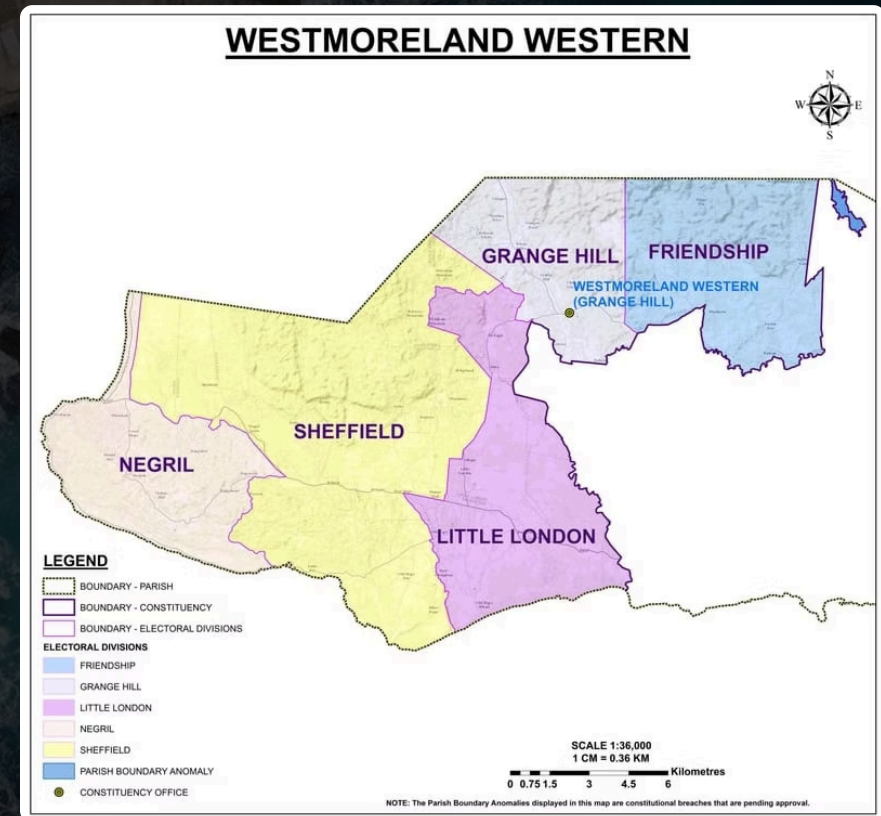


WATER SECURITY PLAN

GARFIELD JAMES



Western Westmoreland, home to the tourism hub of Negril, is facing a severe water crisis. Prolonged droughts, worsened by climate change, have led to significant water shortages affecting residents, farmers, and the tourism industry. Since March 2024, Negril hoteliers have spent over J\$200 million on trucked water—a 50% increase over regular costs—highlighting the urgency of the situation.

Introduction

Communities in the Negril, Sheffield, and Little London Divisions are especially hard hit, experiencing extreme water scarcity during Jamaica's dry season. Though the region is bordered by rivers and the Caribbean Sea, the crisis is intensified by rapid tourism development, aging infrastructure, limited storage capacity, and a shrinking supply of fresh water.

This Water Security Plan outlines a comprehensive, multi-pronged strategy combining infrastructure development, technological innovation, community engagement, and military support to secure reliable access to water for all, by protecting our water resources, strengthening our economy, and ensuring health and dignity for every resident.

Situational Analysis

Drought is more than a lack of rainfall—it is a complex challenge driven by climate, overuse, mismanagement, and poor planning. As prolonged dry spells become the norm, reservoirs dry up, rivers shrink, and aquifers are depleted faster than they can recharge. Meanwhile, water demand is rising across urban areas, agriculture, and tourism.

Without bold and innovative action, the traditional water sources will no longer be sufficient.

Objectives

- Improve and expand potable water distribution systems
- Promote the use of harvested rainwater and recycled grey water for non-potable uses
- Align development planning with sustainable water service provision
- Protect natural water sources, including watersheds, wells, and aquifers
- Offer incentives for water conservation technologies and systems



Water Demand and Supply Challenges



Tourism

Hotels face rising operational costs due to unreliable water supply.



Residents

Many communities receive water only once a week, forcing reliance on trucked or unsafe sources.



Agriculture

Farmers suffer reduced yields due to insufficient irrigation.

Existing Infrastructure and Efforts



Rainwater Harvesting

Implemented by the Rural Water Supply Limited (RWSL) in schools and communities.



Water Shops

Established by the government in drought-affected parishes, providing clean water.



Desalination

Under exploration to increase supply in coastal areas.

SWOT Analysis

Strengths

- Government and agency support (RWSL, NWC)
- Community involvement in conservation efforts

Opportunities

- New desalination and water purification technologies
- Public-private partnerships with tourism sector

Weaknesses

- Outdated infrastructure
- Limited storage capacity

Threats

- Increasing droughts due to climate change
- Rising costs impacting tourism and agriculture

Strategic Interventions

1. Portable, Power-Free Water Purification Systems

This intervention focuses on the implementation of a forward-thinking, chemical-free water purification project for Western Westmoreland. At the heart of this initiative is the introduction of advanced, lightweight military-grade water purification systems, capable of producing up to 37,000 gallons of potable water per day—sufficient to supply 20,000 people daily.

