ENGLISH EXECUTIVE SUMMARY

Sustainable Tourism Development in Small Island Destinations

Paros as a Case Study in an International Comparative Framework

Author and editor: Vasilis Marangozis

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Executive Summary

The study in a concise and accessible form

Paros is a highly successful tourism destination. This success has generated income, businesses, jobs, international recognition and new opportunities for the island. At the same time, however, it has increased pressure on water resources, utility networks, wastewater and solid waste management, housing, mobility, land, public services and the capacity of local government itself to monitor and manage change.

The question addressed by this study is not whether tourism is "good" or "bad", nor whether Paros must choose between development and protection. The real question is more specific:

> **How can Paros preserve the economic and social value of tourism without allowing additional development to weaken the natural resources, infrastructure, housing, public services and qualities of place on which its tourism success ultimately depends?**

The answer is not an arbitrary number of visitors or bed places. It is a system for timely measurement and public decision-making. Before a major new development, an expensive project or a broad restriction is approved, the actual load, available margin of safety, full cost, competent authority, implementation capacity and consequences for different social and economic groups must be known.

The central proposal of the study is a **balanced and adaptive programme for 2026-2035**. It combines maintenance and necessary infrastructure, loss reduction, management of peak periods, protection of resources vulnerable to irreversible loss, housing for essential staff, reliable data, limited pilot programmes and predefined rules for changing course. It does not approve every measure in advance. It distinguishes between measures that should begin immediately, those that first require evidence, and those that must remain locked until their need, legality and proportionality have been demonstrated.

What we already know about Paros

The available official picture is incomplete, but strong enough to rule out inaction. The figures below do not by themselves describe the island's sustainability. They do, however, show the scale and pace of change, which must now be measured as a single system.

Field	Verified figure	Meaning in plain language
Permanent population	14,520 residents in 2021	Paros has a substantial and growing year-round community
Housing	16,152 conventional dwellings, of which 8,523 were holiday or secondary dwellings	a large share of the stock operates seasonally and cannot be understood from the permanent population alone
Hotel base	141 establishments and 7,510 bed places in 2025	this is the verified hotel capacity, not the total stock of active accommodation
Air passenger movements	361,884 passenger movements in 2024	the air gateway handles a large and strongly seasonal flow
Port passenger	2,213,917 embarkations and	the main gateway handles a flow many times larger than the

Field	Verified figure	Meaning in plain language
movements	disembarkations in 2024	permanent population, without every movement representing a different visitor
Water consumption	2,549,388 m³ in 2025	recorded annual consumption increased by 82.27% from 2011
New building floor area	545,297 m² during 2011-2025	permitted construction clearly shifted in scale after 2020
New dwellings	4,055 during 2011-2025	every new building creates long-term obligations for networks and services, regardless of its eventual use
Wastewater	three facilities with a published nominal capacity of 33,000 population equivalents	nominal capacity alone does not demonstrate operational adequacy at peak conditions or resilience in the event of failure
Solid waste	more than 11,000 tonnes as early as 2019	current adequacy cannot be assessed without an updated balance of mass, seasonality, recovery and final residual waste

Detailed sources, definitions and necessary qualifications are presented in Chapters 4-6 and Technical Appendix A. The study does not convert passenger movements into unique tourists, building permits into completed tourism establishments, or a facility's nominal capacity into a demonstrated margin of safety.

The core problem is not only scale, but simultaneous peak pressure

An island may show satisfactory annual totals yet face serious operational problems for several hours or days. Water, wastewater, solid waste, electricity, mobility, healthcare and civil protection are often under pressure at the same time. A failure or an extreme event can also affect more than one system simultaneously.

For example, a hot and dry week can raise water consumption and electricity demand. If, at the same time, a major desalination unit becomes unavailable, a wildfire occurs, ferry services are disrupted or essential staff are absent, the nominal capacity of each individual facility is not enough to describe the island's actual resilience.

For this reason, the study proposes synchronised measurement of peak conditions. Paros needs to know, for the same day and operational zone:

1. how many people are actually present on the island,
2. how much water is produced, stored and consumed,
3. the load received by wastewater treatment facilities,
4. how much solid waste is collected and where it ultimately goes,
5. how many vehicles are moving and where congestion occurs,
6. the energy load of critical functions,
7. which staff and contingency resources are actually available.

