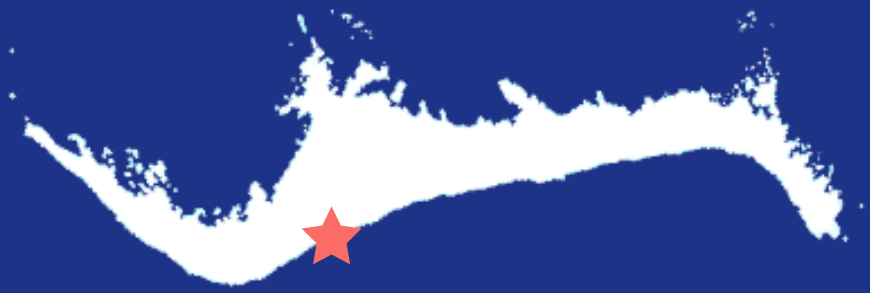
APRIL 2021

BLUE ACTION LAB



FREEPORT, GRAND BAHAMA

"Rapidly developing the solutions needed for coastal communities and marine ecosystems to thrive in the face of climate change"

BLUE ACTION LAB

THE PROBLEM

At the front lines of the climate crisis, island and coastal communities are confronted with a stark reality: find solutions to rising seas, increasing storm intensity, and the degradation of marine ecosystems, or face relocation and ruin. The Blue Action Lab ("The Action Lab") is developing the technologies and models needed to empower these communities to thrive despite the challenges they face.

THE OPPORTUNITY

1 billion people around the world live along coastlines where changing ecosystems and frequent climate catastrophes threaten economies and ways of life. Creating systems to sustain these vulnerable communities is more important than ever, and the urgent demand will drive a projected $23 trillion market for coastal resilient solutions.

THE SOLUTION

In order to pioneer green solutions and build the blue economy, The Action Lab is building a centralized hub where technologies and systems can be rapidly tested, structured, financed, and applied at meaningful scales. Through a network of industry leaders, research institutes, non-profits, and entrepreneurs, The Action Lab is developing new models for building resilient ecosystems and communities that can be applied globally.

THE ACTION LAB ADVANTAGE

The Action Lab's location in the free-trade zone of Freeport, Grand Bahama delivers on this critical need and offers key advantages through established partnerships with the Government of the Bahamas and the Grand Bahama Port Authority that allow for streamlined permitting processes and access to thousands of acres of undeveloped coastal and marine environments. Inclusive and sustainable by design, The Action Lab will empower communities to take action against climate change and become a transformative model for resiliency worldwide.

ACTION SECTORS

The Action Lab facilitates real-world implementation by acting as a proving ground for cutting-edge climate adaptation technologies and models in the following core focus areas:

- OCEAN INNOVATION
- ECOSYSTEM RESTORATION
- SUSTAINABLE INFRASTRUCTURE
- FOOD SECURITY & AGRICULTURE
- DISASTER PREPAREDNESS
- CIRCULAR ECONOMY
- WORKFORCE DEVELOPMENT
- OUTREACH & EDUCATION

BUILDING COASTAL & OCEAN RESILIENCE

AN EXISTENTIAL PROBLEM

The IPCC has deemed islands and low-lying coastal regions among the world's most vulnerable to climate change. In addition to rising sea level and hurricanes of increasing intensity, the marine ecosystems that support these coastal and island communities are in steady and swift decline: NOAA warns that more than 50% of the world's reefs have died in the last 30 years, and the World Economic Forum estimates that the weight of plastics in the oceans will exceed the total weight of fish by 2050, by which time most global fisheries will have collapsed.

Coastal communities are vital stewards of these critical ecosystems, yet many currently lack the adaptive capacity to effectively respond to, prepare for, and thrive amidst changing conditions. The deterioration of their marine ecosystems has destabilized local economies, and in the wake of a global pandemic and record hurricanes, coastal regions and island nations around the world are reassessing the sustainability of their futures and investigating non-tourism-related revenue streams to bolster their economies. These communities urgently need solutions that will only become reality through immediate investment into transformative innovation that addresses and mitigates the persistent existential threat of climate change.

AN OPPORTUNITY AMIDST CRISIS

In 2016, the International Finance Corporation (IFC) released a report on climate investment announcing an estimated $23 trillion investment into climate smart innovation under the Paris climate agreement. Two years later, the IFC reported that an estimated $29.4 trillion in climate investment opportunities would take place in emerging markets, with $5 trillion earmarked for the Latin American and Caribbean region. In addition, today's ocean economy generates an estimated $3-6 trillion per year, supporting the livelihoods of approximately three billion people worldwide (UNCTAD, 2020).

