INDIGO CIVILIZATION

FAQs

What is Indigo Civilization?

Indigo Civilization is a French non-profit and public-interest organisation, founded in 2023. It structures an international ecosystem of multidisciplinary skills necessary for the design and testing of sustainable adaptation solutions for territories threatened by rising water levels.

Its mission is to demonstrate that it is possible to adapt to climate change and rising sea levels without fighting or fleeing the sea. Its ambition is to initiate a new form of symbiotic collaboration with aquatic environments, in order to transform current and future constraints into opportunities.

Indigo Civilization is working on modelling and experimenting with a long-term symbiotic adaptation solution. Its Smart Open-sea Ecosystem concept aims to bring together modular, floating, multifunctional and biophilic infrastructures, operating beyond the coasts to mitigate anthropogenic pressures on these ecosystems that are often fragile or even saturated.

Indigo Civilization federates and leads an international network of multidisciplinary expertise to co-construct, experiment and validate viable and adaptable models. From ideation to operational execution, Indigo Civilization ensures the interests and buy-in of all stakeholders: investors, public authorities, local community and biodiversity.

Its transdisciplinary experimental methodology combines in-depth state-of-the-art, oceanic foresight, local experimentation, close cooperation between public and private actors, and international collaboration:

- Structuring territorial studies and modelling.
- Implement and interact technological, technical and social building blocks: renewable marine energies, housing, marine permaculture, regenerative architecture, circular economy, governance and insurance, mesology, economic engineering, sustainable tourism.
- Develop pilots and demonstrators in France and abroad.
- Develop replicable models, including for resource-limited settings.

Why is Indigo Civilization considering its concept, offshore, beyond the coast?

Given the challenges ahead, consequences of climate change, humanity will need the Ocean to meet its needs, food and energy in particular. This inevitable development of the blue economy presents significant economic and ecological risks. How can we relearn to work in symbiosis with the Ocean, for the benefit of all living beings? How can we reconcile economic development and socio-cultural resilience through a biophilic and integrated blue economy?

As coasts are very often saturated and present many demographic, social, economic and ecological conflicts of interest, it seems wise to us to move away from them, whether a few hundred metres or a few kilometres depending on the context.

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Is the objective of Indigo Civilization to make people live at sea?

Peoples around the world have learned to live on water: the Bajau and the Moken in Southeast Asia, the Sama-Bajau in East Africa, the Malaita people in Oceania, the Uros in South America, the Venetians from the 5th century, or more recently, the Dutch in Europe. These populations have often settled on the water to escape environmental threats or invasions. They have adapted brilliantly given the low-tech solutions available to build resilient aquatic infrastructures: kelong, pile dwelling, lakeside city, hausboote...

In addition, we estimate that about 3 million people are currently living at sea for extended periods of time: navy and military personnel, oil and gas platforms, tourist liners, etc. Living on the water is not a utopia. This is already a plural reality.

Yet, we do not believe that humans will spontaneously go to live full-time at sea in the current state of affairs unless they are forced to do so, by a lack of resources or an environmental upheaval such as rising sea levels.

In the medium term, we think humans will go to work more and more at sea, and gradually further and further from the coast. This will require infrastructure capable of accommodating them over more or less long periods.

In the long term, humans may want to live at sea full-time for reasons of productivity, comfort or resilience. In our view, the habitat at sea will be primarily the consequence of necessary activities at sea. In the meantime, our Smart Open-sea Ecosystem concept will make it possible to understand how humans could work and live in symbiosis with and on the Ocean according to an alternative philosophy: welcoming the sea rather than fighting or fleeing it.





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What will a Smart Open-sea Ecosystem be used for?

The concept of the Smart Open-sea Ecosystem is not fixed and unique. Protean according to the environmental and social context, it aims to produce a nexus [energy + food + water] in a symbiotic way that benefits all living beings.

A Smart Open-sea Ecosystem defines a new modular aquatic spatial model within an environment that is by definition agile. Starting from deep, cold and nutrient-rich waters, it aims to intelligently combine, within a modular space, co-activities to create new profitable synergies. Depending on the global context, other co-activities can be exploited in order to optimize the necessary profitability of the project: scientific eco-tourism, research and education, biotechnologies, exploration, monitoring, habitat, depollution, etc.

Who is the Smart Open-sea Ecosystem solution initiated by Indigo Civilization for?

