

Climathon

Greece-Japan islands

Climathon Greece-Japan 2022

📅 28-30 September 2022

📍 Athens University of Economics and Business,
Room Δ4, Athens, Greece (4th floor of Derigni wing)

A 48-hour Climathon on Sustainable islands in Greece and Japan

Climathon is a global community of local changemakers working together to help our cities, towns and regions achieve net-zero emissions and systems change.



Organizers





The Challenge:

"Enhancing sustainability in the face of change in islands of Greece and Japan"

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Demographic, socioeconomic and environmental change in islands of Greece and Japan

Islands are social-ecological systems with unique characteristics shaped by their often-extreme remoteness from mainland areas. Many islands host unique and highly endemic ecosystems that have evolved over millennia. Similarly, many islands are homes to very distinct cultures and social systems, characterised by local communities that have strong values and sense of place. Indeed, islands are considered hotspots of biocultural diversity.

However, islands also face very pronounced demographic, socioeconomic and environmental change that affects their characteristics, and gives rise to very interconnected sustainability challenges. For example, many islands experience increasingly shrinking and ageing populations. At the same time due to their remoteness and low priority within national policies they receive low budget allocation that affects the wellbeing of their residents. Their fragile ecosystems face increasing pressures from human activities and a series of environmental pressures ranging from climate change to marine pollution and habitat degradation. In fact, islands are expected to face disproportionate effects from climate change that will affect their demographic, social, economic and ecological components.

Very diverse technical, economic, and institutional interventions are enacted to prevent, mitigate or adapt these negative changes. However, in some cases these solutions give rise to other sustainability challenges on their own right. For example, tourism interventions enacted to revitalize the local communities can have profound negative sustainability outcomes ranging from ecosystem degradation to loss of culture. Thus, islands not only face a series of sustainability challenges but are also the targets of interventions that have counter-productive results.

The above situation is very visible in island nations such as Greece and Japan that host hundreds of small, inhabited islands.

If we are to preserve the unique biocultural characteristics of such islands it is imperative to develop interventions seeking to enhance island sustainability in the face of change without having adverse effects.



Major sustainability challenges in Japanese islands

Small islands in Japan experience very diverse and often interconnected sustainability challenges. The mechanisms of how some of these challenges unfold, and their severity, depends between islands. For example, it can be due to their location, climate, demographic structure, and environmental context. However, such challenges tend to be present in some form in practically all small Japanese islands.

By small Japanese islands we define inhabited islands outside of the major islands of Hokkaido, Honshu, Kyushu, and Shikoku. These include, among others, islands in the island complexes of the Ryukyus, Osumi, Seto inland sea, Izu, Ogasawara, Goto, Okinoshima, as well as larger individual islands such as Sado and Tsushima.

On the socioeconomic end of the spectrum, most small Japanese islands experience the rapid shrinking and ageing of their population, at rates usually higher to the national patterns. This creates constraints in providing important social services such as quality education to the remaining youth or health services to the elderly. Such demographic changes often contribute to the transformation of local economies and even the loss of the economic competitiveness of smaller islands. For example, some vibrant economic activities of the past have been declining (e.g., fishing), while new activities have been emerging (e.g. tourism).

Similarly, demographic change has been affecting many of the unique island traditions and practices, whether related to local livelihoods (e.g. low impact fishing using local knowledge) or culture (e.g. loss of unique cultural practices). Several of these challenges have been reinforced in many small islands on the aftermath of the COVID-19 pandemic.

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On the environmental end of the spectrum, many islands are experiencing more strongly the impact of climate change. This is manifesting particularly through the increased severity and intensity of typhoons (mainly in the southern and eastern islands) and snowstorms (mainly in the western and northern islands). Many of the effort to guard against such natural hazards (as well earthquakes and tsunamis) or revitalize local economies (e.g., through tourism, mariculture) have caused profound changes in coasts through their concretization for coastal defences and port development.

On many occasions this has caused the loss and degradation of critical habitats such as reefs, seagrass beds, coastal forests, or mudflats. This has had negative effects to the rich local biodiversity and the benefits it provides to local communities through ecosystem services. Similarly changes in fishing practices and the adoption of more industrial fishing models has led to the overexploitation of some marine species.

Collectively these changes culminate in a very interconnected set of sustainability challenges, for which there is a need to find solutions.



Major sustainability challenges in Greek islands

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The Greek territory is made up of about 3053 islands, which make about 20% of the country's 132,000 km² land surface. Approximately, 85% of the national population, 80% of industrial activity, 90% of touristic activity, and the totality of fishing and fish farming are all located within a zone of 50 km inshore, whereas 33% of the total population is concentrated within a coastal zone of 1-2 km inshore¹.

Greek islands have long experienced disparities brought on by their isolation, including a great distance from the mainland, poor transportation options, a scarcity of commodities, seasonality in social and economic activity, and susceptibility to natural threats.

