Indigo Civilization
the ocean dwellers

SMART OFFSHORE ECOSYSTEM

Credit: Simon Nummy

Global context

The Smart Offshore Ecosystem (SOE) initiative, developed by Indigo Civilization, is an innovative response to future climate challenges, such as rising sea levels, resource scarcity, and biodiversity loss. It also aims to anticipate the strong but necessary development of the 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 for vulnerable island and coastal territories. 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.

Transformative Proposal

The SOE proposes a floating 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.
- Develop a 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 offshore, 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.

OCEAN THERMAL ENERGY & OTHER MARINE RENEWABLE ENERGIES

- ► GREEN ENERGY → Mother Island Power / Carbon-Free Transport / Energy Export (H_2 Electricity)
- ► FRESH WATER → Community / Tourism / Hydroponics - Food
- ► DEEP COLD (SWAC) → Air conditioning / Data centers / Nutrients
- ► MARINE PERMACULTURE → Local food / Artisanal fishing / Regenerative ecosystem
- ► SEAWEED → Cosmetics / Nutraceuticals / Biofuels / Fibers
- ► REGENERATIVE TOURISM → Initial financing of the system / Soft power French Polynesia
- ► RESEARCH & DEUCATION → Polynesian Stream of Excellence / Skilled Jobs

Funding Opportunities and partnerships

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.

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 (6 months): Exploration and scoping, including public consultation, project definition, and pre-assessment of the maritime location.
2. Phase 2 (24-36 months): Pre-R&D, final design, technical evaluation, and development of demonstrators.
3. Phase 3: Construction and operational launch.

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 Offshore 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.

→ TO LEARN MORE ABOUT THE PROJECT