Our solution aims to learn to work in symbiosis with the marine world to transform constraints into opportunities. Small island territories are particularly relevant to study insofar as they synthesize many challenges, both present and future: scarcity of resources and low self-sufficiency (food, fresh water, energy), climate change (rising and acidification of waters, loss of biodiversity), low economic diversification, etc.

If we want to propose a symbiotic, efficient and sustainable blue economy model, thanks to shared and biophilic offshore infrastructures, we want to gradually understand how communities could ensure their socio-cultural adaptation and resilience in the decades to come.

Thus, our approach intends to contribute to the adaptation and development of any vulnerable island or coastal community in the medium and long term. By the end of the 21st century, we estimate according to various sources (IPCC, WEF) that between 400 and 800 million people could be affected.

How could our solution be a global response to climate change and its consequences?

Our approach is as much scientific as it is philosophical. Through our research and innovation project, we want to offer an alternative vision of the interaction between humans and Nature. We want to demonstrate that it is possible to reconcile human needs and environmental balance. We want to prove that it is possible to adapt in a timely way, to transform inevitable constraints into alternatives and opportunities.

Rising sea levels alone threaten a third of the 118 islands of French Polynesia (CESEC 2025). Indigo Civilization wishes to explore an alternative path whereby vulnerable communities could adapt to rising sea levels without fighting or fleeing the ocean.

The open sea is a very demanding environment. Is it realistic to settle there?

If living on the water is already a reality, considering it in the open sea may seem worrying. At this stage of our knowledge, the location of a Smart Open-sea Ecosystem cannot be considered anywhere. This is why we are considering experimenting with the Smart Open-sea Ecosystem concept not far from the coast.

In some configurations, strategically located offshore infrastructure can offer significant resilience advantages over conventional coastal developments.

By operating beyond the immediate coastal area, these infrastructures could reduce their exposure to coastal flooding, rising tsunamis, shoreline erosion and other hazards related to the land-sea interface, while benefiting from access to oceanic resources. The quality of their resilience would depend on the appropriate choice of bathymetric conditions, structural design, mooring systems and operational protocols in extreme weather conditions.

How is this project de-risked as much as possible?

Our project follows a gradual development process – de-risking strategy over a period of ten years. The SOE is not a high-risk technological project, but a project with strong systemic complexity, whose risks can be gradually reduced through a transdisciplinary, experimental, and territorialized approach.

Beyond the territorial and local societal engagement (phase 1), the second theoretical phase of 3 years aims at the transdisciplinary study, modelling and simulation of the Smart Open-sea Ecosystem (digital or via small physical demonstrators). This phase does not present a risk of physical deployment in real environments but must prevent a risk of technical, economic, and institutional validation. This is a pre-R&D phase intended to attract the support of public, civil and economic stakeholders with a view to an experimental phase. This phase is being framed by a philanthropic consortium involving public and civil stakeholders.

The third phase of our program is dedicated to the incremental construction and experimentation of a pilot in a real environment over 7 to 10 years. It is a question of learning by doing, even if it means sometimes making mistakes, but on a small scale, hence a limited risk. This crucial step is supervised by a public-private consortium involving public, civil and economic stakeholders.

The project will be developed in compliance with the international law of the sea, the status of French Polynesia, the rules applicable to the occupation of the maritime domain, environmental regulations and maritime and personal safety requirements. The final technical and regulatory qualification of the platform, as well as the authorisations specific to each of its activities, will be established in consultation with the competent authorities.

Then, the experience curve will allow us to propose a proven, replicable, viable, efficient and sustainable ocean solution to vulnerable coastal or island territories wishing to adapt.

How does a SOE differ from other artificial island projects?

The Smart Open-sea Ecosystem concept advocated by Indigo Civilization is sometimes compared to other artificial island projects that do not correspond to our vision.

Our project is modular and minimally invasive since it uses floating infrastructure, anchored beyond the coast. It is not a question of creating artificial islands from embankments that are particularly destructive of the local natural ecosystem. A Smart Open-sea Ecosystem must above all be biophilic and symbiotic.

Our project aims to create an ecosystem of co-activities that interact with each other to create synergies and a circular economy. Schematically, our initial concept aims to produce energy in a sustainable process that will promote the creation of a new food web and the development of local biodiversity. This will allow for the development of integrated multi-trophic aquaculture around the infrastructure to produce food. This will turn the Smart Open-sea Ecosystem into a blue carbon sink.