Key Features

- Chemical-Free Operation: Ensures safe drinking water without introducing additional chemicals
- Rapid Setup: The unit can be set up in under 45 minutes and operated by a single trained soldier
- Highly Mobile: Easily transportable on a HMMWV, Blackhawk helicopter, or even air-dropped into inaccessible areas
- Military Proven: Already deployed globally in support of military and humanitarian missions



THE MECO LIGHTWEIGHT WATER PURIFIER (LWP)

REQUEST MORE INFORMATION

Military Water Treatment Systems

Home > Military Water Treatment Systems

Role of the Jamaica Defence Force (JDF)

YouTube

GALMOBILE – Water Purification And Desalination System

GALMOBILE – is a Water Purification and Desalination System based on Polaris platform. in this MAGNIFICENT video you can see the easiest way to...

06:05

YouTube

Système de purification d'eau WTC 500 / 700 GT

Le nouveau système mobile de purification d'eau WTC 500 / 700 GT permet de purifier de l'eau par osmose inverse en retirant les particules, les...

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Deployment

Transport and install purification units across critical locations

Logistics & Support

Ensure swift delivery and re-deployment of units as conditions demand

Operation

Provide trained personnel to operate and maintain systems in the field

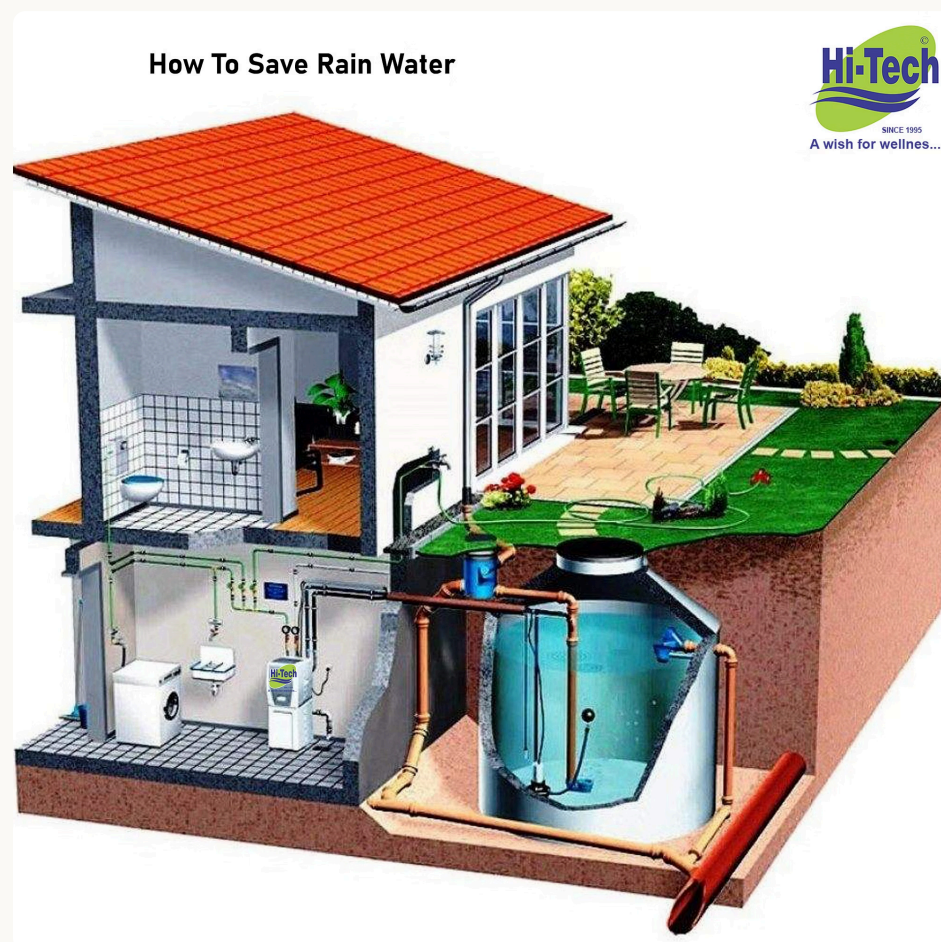
Security

Protect equipment and maintain operational zones in vulnerable communities

2. Expansion of Rainwater Harvesting

Community Systems

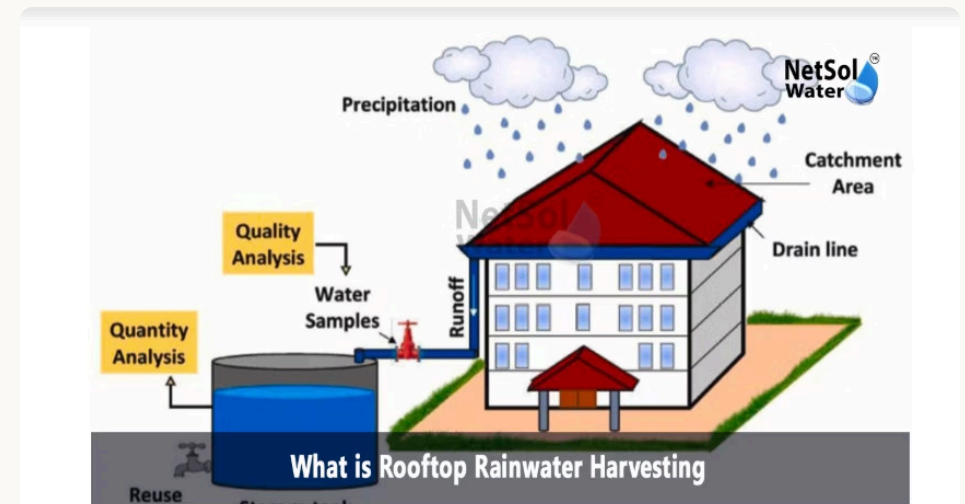
Install large rainwater harvesting tanks (up to 20,000 gallons) at schools, clinics, and community centers.



Household Systems

Provide incentives to homeowners for installing rooftop rainwater collection systems.

- Subsidized guttering and downpipes
- Technical assistance for installation



3. Water Shops and Community Tanks

Establish at least one water shop per division, each with a 16,000-gallon storage tank. Install 2,000-gallon tanks at strategic locations across communities for greater public access.



4. Water Conservation and Public Awareness



Education Campaigns

Promote water-saving practices across homes, farms, and businesses.



Regulations

Enforce standards requiring water-efficient fixtures in new developments.

5. Watershed Protection through Reforestation

Reforestation and afforestation are long-term, cost-effective investments in water security. By restoring the ecological integrity of watersheds, these strategies complement technological interventions like mobile purification systems and rainwater harvesting to create a holistic and resilient water plan.

