Prepared by Gaea Seychelles with input from the Ministry of Environment, Climate, Energy and Natural Resources, the Planning Authority and the National Disaster Risk Management Division.

POLICY BRIEF 8

Rivers on the Edge

Building climate resilience through nature-based river infrastructure



Executive summary

Climate change is pushing the Seychelles' freshwater systems to a breaking point. Erratic rainfall characterised by intense floods followed by prolonged drought, is overwhelming traditional 'grey' infrastructure. This brief argues that our rivers are our first line of defence. By transitioning to Ecosystem-based Adaptation (EbA), we can restore the natural sponge capacity of our waterways, protecting lives, property, and the national economy from climate extremes.

The climate crisis: A double-edged sword

THE FLOOD THREAT:
Concrete-lined channels accelerate storm runoff, turning rivers into high-speed conduits that cause devastating downstream flooding and Ridge-to-Reef siltation of our coral reefs.

THE DROUGHT THREAT:
Degraded, unshaded riverbanks lead to rapid evaporation and higher water temperatures. During dry spells, these hardened rivers fail to recharge groundwater, threatening national water security.

The 'Drought and Heat' focus



'A lifeblood running dry: Without the protection of a forested riparian buffer, our rivers are defenceless against rising temperatures. High thermal stress and rapid evaporation are pushing our freshwater ecosystems and our national water security to the absolute edge.'

The Solution:

Restore riparian shade to keep water temperatures within a liveable range for our native sentinels.

Prepared by Gaea Seychelles with input from the Ministry of Environment, Climate, Energy and Natural Resources, the Planning Authority and the National Disaster Risk Management Division.

Priority recommendations

SHIFT TO ECOSYSTEM-BASED INFRASTRUCTURE (EbA)

Action: Mandate bio-engineering over concrete for all new river modifications.
Why: Natural banks slow down floodwaters and allow ground absorption, providing natural flood insurance.

PROTECT THE RIPARIAN SHIELD

Action: Strictly enforce a 5-meter 'No-Clear' buffer zone along all riverbanks.
Why: Trees provide the shade necessary to prevent evaporation and keep water cool during droughts.

STANDARDISE CLIMATE-READY MONITORING

Action: Adopt Mini Stream Assessment (miniSASS) and Riparian Health Audits (RHA) as national benchmarks for climate resilience.
Why: Biological health is the most reliable indicator of an ecosystem's ability to bounce back after a storm or drought.

Strategic implementation framework

Timeline	Action	Goal
Year 1	Launch National EbA design standards.	Stop the spread of grey infrastructure.
Year 2	Pilot 3 river restoration sites.	Demonstrate flood reduction via NbS or EbA.
Year 3+	Embed EbA into National building codes.	Ensure all development is climate-proof.

Conclusion: The path forward

We can no longer afford to treat our rivers as simple drains. They are the circulatory system of our islands. By investing in Ecosystem-based Adaptation today, we protect the Seychelles from the climate uncertainties of tomorrow.

Policy Ask:

Approval to integrate mandatory EbA screening into all river-adjacent development permits by 2030.

The 'Ridge-to-Reef' connection



'The cost of upstream neglect: When we strip riverbanks of their natural vegetation, the first rain washes our soil into the sea. This siltation chokes our coral reefs, demonstrating that river health is the foundation of our Blue Economy and tourism resilience.'

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.

For more information:
www.gaeaseychelles.sc
gaea@gaeaseychelles.sc
+248 2 50 27 84
Centre for Environment and Education, Anse Royale, Seychelles