Our multi-use and holistic concept is driven by the general interest, both of local communities and of biodiversity or public and private economic actors. A Smart Open-sea Ecosystem is not a billionaire's paradise or a purely industrial infrastructure. It is an integrated and aesthetic multifunctional ecosystem, serving a triple social, ecological and economic benefit.

How can this project be a real lever for progress for local communities?

We believe that the best way for a society to thrive is to be self-sufficient and to have the ability to finance its adaptation and its progress curve. A Smart Open-sea Ecosystem plans to meet this need, as an area of socio-economic activities: production of energy, food and co-products, research laboratory, educational platform advocating the symbiotic blue economy, scientific eco-tourism centre, or even a housing area in a context of rising sea levels. All of these co-activities are an opportunity to gradually create a sustainable sector of excellence, to diversify the economic levers, synonymous with jobs and collective development.

The applied research process of the local Smart Open-sea Ecosystem concept is inherently participatory and inclusive. It consults and involves the population in the project's orientations to strengthen collective intelligence and validate the relevance of the project. In addition, experimentation in a real environment will be supervised by local public authorities, representatives of civil society.

Why the island of Bora Bora? Are there other territories involved?

The island of Bora Bora, in French Polynesia, is the first territorial partner of La Indigo Civilization. Other European overseas territories with complementary issues are interested in contributing to and participating in our project, whether in the Pacific Ocean, the Indian Ocean or the Caribbean.

Our project to work beyond the coasts and lagoons in a symbiotic way is part of a sustainable development approach initiated on the island of Bora Bora about twenty years ago.

This Polynesian territory, a real laboratory for an exemplary and sustainable future, has a favourable environmental and climatic context. However, land pressure is very high and the municipality has just imposed the first protected marine reserve in the world: nearly 700 hectares to ensure the resilience of its legendary lagoon.

In this context, the Smart Open-sea Ecosystem project will be considered as a territorial extension of the island aimed not only at alleviating the pressure on the coasts and congested land but also at transforming constraints into opportunities: energy and food self-sufficiency, jobs and economic diversification, socio-cultural resilience, international exemplarity.

Where is the project currently in its development in Bora Bora?

Indigo Civilization is currently in its research and conceptualization phase. No final decisions have been made regarding the design, implementation, or operation of the Smart Open-sea Ecosystem. This phase is precisely the moment to listen, question, and co-construct — and the input of the Bora Bora community is not a formality, but a foundation.

All of the topics presented in this document — from energy surplus and hydroponic farms — to the Local Council, the Blue School, employment commitments, and the role of local fishermen — are open to being shaped, refined, and reimagined in accordance with the views, values, and vision of the local population. We do not arrive with a fixed blueprint. We arrive with a set of possibilities, and we believe the best version of this project will emerge from an honest and ongoing dialogue with the people of Bora Bora. How the Smart Open-sea Ecosystem can truly benefit the future life of this community is a question we intend to answer together.

How will the local population of Bora Bora actively participate in the project?

The SOE is privately operated, but territorially embedded. Its operational, financial and commercial management remains under the responsibility of a private operator. At the same time, a structured participatory governance framework ensures that the project's economic, social, cultural, environmental and intergenerational value is meaningfully shared with the host community.

The applied research process of the Smart Open-sea Ecosystem is inherently participatory. To ensure that the local population is not only consulted but actively shapes the project, Indigo Civilization will establish a Territorial Council composed of Bora Bora youth and local stakeholders (fishermen, economic actor, public, civil and youth representatives). This council will meet on a regular basis to discuss the project's development, raise concerns, and contribute ideas regarding the project as a whole. The Territorial Council is a cornerstone of our governance model — ensuring that the communities most affected by the project have a structured, recurring, and meaningful voice in its evolution.

The power of the Territorial Council could be:

- Co-define the SOE's territorial objectives.
- Issue a binding opinion on major project developments.
- Participate in defining social, cultural, and environmental commitments.
- Propose and prioritize the use of the community fund.
- Review performance indicators and annual results.
- Request independent audits.
- Refer to a mediation mechanism in case of conflict.
- Recommend the suspension or revision of an activity in case of serious breaches of social or environmental commitments.

This Council could also co-design a Community Benefit Agreement, a formalized agreement between the operator, SOE partners, and relevant territorial stakeholders. It makes community benefits predictable and enforceable, without calling into question the company's management autonomy over decisions that belong to it.