Key Components

- Targeted Reforestation: Replanting trees in degraded forested areas—especially upper watershed regions
- Afforestation Initiatives: Establishing new forested zones in suitable non-forested or abandoned agricultural lands
- Watershed Mapping and Tree Zoning: Working with environmental agencies to map critical watersheds
- Rainwater Catchment Enhancement: Forested areas naturally slow water movement
- Soil and Riverbank Stabilization: Planting deep-rooted vegetation
- Community Agroforestry Models: Introducing integrated agroforestry in farming communities



Expected Outcomes

- Increased groundwater recharge and more reliable spring and river flows
- Decreased flooding, landslides, and sedimentation in water bodies
- Improved ecosystem services and biodiversity
- Greater community resilience to drought and climate change

6. Agricultural Water Management



Modern Irrigation

Encourage drip and micro-spray systems to cut water use and boost yields.



Training

Provide farmers with knowledge on water-saving and climate-resilient techniques.



Smart Practices

Introduce soil sensors, drought-tolerant crops, and cover cropping.

7. Construction of Brazilian Barraginhas (Micro Dams)



Barraginhas are small, low-cost dams that capture runoff and recharge groundwater. These can be built in sloped, erosion-prone areas.

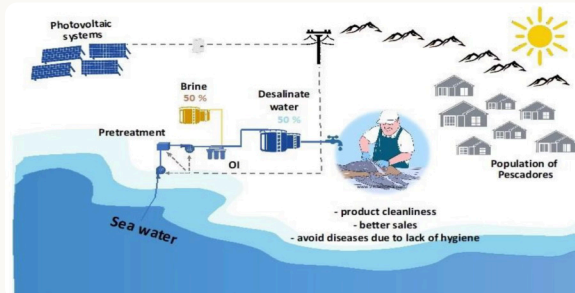
Role of the JDF:

- Deploy engineers and manpower for dam construction
- Collaborate with rural communities and agricultural agencies
- Use barraginhas as a part of national disaster preparedness and resilience strategy

8. Desalination and Natural Springs

Desalination Plants

- Feasibility Studies: Identify ideal coastal locations like Negril for pilot desalination plants
- Green Energy: Power systems using solar or wind to reduce environmental impact



Tapping Natural Springs

Install 5-inch pipelines from local freshwater springs to supply nearby communities at little to no cost.

- Identify and map all viable natural springs in the region
- Develop protection zones around spring sources
- Create gravity-fed distribution systems where possible



Implementation Framework



Short-Term (0–2 Years)

- Expand rainwater harvesting
- Deploy mobile purification units with JDF support
- Conduct public education campaigns
- Begin construction of micro dams



Medium-Term (2–5 Years)

- Develop small-scale desalination plants
- Upgrade water infrastructure
- Roll out household tank incentive programs



Long-Term (5+ Years)

- Achieve sustainable water supply resilience
- Fully integrate smart water management practices across all sectors