There is growing acceptance that governments, communities, businesses, and development agencies must make immediate and long-term investments in coastal and ocean resilience and climate smart technology if livelihoods, cultures, and assets are to be protected (IPCC SROCC, 2019). The Action Lab will play a key role in this emerging multi-trillion-dollar market, becoming a leader in the intertwined industries of ecosystem restoration and climate smart technology and creating a model for equitable and sustainable marine and coastal economic development.

A BAHAMIAN SOLUTION WITH GLOBAL APPLICATION

Islands like Grand Bahama are living laboratories for the circular economy, where climate resilience, sustainable solutions, and ocean-based strategies create immense value. The Action Lab's planned aquaculture and marine laboratory facilities will amplify the advantages of Grand Bahama's natural ecosystems for blue economy innovation.

The Action Lab campus will provide scientists, entrepreneurs, and educators with a physical testing ground where they can exchange ideas and implement the solutions needed for a resilient and sustainable future. Along with the guided business support of a dedicated on-the-ground team, the regulatory advantages of the free-trade zone of Freeport will allow for expedited execution of research and business plans for innovative coastal and ocean resilience solutions.

The Action Lab will be a hub for the rapid development, testing, structuring, financing, and scaling of climate resilient models and technologies. Through a global network of partnerships and industry-leading advisors to facilitate mentorship and access to capital, The Action Lab will build an inclusive innovation ecosystem of research institutes, mission-aligned businesses, and community leaders.

These initiatives will jumpstart the economy of The Bahamas and beyond, creating high-quality jobs and spurring the equitable development of new Caribbean industries ready to lead the world in the emerging resilience and blue economy marketplace.

THE GRAND BAHAMA ADVANTAGE

The Action Lab promotes accelerated development of coastal resilience solutions through the distinct natural and institutional advantages conferred through its partnership with the Grand Bahama Port Authority and its unique geographical location:

VAST AND DIVERSE LAND AND OCEAN ACCESS

Facilitated access to 100 sq. miles of island ecosystems, including coral reefs, deep sea continental shelves, seagrass meadows, mangrove and pine forests, mud flats, and beaches

LIGHT TOUCH REGULATORY FRAMEWORK

Streamlined permitting processes within the low-tax free-trade zone of Freeport

STRONG GOVERNMENT RELATIONS

The Bahamian government is committed to investing in its blue economy, recognizes the need for urgent action to protect its natural resources, and supports efforts to foster coastal and ocean resiliency

TURN-KEY INFRASTRUCTURE

High-quality and underutilized infrastructure, including bulkheaded canalways and shared R&D facilities, to enable affordable and expedited project implementation

PREMIER PARTNERSHIPS

Global network of institutional collaborators to guide, fund, and deploy scalable solutions, including UNEP's Sustainable Caribbean Finance Facility, NEXUS Global, and AltaSea at the Port of Los Angeles

Key benefits of operating in the 'Port Area' free-trade zone include:

- Close proximity to the United States (70 miles from West Palm Beach, 30 min flight to Miami)
- International airport
- Extensive freshwater aquifer
- Deepest port on the Eastern Seaboard with trans-shipment capabilities
- Substantial existing maritime sector
- Bahamian currency tied to USD

AREAS OF IMMEDIATE FOCUS

The Action Lab will initially focus its efforts on solution strategies at the nexus of climate change mitigation and adaptation. Many of these strategies provide substantial social, economic, and environmental co-benefits such as employment, increased access to fresh food and affordable housing, and improved air and water quality.

- Vertical & containerized farming (hydroponics and aquaponics)
- Renewable energy innovation (solar, biomass, wind, wave, algae)
- Ecosystem restoration
- Resilient coastal engineering
- Sustainable aquaculture & mariculture
- Hurricane-proof, modular, low-impact, affordable housing
- Distributed desalination
- Waste management and the circular economy
- Ocean exploration
- Climate smart marine technology

TEST CASE & CORNERSTONE ENTERPRISES

Coral Vita, a pioneering reef restoration company, currently operates on the Action Lab site and is a testament to the advantages found in Freeport. Coral Vita grows climate change-resilient coral up to 50x the natural growth rate, providing an economic engine on Grand Bahama and proving out a model that can be scaled globally to restore the world's dying reefs. The farm also acts as an eco-tourism attraction and education center, helping raise ocean awareness with tourists and local populations.

