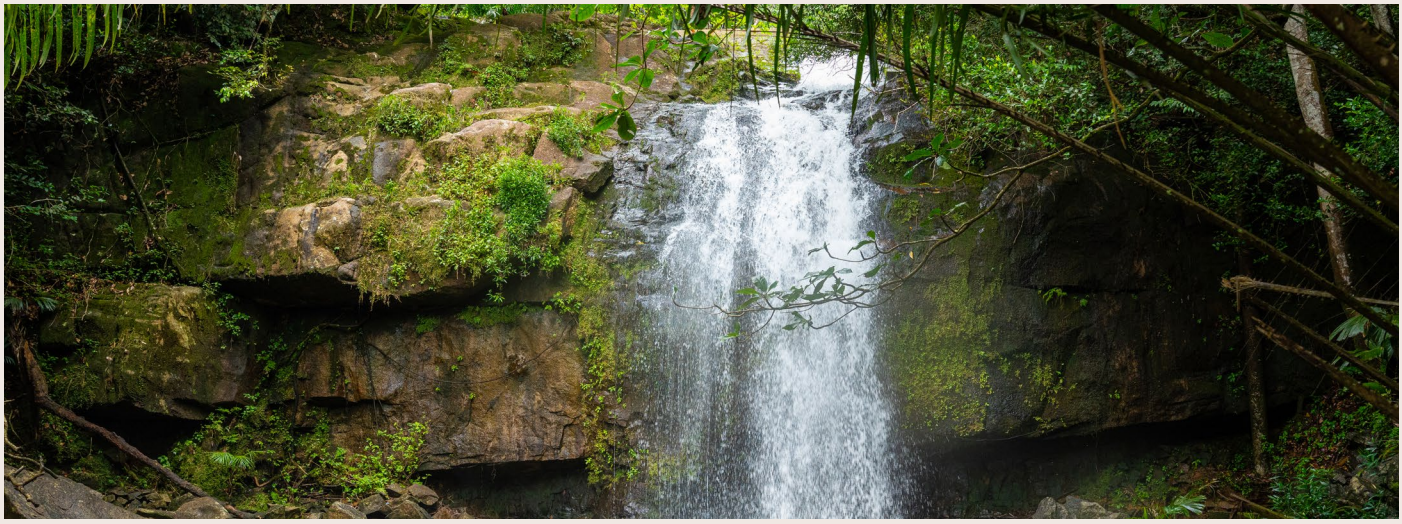
Prepared by Gaea Seychelles with input from the Ministry of Health, the Public Utility Corporation and the Ministry of Environment, Climate, Energy and Natural Resources.

POLICY BRIEF 7

The Lifeblood of the Granitic Islands

Securing national water security through biological integrity



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Executive Summary

Freshwater is the most critical resource for the Seychelles. Every drop of water that reaches a household tap or a farmer's field passes through a living ecosystem. When we degrade our rivers, we degrade our most precious resource. This brief highlights how biological degradation of rivers directly threatens the safety and availability of the national water supply. It outlines strategic interventions to transition to active, field-level enforcement of catchment protections.

The crisis:

Rivers are not just pipes; they are living filters. When we lose macroinvertebrates, we lose the free cleaning service they provide.

Data insight:

Poor river health scores downstream correlate with high nutrient loads that increase the cost of water treatment.

1. THE HUMAN AND ECONOMIC CONNECTION

Freshwater ecosystems are the silent engines of the Seychelles. They do more than just carry water; they provide ecosystem services that are worth millions of Rupees:

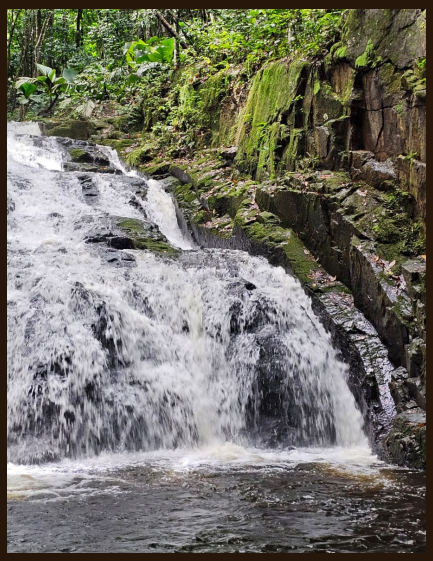
- Natural filtration: Healthy riverbeds, filled with diverse macroinvertebrates, break down organic matter and filter pollutants for free.
- Groundwater recharge: Natural banks allow water to seep into the ground, replenishing the aquifers we rely on during the dry season.
- Agricultural support: Clean river water is essential for the livestock and crop production that ensures national food security.