Without this common operational picture, public authorities risk solving one problem by shifting the pressure to the next.

Lessons from international experience

The study examines Formentera, Menorca, Gozo, Lord Howe Island, Boracay and recent regulatory developments in the Canary and Balearic Islands. None of these cases is to be copied wholesale in Paros.

Menorca contributes the need to measure the actual daily population rather than arrivals or permanent residents alone. **Formentera** shows the importance of control at a genuine point of entry, combined with exemptions, transport alternatives and annual review. **Gozo** contributes the logic of a diversified water portfolio, maintenance and redundancy. **Lord Howe** shows that a limit works only when embedded in a coherent system of planning, licensing and enforcement. **Boracay** shows how costly and socially painful restoration becomes once routine compliance has already failed.

The shared international lesson is simple: **announcing a limit or a project is not enough**. Each policy needs a measurable problem, lawful authority, administrative capacity, a viable alternative, monitoring of unintended consequences and the ability to be revised.

The study's strategic choice

Five pathways were examined for 2026-2035:

1. continuation of current trends and projects already under way,
2. primary emphasis on expanding technical capacity,
3. primary emphasis on managing demand and peak pressures,
4. a balanced and adaptive portfolio,
5. higher local value per unit of environmental and social pressure.

The study does not treat these five options as equally sound. The comparatively most resilient direction is the **fourth scenario**, strengthened by the economic objective of the fifth.

Simply continuing current trends is not neutral, because construction, consumption and land use keep changing while decisions are postponed. New infrastructure is often necessary, but cannot by itself resolve housing, land, traffic, employment or induced demand. Restrictions and pricing can reduce peaks, but become unfair or unenforceable without adequate infrastructure, oversight and viable alternatives. Higher visitor spending does not guarantee lower consumption, better employment or greater local value.

The proposed direction combines:

- immediate compliance in water, wastewater, solid waste, safety and accessibility,
- maintenance, loss reduction and genuine operational redundancy,
- selective and modular investment rather than automatic over-sizing,
- protection of land, coasts and water bodies before irreversible loss,
- management of peak pressures where they are demonstrated,
- housing and continuity for essential staff,
- greater local value and better employment without a proportional increase in pressure,
- small pilots that can be corrected or stopped,

- public data, clear responsibility and independent evaluation.

What needs to be done, and when

Implementation does not begin with a major new project or a universal restriction. It begins with shared responsibility, review of current operations and measurement of actual peak conditions.

Period	Key decisions and actions
First 100 days	approve an integrated programme; designate leads and deputies; inventory critical data and projects; review legal responsibilities; make an initial record of staffing and operational gaps; publish a timetable
2026-2027	establish the first synchronised baseline for presence, water, wastewater, solid waste, mobility, energy and incidents; complete a water balance and N-1 contingency test; update continuity plans; inventory active accommodation, land and housing
2027-2029	maintenance and no-regret measures; reduce leakage; improve quality and monitoring; strengthen separate waste collection; provide housing for essential staff; improve public transport; prepare limited pilots
2028-2030	implement and evaluate no more than two demanding pilots at the same time, each with a baseline, duration, cost, alternative, social exemptions, displacement check and stop rule
2030	conduct an independent strategic review and decide whether to scale, modify, retain or terminate each measure
2031-2035	adopt permanent investments or regulations only after need, safe operation, administrative capacity, funding and equitable distribution have been confirmed

Some actions should not wait for further research. Drinking-water quality, lawful operation of wastewater and solid waste systems, safety, accessibility and civil protection are continuing public obligations. Conversely, an island-wide ceiling on bed places, a vehicle quota, a new local tax or a major irreversible investment should not be approved simply because it sounds decisive. Such measures require a specific legal basis, complete data, proportionality, affordable cost and a clearly responsible implementing authority.

Who should do what

The study does not propose a new super-agency to replace existing authorities. It proposes a small programme coordination unit to connect decisions, while each body retains its statutory responsibilities.