AgriSea works to solve world hunger by designing and implementing a truly sustainable food system through ocean agriculture. They have developed cropping systems for high salt conditions, such as salinated soils and coastal ocean waters. These unique crops are adapted to enhance a natural form of salt tolerance that originally evolved in seagrasses 75 million years ago and is now found in all plant-based foods. Their economically and environmentally sustainable ocean farms allow these crops to thrive in an ocean environment, similar to hydroponics.

VISION

The Action Lab will be a regional hub for all mission-aligned educational and research entities, startups, and thought-leaders to convene in a dynamic, collaborative environment. The Action Lab will provide affordable, state-of-the-art facilities designed to develop and foster rapid deployment of critical resiliency and climate smart solutions.

Headquartered on a 30-50 acre site bordered by bulkheaded canal systems in a larger planned development, the Action Lab will house an ecosystem of innovators and resources under a common purpose of building resilience in a timeframe - and at a scale - that meets the demands of climate change.

(Potential site on Grand Lucayan Waterway)

- Co-working/living facilities
- Research & development park
- Aquaculture facilities
- Additional 200-acre testing site in carefully selected area of Grand Bahama
- Accelerator program for impact enterprises
- Green Sail marina facilities
- Affordable land with water access for business development and case testing
- Renewable energy solar farm and micro-grid
- Circular economy of production and wasteflows
- Agricultural park to scale farming enterprises

BUSINESS MODEL

The Action Lab will be a non-profit entity with a long-term development plan to establish complementary social enterprise structures that include for-profit (design, develop, commercialize, license) and nonprofit (research, education, outreach, open-source) business models.The Action Lab will work with all types of funding entities, from philanthropists and NGOs to impact and profit-driven investors.

Potential revenue streams include:

- Real estate, marina sale & rental income
- Technology licensing
- Amenity and service fees
- Corporate sponsorships
- Co-working membership model
- Accelerator revenue model
- Event hosting fees
- Grant funding & sustainable financing

IMPACT MISSION

The Action Lab believes a truly sustainable future is rooted in building equitable and resilient institutions and communities. To that end, the Action Lab is dedicated to helping raise the next generation of informed, empowered, and equipped businesses and citizens in the Bahamas and beyond. The 21st century will be full of challenges for low-lying coastal and island states and their surrounding oceans. New and adaptive institutions are needed to generate innovative, closed-loop systems and the skilled workforce required to operate them.

The Action Lab is dedicated to fostering both the technologies and systems needed to address the challenges of climate change, as well as the resilient individuals and communities central to them. Our goal is to scale technologies and systems that will ensure equitable access to the vital resources of fresh water, healthy and sustainable food, clean, renewable energy, and resilient, affordable housing.

COMMUNITY IMPACT GOALS

- Raise awareness of causes and effects of climate change
- Empower the next generation to take action
- Increase understanding of local ecology
- Provide opportunity through blue and green economy job skills training
- Facilitate sustainable infrastructure investment in frontline communities
- Increase access to fresh, healthy, local food
- Generate adaptive and sustainable closed looped systems
- Provide equitable access to a collaborative environment and state-of-the-art facilities through mentorship and internship programs focused on local residents
- Decarbonise energy and transport systems in island nations
- Encourage community and stakeholder collaboration

FOUNDING PARTNER

The Grand Bahama Port Authority, Limited (GBPA) is a privately held corporation that acts as the municipal authority for the city of Freeport and the 230 square mile free-trade zone. The GBPA issues all business licenses to operate in the Port Area on Grand Bahama Island, and is responsible for the development, administration, management, and provision of services within the "Port Area".

STRATEGIC PARTNERS

The Government of the Commonwealth of The Bahamas leads a nation comprised of 700 islands and over 2,000 rocks and cays, sprinkled over 100,000 square miles of ocean. This ecological oasis 50 miles off the coast of Florida is home to the world's third largest fringing barrier reef and a population of 350,000.

The Ministry of Agriculture and Marine Resources for The Bahamas is tasked with channelling resources that support the farming and fisheries sectors to fuel economic development and improve quality of life, as well as protecting and preserving The Bahamas' agricultural and marine resources for future generations. Among its many responsibilities, the Department of Marine Resources grants permits for commercial fishing and aquaculture.