2. THE GROWING THREAT: WHY THE LIFEBLOOD IS THINNING

We are currently bleeding our freshwater resources through three main avenues:

- Chemical overload: Excessive nitrates and phosphates from failing septic tanks and fertilisers from farms force the Public Utilities Corporation (PUC) to spend more on chemical purification or abandon water abstraction sites.
- Physical hardening: Replacing natural banks with concrete stops water from recharging our ground reserves, leading to water stress even after heavy rains.
- Biological collapse: The loss of sensitive species like Mayflies means the river has lost its ability to self-clean, leaving it stagnant and prone to algal blooms.

Protect the source



Fact:
Healthy rivers reduce the need for expensive chemical treatment.

Action:
Strictly enforce upper catchments from all development to ensure 'Clean Water for All.'

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Priority recommendations

- Legally mandate biological standards: Move beyond simple pH tests. Use Mini Stream Assessment (miniSASS) to ensure that water sources meet a natural or good ecological category.
- Incentivise riparian restoration: Launch a national program to restore freshwater ecosystems prioritising rivers that feed into major water treatment plants or within critical water catchments.
- Public health infrastructure integration: Legally recognise freshwater catchments as critical public health infrastructure. Link river health data directly to the Ministry of Health as an early-warning system for waterborne stressors and microbiological pathogens.
- Strengthen EIA compliance and Inter-Agency oversight in protected catchment zones.
- Enhance surveillance and active enforcement at PUC water barrages, including joint weekend patrols with the Police. Deploy clear legislative warning signage to deter and penalise prohibited social activities (e.g. bathing, picnicking).
- Rigorous prosecution and maximum statutory penalties for illegal dumping in river sources as prescribed under the EPA, 2016. Partner with LWMA for surveillance in high-risk catchment areas to secure the necessary evidence for maximum statutory fines (up to SCR 1 M).

Damaging agricultural practices



The Problem:

Runoff from farms is poisoning the very water farmers need for their livelihoods.

The Solution:

Provide subsidies for farmers who implement nature-based agriculture including riparian buffers (planting native trees along the water's edge) to catch sediment and nutrients while blocking the clearing of native upper-catchment mountain forests.

The Outcome:

Sustainable food systems and healthier downstream communities.

Strategic Call-to-Action



The Cost Of Degradation

The Problem:

As rivers lose their biological filtration capacity, the cost of treating water for public consumption rises. These must include clearly mapped protected circles around public drinking water sources and commercial bottled water abstraction points.

The Solution:

Strictly enforce 'Source Protection Zones' where no development or land clearing is permitted within critical water catchment.

The Outcome:

Lower utility costs and safer drinking water for every Seychellois household.

Climate-Resilient Spatial Planning



The Problem:

Unplanned infrastructure placement, such as positioning temporary workers' accommodation or high-occupancy developments within water catchments, creates acute sewage and runoff vulnerabilities.

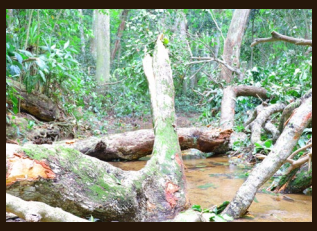
The Solution:

Mandate water source protection within national land-use planning frameworks under the Physical Planning Act 2021. The Planning Authority must automatically deny structural permits for major or temporary developments inside active catchments.

The Outcome:

Risk-free zoning that insulates the national grid from biological pollution events.

National Catchment Management Framework



The Problem:

Disconnected monitoring between environmental, agricultural, health and utility agencies leave the state reactive rather than proactive when pollution strikes.

The Solution:

Establish an integrated Catchment Management Plan alongside a multi-agency freshwater monitoring programme. This system must log physical, chemical, biological and microbiological water quality data in real-time.

The Outcome:

A robust data matrix ensuring cross-ministerial compliance and rapid response to ecosystem hazards.

About Gaea Seychelles

Gaea Seychelles is a research and citizen science-based organisation launched in 2018. Its mission is to empower and mobilise actions by local actors to undertake impactful environmental community-based projects which creates significant and sustained change for the betterment of people's lives and their environment.

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