Body or group	Primary role
Municipality of Paros	political mandate, coordination, budgeting, spatial and social evidence, participation and public accountability within its statutory powers
DEYA Paros (Municipal Water and Sewerage Utility)	water supply, water balance, quality, losses, wastewater, actual capacity, maintenance and N-1 contingency plans
Municipal Port Fund and transport providers	gateway data, port operations, traffic, parking, public transport and safe access

Body or group	Primary role
Solid Waste Management Authority (FODSA) and competent services	integrated solid waste balance, prevention, net recovery, residual waste, cost and lawful final management
Regional and central government authorities	spatial planning, environmental, transport, enforcement, funding and civil protection responsibilities that do not belong to the Municipality
Businesses and professional bodies	lawful operation, provision of appropriate aggregated data, efficiency, local procurement, job quality and participation in evaluated pilots
Residents, workers and civic organisations	evidence-based participation, reporting of everyday impacts, distributional assessment and scrutiny of public accountability
Scientific and independent evaluators	review of methods, quality, outcomes, unintended consequences and reproducibility

Implementation depends on actual staff, time and an operating budget. Administrative capacity is therefore treated as part of the island's carrying capacity. A rule that cannot be enforced, or a data system that cannot be maintained, is not a complete policy.

The cost of inaction

Sustainability is often presented as a cost that constrains growth. This picture is incomplete. Leaks, failures, emergency supply, pollution, delayed compliance, time lost in travel, inability to house staff, and infrastructure that cannot operate or merely shifts the problem elsewhere also impose costs.

The study does not assign an arbitrary monetary value to a future crisis in Paros. It does, however, propose that every major decision should calculate:

- the full cost of construction, operation, energy, staffing, maintenance and renewal,
- the potential damage from interruption of water, wastewater, transport or another critical service,
- the income lost by businesses and workers during the disruption,
- the cost of emergency supply and environmental restoration,
- how the cost is distributed across society and the ability of different groups to adapt,
- the time and cost required to restore normal operations.

The international example of Boracay shows that delayed enforcement can lead to much costlier and socially harsher emergency remediation. The lesson for Paros is not that a similar collapse is imminent. It is that preventive maintenance, timely compliance and gradual adaptation are generally safer than waiting until the available choices narrow to abrupt bans or emergency expenditure.

What the study does not claim

For the study to be used responsibly, it is equally important to be clear about what it does not demonstrate:

- It does not calculate a final "maximum number" of people, vehicles or bed places for Paros as a whole.

- It does not claim that every new building is tourism-related or that every tourism investment is harmful.
- It does not treat a new desalination or wastewater facility as an automatic licence for additional development.
- It does not equate higher spending per visitor with sustainability.
- It does not recommend a blanket ban, general closure or permanent restriction without evidence and a legal basis.
- It does not present international cases as ready-made solutions to be copied.
- It does not replace the engineering study, legal opinion or democratic decision required for each specific action.

Uncertainty is not concealed. It is converted into a specific obligation to measure and into a rule defining what can be done now and what must wait.

How the study can be used

This summary allows the non-specialist reader to understand the problem, the strongest findings and the proposed direction quickly. It does not replace the full study.

A national or local government body can use the study to organise data, responsibilities, priorities and funding decisions. A scientific or technical body can review the methods, fill empirical gaps and undertake specialised studies. A civic or professional organisation can use the common vocabulary and indicators for evidence-based dialogue. A resident or worker can see how everyday experience connects to measurable operations and public decisions.

The full study is currently available in Greek. Within it, the **Detailed Executive Summary** offers a fuller but still condensed account. Chapters 1-12 develop the scientific and policy analysis. The Technical Appendices specify what needs to be measured, how implementation can proceed, which constraints apply and how results should be evaluated.

The study's final message is that Paros does not need to choose between its economic success and preservation of the place that makes that success possible. It needs to move from fragmented reaction to a stable system of prevention, measurement, maintenance, fair decision-making and timely course correction. The earlier this transition is made, the more options remain available and the lower the likelihood that costly, abrupt and socially more difficult interventions will be required later.