Green Oyster Initiative's (GOI) overall goal is to promote conservation, co-restoration and consumption (C3) of oysters, climate and its ecosystem resources in greener and eco-inclusive manners to provide food and scientific eco-tourism services to meet sustainability needs, including a facility for immersive scientific and eco-leadership learning opportunities. GOI co-creates a community-based Green Oyster Reserve (GOR) as a pointer solution for greening oyster ecologies, industries and empowering communities.

GOI is implementing actionable solutions in the Volta River Estuary located in southeastern Ghana. The river connects livelihoods, energy, transportation and water needs of nearly 120 million people in six West African countries. GOI is a hybrid entry that won a competition organised by the Switch-Africa Green (SAG-SEED) in Kumasi on April 20, 2017.

1. Abstract

Oysters are spectacularly charismatic species that provide immense food, livelihood and ecobenefits in the estuary of the Volta River in Ghana and some coastal world regions. Yet, extreme climate change combines with high utilisation of toxic chemicals to alter ecosystem services by 70%, leading to reduced oyster population, ecological job loss, extreme poverty and migration. In response, Green Oyster Initiative integrates eco-entrepreneurial model (EEM) into oyster conservation as a sustainable nature-based solution (NbS). This paper explores the challenges, prospects and opportunities associated with a promising NbS start-up in delivering all the 17 SDGs overtime. New options for enabling NbS to intervene in climate and COVID-19 crises, and to facilitate socio-ecological improvements are highlighted to stimulate future research and understanding.

2. Background information

Green Oyster Initiative's (GOI) overall goal is to promote conservation, co-restoration and consumption (C3) of oysters, climate and its ecosystem resources in greener and eco-inclusive manners to provide food and scientific eco-tourism services to meet sustainability needs, including a facility for immersive scientific and eco-leadership learning opportunities. GOI co-creates a community-based Green Oyster Reserve (GOR) as a pointer solution for greening oyster ecologies, industries and empowering communities.

GOI is implementing actionable solutions in the Volta River Estuary located in southeastern Ghana. The river connects livelihoods, energy, transportation and water needs of nearly 120 million people in six West African countries. GOI is a hybrid entry that won a competition organised by the Switch-Africa Green (SAG-SEED) in Kumasi on April 20, 2017.

3. EEM intervening options

Outcome

- Recycled 50kg of oyster shells to test-run manufacturing of 200 ‘ecochalks’, and introduced oyster capital to 20 women.
- Public awareness creation on oyster conservation reached nearly 35,000 people.
- Mobilised and trained 300 CVEs, and oyster divers on CSIL and NbS concepts.
- Successfully negotiated 4 partnerships.

4. Selected Milestones

- Refined oyster shell substrates to use in local built environment.
- Recycled oyster shells to use in ceramics industry.
- Powdered oyster shells use to manufacture ‘ecochalk’ for deprived rural schools.
- Pelleted livestock feeds formulated from oyster shells.