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Global Alliance of Citizen Science for Ocean

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The Global Citizen Science Alliance for Ocean is a global initiative that invites everyone to take action for ocean conservation by participating in concrete scientific research.

Data collection, collaborative games, educational workshops: the project brings together citizens, schools, and researchers in a shared dynamic.

Accessible to all, it builds bridges between science, engagement, and local action, across the world.

> *Science can no longer be the concern of a few, nor the ocean the concern of none: a global alliance to connect perspectives, connect knowledge, and unite commitments around the Ocean.*

Click here to view the official commitment.
[https://sdgs.un.org/partnerships/global-participatory-science-initiative-oceans]

The Global Citizen Science Alliance for Ocean is a global initiative that aims to build an international alliance of citizen science applied to the ocean, structured around four pillars: field data collection, participatory digital tools (including gamification), environmental education, and South-North cooperation. It draws on local dynamics driven by 'Ocean Clubs', strengthened by international scientific and educational infrastructures. The project places particular focus on Central and West Africa, aiming to reduce disparities in access to research, while contributing to the knowledge, protection, and sustainable governance of marine ecosystems.

The Global Citizen Science Alliance for Ocean is set against a backdrop of increasing pressure on marine ecosystems. Climate change, biodiversity collapse, pollution (plastic, noise, chemical), and unsustainable extractive practices are threatening oceanic balance. Faced with these systemic challenges, academic research, though essential, cannot alone meet the urgency of the ecological crisis. A more open, collaborative, distributed, and inclusive production of knowledge is emerging as a key strategic lever. In this context, the project offers a model of global participatory research, rooted in citizen engagement, technological innovation, and interdisciplinarity. It seeks to strengthen local capacities to observe, understand, and document the state of marine environments, while bridging scientific knowledge, local knowledge, and active pedagogy. This project aligns with SDG 14 of the United Nations 2030 Agenda and fits within the United Nations Decade of Ocean Science for Sustainable Development. From the Arctic to West Africa, from island archipelagos to urban coastal zones, the initiative brings together a wide diversity of actors (e.g., scientists, educators, students, citizens), around a common mission: to make the ocean visible, understandable, and protected through an unprecedented global mobilization.

The *Global Citizen Science Alliance for Ocean* is an international participatory science initiative that enables everyone youth, families, schools, associations, curious citizens to actively engage in ocean protection. It aims to make scientific research a collective and accessible endeavor, mobilizing a wide range of audiences through field activities, digital tools, and innovative educational formats.

This global project seeks to build an international alliance of citizen science applied to the ocean, based on four complementary pillars: i) field activities, through citizen-collected data; ii) digital tools that enable large-scale participation (including gamification); iii) educational initiatives, adapted to different contexts; and iv) South-North cooperation aimed at building local capacities and reducing inequities in access to research. It is rooted in local dynamics supported by international scientific and educational infrastructure, with a particular focus on Central and West Africa, identified as priority development zones. The project revolves around Ocean Clubs, self-declared groups that emerge locally across all continents, initiated by students, teachers, researchers, or community organizations. These clubs act as hubs for action and research, supported by an international network of experts and institutions. Equipped with sensors, drones, mobile applications, or underwater cameras, participants collect data on marine biodiversity, water quality, pollution, or the effects of climate change. All data are structured according to open protocols and transmitted to a shared database, sometimes in real time, via networks such as Terra Forma.

But the project goes beyond data collection. The data are integrated into a massive multiplayer educational video game, co-designed with Massively Multiplayer Online Science, the Computer Science School at McGill University, and a recognized game developer. Players around the world complete scientific missions: identifying species, classifying plankton images, analyzing sound recordings. Inspired by the Project Discovery model (EVE Online), this system transforms scientific analysis into a collaborative challenge, combining rigor, accessibility, and enjoyment.

The project also helps strengthen ocean education and scientific literacy. It develops pedagogical resources for schools and NGOs, supports the integration of marine environment content into educational curricula, and promotes systems like "blue passports" to recognize citizen engagement. Special attention is given to regions often overlooked by major oceanographic campaigns, Central and West Africa, Pacific Islands, indigenous coastal communities, by supporting the creation of local research centers and the inclusion of traditional knowledge in global scientific dynamics.

Led through a multi-stakeholder governance model, the project already brings together over a dozen partners (e.g., universities, research centers, NGOs, public institutions) based in France, Canada, the United States, and beyond. Engaged scientists contribute to defining protocols and validating data. A steering committee composed of representatives from each partner will ensure strategic coordination and project deployment, especially ahead of its official launch at the United Nations Ocean Conference in 2025.

Main Objectives

The Global Citizen Science Alliance for Ocean is structured around three core pillars, scientific production, citizen engagement, and educational innovation, integrated into a systemic approach to marine conservation. Cross-cutting objectives include building local capacities, opening new international partnerships, and supporting large-scale data structuring.

1) Producing scientific data through citizen participation: The project aims to generate reliable, relevant, and geographically diverse environmental data through a global network of Ocean Clubs. Citizens, whether students, teachers, fishers, or volunteers, are trained to use accessible tools (sensors, drones, underwater cameras, mobile apps) to measure biodiversity, water quality, pollutants, or climate effects. Guided by shared protocols, results are transmitted in real time to an open-access database (via networks like Terra Forma) and shared with scientific partners. The goal is to enhance observational capacity in under-monitored regions, particularly in Central and West Africa.

2) Deploying a digital platform for collaborative science: Field-collected data are transformed into interactive missions within a massively multiplayer educational game, developed with MMOS, McGill University, and a partner game studio. Players are invited to analyze real scientific data (plankton images, acoustic signals, pollution measurements), contributing to cross-validation while raising environmental awareness. This innovative approach, already tested in Project Discovery, mobilizes a wide public, including those far from coastlines. Beyond gaming, the initiative develops open digital tools, including a data platform, interactive maps, and visualization interfaces accessible to researchers, citizens, and decision-makers.

3) Strengthening environmental education and citizen engagement: The project embeds participatory science into both formal and informal education systems: open-source pedagogical resources, teacher training modules, school activities, public workshops, events, etc. It supports schools, NGOs, and local authorities in adopting marine issues, and recognizes engagement through tools like the "blue passport." The aim is to develop a shared ocean literacy in support of ecological transition. Priority is given to historically underrepresented territories by supporting the creation of local citizen research centers, as seen in initiatives in Cameroon and Small Island Developing States.

4) Structuring international scientific and territorial cooperation: The project contributes to a strengthened cooperation dynamic around the sustainable blue economy, marine pollution mitigation, illegal fishing, and ecosystem resilience. It aims to build bridges between scientific actors, coastal territories, public institutions, and educational networks. This ambition includes consolidating a shared technical framework and supporting local research and observation policies, following a model of scientific diplomacy and shared development.

These four dimensions reinforce one another to create a scalable, reproducible model of citizen science at the global level. Supported by multi-stakeholder governance, the project aims to foster a generation of citizen-researchers and pilot territories at the heart of the oceanic ecological transition.