It could cover commitments such as:

- Local employment: recruitment objectives, training, career progression, access to management positions.
- Local economy: local purchasing policy, SME referencing, tailored calls for tenders.
- Community contribution: annual payment to a territorial fund according to a pre-established formula.
- Cultures: support for cultural initiatives, protection of knowledge, remuneration in case of exploitation.
- Environment: independent ecological monitoring, accessible data, stewardship programs.
- Intergenerational: youth, apprenticeship, scholarships, scientific and educational projects program.

Will the Smart Open-sea Ecosystem benefit local fishermen?

Yes. Beyond its primary functions of energy and food production, the Smart Open-sea Ecosystem will naturally function as an anchored Fish Aggregating Device (FAD) dedicated to artisanal fishing. Its floating infrastructure will attract and concentrate local marine life, contributing to the flourishing of fish populations in the surrounding waters. Local fishermen will be explicitly welcome to fish in the surrounding area, turning the structure into a direct resource for the local fishing community. Rather than competing with or restricting traditional fishing practices, the Smart Open-sea Ecosystem is designed to complement and enrich them.

How will the local population of Bora Bora benefit from the Smart Open-sea Ecosystem (SOE)?

The Smart Open-sea Ecosystem is designed to generate direct, tangible benefits for the population of Bora Bora across multiple dimensions:

- Sustainable Energy. The SOE will operate entirely on renewable energy produced within its own ecosystem. The energy surplus generated will be redirected to the island, contributing to Bora Bora's energy self-sufficiency and reducing its dependence on imported fuel.

- Blue School. The SOE will host an educational facility dedicated to ocean biodiversity and sustainability — welcoming local school children to visit, learn, engage with the marine environment and understand the technologies the project is developing. The aim is to develop in-time a Polynesian sector of Excellence.

- Marine Permaculture and Hydroponic Farm. The SOE will develop marine permaculture, seaweed fields and hydroponic farm whose products will be destined for the local population. This will reduce import costs and contribute to the island's food self-sufficiency.

- Science and Research. Part of the SOE will be dedicated to a research laboratory, open to national and international researchers to develop new studies and technologies around sustainability, deep-sea ecosystems and the blue economy — positioning Bora Bora as a leading hub of scientific innovation.

- Empowering the Local Economy. The pioneering regenerative tourism concept – including a hotel and a range of innovative tourism activities – will directly benefit the local community, generating new demand for local market products and enhancing the island's attractiveness and economic activity.

- Jobs and Capacity Building. The SOE will implement capacity building programmes to integrate the local population into the development and operation of the ecosystem. The tourism complex will reserve 75% of its positions for residents of Bora Bora, ensuring that employment opportunities remain rooted in the community.

How does the Smart Open-sea Ecosystem relate to Polynesian cultural identity and land attachment?

The Smart Open-sea Ecosystem does not seek to replace or compete with the cultural and ancestral relationship that Polynesian communities have with their land. It is designed as a complementary infrastructure — an extension of the island's capacity, not a substitute for it.

The project fully recognizes that Polynesian identity, traditions, and sacred spaces are rooted in the land and lagoon of Bora Bora, and nothing in the development of the SOE will interfere with or diminish access to these spaces. The SOE is not there to replace or displace anything that already exists on the island — it is there to add. In practical terms, this means supplementing existing food production, providing the island with additional sources of fresh produce without touching the island's plots of land or the lagoon, while reducing costly imports. It also means generating

renewable energy at sea, useful to the island's society and making offshore food production possible, among other things.

The SOE seeks to be a source for Bora Bora — more food, more energy, more economic opportunities — while leaving the island's land, lagoon, culture, and way of life intact. In the longer term, if sea levels rise and the need arises, the modular and adaptable nature of the structure means that it could evolve further — always guided by the community's vision of what its future should be.

How is the Smart Open-sea Ecosystem financed, and what does that mean for the population of Bora Bora?

If approved, the construction and operation of a Smart Open-sea Ecosystem would require a significant investment. Indigo Civilization, a non-profit organisation, proposes a pragmatic solution for financing this project.

Realistically, this ambitious project cannot be funded by public funds. Rather than placing a financial burden on the Polynesian community, the project would be funded by investors operating a regenerative and scientific tourism concept that is unique in the world, within the strict framework of a public-private consortium.