The destabilization of the demographic and social landscape is a major change facing Greek islands. Many islands experience one of two demographic changes: either population ageing, which is more pronounced and causes many islands to become desolate, or population explosion brought on by immigrants rather than organic population increase. Both cause many social challenges. For example, the former rural population is often concentrated in the coastal and urban districts, causing spatial and economic antagonism to the abandoned rural hinterland, which results in a decrease in the rural population of the big and mountainous islands.

In the economic sphere, there is a disruption of the local activity and fabric that leads to a reduction in the production base, particularly in the primary sector. This is a result of the economy's transition to an opportunistic, seasonal model that is mostly reliant on travel and mass tourism.

Extreme temperatures and rains will occur more frequently, as a result of global warming. The number of days exceeding 35°C (also known as "heat wave days") is expected to rise by roughly 10 days per year for some Greek islands, between 2021 and 2050. Since 1900, sea levels have risen by around 20 centimetres worldwide², with high rates also observed in many Greek islands. At the same time fishing stocks are declining due to overfishing.

The development and operation of tourism infrastructure causes multiple challenges related to resource overexploitation, conflicting land uses, multiplexing, coastal development, and the degradation and pollution of an especially sensitive environment. The existing water scarcity is made worse by higher tourist influxes in the summer, with the latter having further effects on waste management and rubbish output. Another challenge are energy shortages and insecurity due to the dependency on the mainland for energy needs, including the import of fossil fuels at a high prices.

These collectively put additional pressure on the survival of the Greek islands. However, islanders' only source of income may come from tourism, which creates several additional sustainability trade-offs for Greek islands.



¹ Gavalas, Minas. "Severe Weather: The New Challenge for the Planning of Greek Islands." Proceedings. Vol. 2. No. 11. MDPI AG, 2018.

² https://stopclimatechange.net/fileadmin/content/documents/international-climate-discussions/Les_impacts_du_changement_Anglais_imp.pdf

Common challenges

According to the IPCC 2018 Report, if we do not get into a more sustainable path by 2030, the risk of droughts, floods, extreme heat, food insecurity and poverty for hundreds of millions of people, will significantly increase. The only way to avoid the unprecedented changes of the environment and socioeconomic system is implementing Sustainable Development in all three domains: economic, social and environmental. Economic and social growth is not a feasible path without sustaining the ability of natural systems to provide the natural resources and ecosystem services, upon which the economy and society depend.

The aim of this Symposium is to identify the common sustainability challenges facing both Greek and Japanese islands in order to provide realistic solutions towards a sustainable transition.

Islands, as more exposed to natural disasters, will have to face the adverse impacts of climate change and hence, their survival should be a priority. Japan as well as Greece are composed of hundreds of inhabited islands, which have both cultural and economic value (tourist attraction). Innovative solutions integrated in a wholistic transformation pathway need to be identified and implemented rapidly. This synergy could be the initial step of that transition, as the two countries, could share their experiences through keynote speeches, case-studies and workshops taking place in a commonly organized event towards Island sustainability: challenges and solutions.

Japan and Greece are both island nations, containing hundreds of islands of different sizes and populations. Islands within each country have highly varied ecosystems and cultural characteristics and vulnerability to environmental, socioeconomic and environmental change.

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Some of the common challenges, faced by both countries are the overfishing, ageing population, climate change impacts on biodiversity and also the goal of becoming totally sustainable and energy autonomous.

However even though some of the changes such as vulnerability to climate change are similar, some of the underlying mechanisms might differ. For example, islands in Japan are expected to face increase climatic threats related to storms, while islands in Greece from droughts. Also, the differences between the existing infrastructure in both countries, can enable different reaction schemes. For instance, Japanese islands are characterized by strong infrastructure associated with externalities on social cohesion, while most of the Greek islands lack the basic infrastructure such as roads.

At the same time the solution and implementation capacities are quite different in the two countries. For example, Greece has a decades long experience with tourism as a means of local economic development. On the other hand, in Japan increasingly very advanced technical solutions are increasingly utilized to enhance the self-sufficiency of the islands. This means that despite their similarities the two countries have unique characteristics and experiences that can allow for cross-learning, both in terms how to understand the multiple effects of the different changes, as well as how to design solutions that can enhance the sustainability of local communities and ecosystems.



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Each team will be asked to either propose:

- (a) a unique solution to a single small island in Greece or Japan if it targets a very specific local issue or reflects a unique local context, or
- (b) a solution with broader applicability in multiple islands of Greece or Japan if it targets a more generic issue.

Indicatively, teams can suggest solutions on:

- How can islands become self-sufficient? Which technologies/infrastructures are needed?
- How to enhance the economic competitiveness of islands in a sustainable manner? What support is needed from the Government, Private sector or other stakeholders?
- How can tourism become more sustainable? Are there any existing initiatives? How could they be directed in supporting the island(s) of your choice?
- What is needed to "convince" younger people to remain on islands? Which opportunities could be identified?

Each team is expected to develop a 3-5 min presentation of their proposed plan that will be given on Friday 30 September.
The best teams will receive small prizes

Teams can consult and receive feedback from the Climathon mentors during the morning of Friday 30 September. .

