INDIGO CIVILIZATION

SMART OPEN-SEA ECOSYSTEM





Credit: Simon Nummy

Global context

The Smart Open-sea Ecosystem (SOE) initiative, developed by the French NGO Indigo Civilization, is an innovative response to current and future challenges of vulnerable island and coastal territories: energy and food dependency, poor economic diversification, migration of the local youth, climate change, rising sea levels, available lands and resources scarcity, and biodiversity loss. It also aims to pioneer a scalable regenerative open-sea blue economy, and proposes a symbiotic relationship between humanity and the ocean.

Objectives and Vision

The SOE aims to transform environmental constraints into sustainable opportunities. The guiding principle of our solution is to develop a circular and symbiotic blue economy beyond the coasts and lagoons already subject to multiple pressures and conflicts of interest. Four pillars guide this project:

- Preservation of the natural heritage.
- Improved well-being of local communities.
- Sustainable economic development and self-sufficiency.
- Transformation into an ecologically exemplary model.

Location & Territory Partnership

Bora Bora, in French Polynesia, was chosen as a pilot territory for this project because of its exceptional natural environment, its political stability, its ambition in terms of sustainable development for more than twenty years, and its status as a high-end tourist destination. A memorandum of understanding signed in January 2025 formalizes the long-term collaboration between the municipality of Bora Bora and Indigo Civilization.

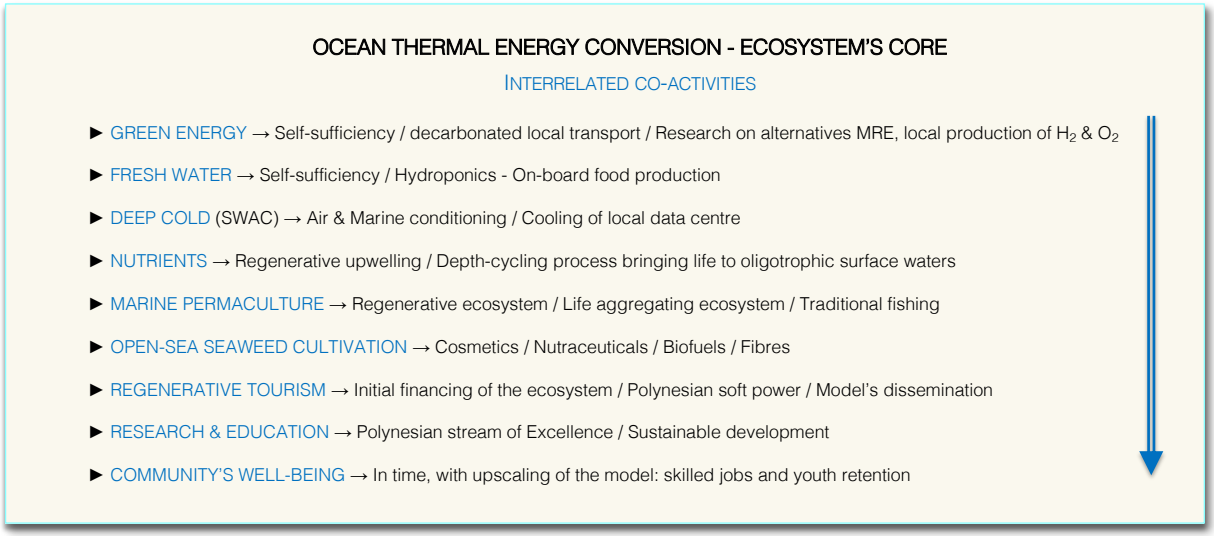
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Transformative Proposal

We are developing a new generation of offshore human ecosystems capable of meeting the challenges of island and coastal territories. The SOE proposes a regenerative maritime territorial extension, located beyond the coasts, and aimed to:

- Alleviate environmental and anthropogenic pressures on coastal and lagoon ecosystems, which are often confronted with multiple conflicts of interest.
- Create a synergistic and regenerative set of profitable co-activities, using especially the cold rich-nutrient deep-sea waters to produce energy, food and freshwater - the waters of the depths thus allow a dual energy and biogeochemical function.
- Develop biophilic infrastructures conducive to the gradual creation of a new trophic web (Blue Carbon Ecosystem).
- Promote the autonomy and socio-cultural resilience of local communities.

The strength of the SOE model is that its various co-activities are interdependent and mutually profitable — each co-product enhances the economic viability of the others. This is the logic of the circular economy applied to open-sea, directly aligned with the structural needs of a territory that today imports 90% of its food and 92.5% of its energy, but has an exceptional natural marine heritage representing 99% of its territory — an immense ocean capital that is still largely undervalued.



Funding Opportunities of the pilot

Regenerative tourism is identified as a key initial lever to finance this pioneering project. Both a living laboratory of the future and a world's unique responsible tourism experience, the SOE combines cutting-edge technologies and traditional knowledge while developing a profitable and inclusive economic model that benefits to all stakeholders: biodiversity, local community, investors.

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Development Process

Indigo Civilization federates and leads an international network of multidisciplinary expertise to co-construct, experiment and validate viable adaptation models. From consultation to R&D and operational execution, we bring together project stakeholders and ensure their respective interests and buy-in:

1. Territorial actors and local civil society,
2. Economic actors and investors.

The project is structured in three phases:

1. Phase 1 (18 months): Societal engagement, exploration and scoping, project framework.
2. Phase 2 (36 months): R&D, final design, technical evaluation, and development of demonstrators.
3. Phase 3: Construction and operational launch.

To date, we are building the community engagement of our territory partner. Beyond consulting and informing, we are driving the Youth within a prospective and creative process that envisions a symbiotic offshore blue economy as a viable response to current and future challenges.

Environmental and Social Commitment

Indigo Civilization is committed to applying the World Bank's Environmental and Social Standards (ESS), ensuring the protection of people and the environment, and promoting sustainable development among all local stakeholders.

Conclusion

The Smart Open-sea Ecosystem represents a pioneering and modular approach to help meet the climate, environmental and socio-economic challenges of island and coastal territories. By combining technological innovation, respect for local culture, and sustainability, the project aims to create a replicable model for other vulnerable regions around the world.

→ DETAILED PRESENTATION

→ FREQUENT ASKED QUESTIONS