This means that the investments and revenue generated by tourism, Bora Bora's primary economic driver, would enable the construction and operation of the infrastructure, as well as the development of efficient and sustainable ocean-based solutions at the service of the local community.

The Smart Open-sea Ecosystem could be designed primarily as an exceptional hospitality establishment, unique in the world, located in an offshore marine environment, integrating complementary infrastructures and activities in energy production, regenerative aquaculture, scientific research and biodiversity preservation. The hotel operation is the main economic activity of the project. The co-activities contribute to its operational autonomy, the quality of the experience offered to visitors, the reduction of its environmental footprint and the creation of scientific and economic value for the territory.

Both an ocean laboratory of the future and a hospitality facility unique in the world, the SOE aims to develop and implement timely adaptation solutions for all vulnerable island territories, in Polynesia and beyond.

How does Indigo Civilization ensure that the project will not harm the environment or the community?

Before any activity is implemented or any infrastructure is installed, Indigo Civilization's multidisciplinary team conducts thorough research into the potential impacts, possibilities, and benefits that each element of the project may bring to the local environment and community, according the Environmental and Social Standards of the World Bank.

This research-first approach is complemented by the Local Council, which brings together Bora Bora youth and local stakeholders in periodical meetings to review the project's progress, raise concerns, and share their views on every aspect of its development. The community is a

permanent and active part of the process from beginning to end — ensuring that both scientific rigor and local knowledge guide every decision made.

In the long term, Indigo Civilization's goal is to ensure the integrity of the project and the proper respect of the interests of all stakeholders: local community and biodiversity, investors and public authorities.

Who will maintain the Smart Open-sea Ecosystem in the long term?

The SOE will be operated by one or more private actors according to a framework and precise rules, defined by the public authorities.

Any project of this scale requires a solid financial structure — not as a commercial ambition, but as a practical necessity. Indigo Civilization has integrated this logic into the shared governance of the SOE from the outset: the resort — including a hotel and regenerative tourism activities — generates a continuous flow of capital to cover the long-term operation, maintenance and optimization of the ecosystem and the solutions implemented.

The SOE does not depend on public budgets or the financial resources of the local population to operate. It is self-sufficient by design — ensuring that the infrastructure and all the benefits it gradually brings to Bora Bora remains operational in the long term, without ever becoming a burden on those it serves.

Why is Indigo Civilization a non-profit and public-interest organisation?

Our initiative, which is as much scientific and technical as it is philosophical, is complex and aims at a viable and harmonious long-term result. Its gradual research/action process will engage many stakeholders, civil, public and economic. Our project aims to bring together sometimes divergent interests.

To be free to think and innovate, we want to avoid dogmas and conflicts of interest. We believe that a balanced philanthropic consortium is the best option to meet this urgent need and complete the first phase of our ambitious project. In addition, we want to reassure local stakeholders about the integrity of our approach.

Why is our project not utopian?

Indigo Civilization draws its ambitious and avant-garde vision from a very rich state of the art. We estimate that at least 90% of the techniques and technologies necessary to experiment with our Smart Open-sea Ecosystem concept are already available.

Our research/action project is mainly about understanding how existing solutions, more or less mature, can be combined in order to create new synergies: "the whole is greater than the sum of its parts" - Aristotle.

Our main challenge is complex project management and consists of getting complementary expertise with different priorities to work together, in a transdisciplinary way, in order to define, model, simulate, experiment and make reliable a global, sustainable and economically viable solution.

Why join a philanthropic consortium for such a project?

Joining our philanthropic consortium, whether as a natural or legal entity, allows us to contribute to the general interest while benefiting from substantial tax advantages, which vary from one country to another (see documentation proposed by the European Fundraising Association).

Beyond an altruistic approach, philanthropy rationally makes it possible to de-risk impact investing on a larger scale and to prepare disruptive innovations and future business models.

What is the genesis of Indigo Civilization?

Indigo Civilization was initiated by its President Frédéric Pons in 2022 and then legally registered in France, as a non-profit and public-interest organisation in 2023.

In 2020, Frédéric survived a sudden health problem. Since then, every day has been a gift for him and every day must be used to live life to the fullest and contribute to a bright collective future. This is why he decided to devote most of the rest of his life to a meaningful project that was consistent with his values of progress, audacity and harmony. Frédéric started this project alone and gradually surrounded himself with a community of international talents and ocean experts to nurture and grow this ambitious project, which is as scientific as it is philosophical.