The Grand Bahama Development Company Limited (DEVCO) is responsible for master planning the land within the Lucaya area of Grand Bahama Island. Its portfolio of 75,000 acres of developable land contains approximately 40,000 individual lots in 45 subdivisions, 10 miles of pristine beachfront development property and twenty miles of fully bulk headed seawater canal systems.

The Sustainable Caribbean Finance Facility (SCFF) is exploring a pilot program in Grand Bahama (scalable for the Caribbean region) for food security, agricultural value chain resiliency, and farmer empowerment to mitigate and to adapt to the impacts of climate change. SCFF is an initiative of the United Nations Environment Programme, and will facilitate scaling solutions developed at the Action Lab.

AltaSea at the Port of Los Angeles accelerates scientific collaboration, facilitates job creation and inspires the next generation for a more sustainable ocean through a unique public-private ocean institute.

Braid Theory brings together entrepreneurs, industry influencers and corporate partners to accelerate adoption of transformative technology, drive market growth and create profitable collaborations for maritime-related businesses.

PARTNERS IN DISCUSSION

NEXUS

FOUNDATION FOR CLIMATE RESTORATION

GLOBAL ISLAND PARTNERSHIP

The Island School

CARIBBEAN CLIMATE-SMART ACCELERATOR

UB

WATERKEEPER® ALLIANCE

SOA
SUSTAINABLE OCEAN ALLIANCE

CARICOM

OCEAN UNITE

SAVE THE BAYS

ADVISORS & AMBASSADORS

Jenny Krusoe
Founding Executive Director
AltaSea

The Hon. Michael Pintard
Minister of Agriculture & Marine Resources
The Government of the Bahamas

Nakira Wilchcombe
Director of Building & Development Services
GBPA

Ann Carpenter
Co-Founder
Braid Theory

Rashema Ingraham
Executive Director
Waterkeepers Bahamas & Save the Bays

Janot Mendler de Suarez
Technical Consultant
World Bank & Red Cross

David Dietz
Director of Impact Initiatives
NEXUS Global

Keith Agoada
Co-Founder
Producers Market

Chris Maxey
President & Founder
The Island School

Dr. Angus Friday
Executive Chairman, Atlantean Biosphere Program
Co-Chair, Blue Innnovation Institute
Advisor, Caribbean Climate Smart Accelerator

MEET THE TEAM

BLUE ACTION LAB

Rupert Hayward
rupert@blueactionlab.com | +1 (242) 727-0149
- Bahamian national and Principal and Exec. Director GBPA and DEVCO
- Advisor to Global Harvester Holdings, a UK Green Merchant bank
- MBA, Presidio Graduate School, sustainable business management

Jeff Stoike
jeff@blueactionlab.com | +1 (203) 507-9890
- Founder of the Urban Institute's Climate Philanthropy Project
- Former Special Advisor for Strategic Futures at the U.S. State Department
- Doctorate in International Sustainable Development from Yale University

Melissa Hickey
melissa@blueactionlab.com | +1 (242) 828-9058
- California-licensed commercial contracts and technology transactions attorney
- Experienced building international technology partnership programs
- J.D., University of San Diego School of Law, Intellectual Property

Courtney Cardin
courtney@blueactionlab.com | +1 (242) 824-3035
- Corporate attorney & sustainable investment and regenerative economic development advisor
- Founding partner of global impact investment consultancy; lead agrifood tech advisor to VC funds
- J.D., Georgetown University Law Center

Josh Fain
josh@blueactionlab.com | +1 (706) 264-4355
- Forester, researcher & consultant on adaptation and mitigation strategies in forestry, agriculture
- Co-author of Caribbean chapter of 4th U.S. National Climate Assessment
- Co-founder of U.S. Department of Agriculture Caribbean Climate Hub
- MEM, Yale School of the Environment

Rosie Hayward
rosie@blueactionlab.com | +1 (242) 802-9060
- Bahamian national and purpose driven project manager
- Project lead for triple-bottom-line company in the emerging markets sustainable textiles industry
- BSc. (Hons) in Marketing and Management of Fashion Textiles, University of Manchester

VISIT US ONLINE

www.blueactionlab.com

www.twitter.com/blueactionlab

www.linkedin.com/company/blueactionlab

www.instagram.com/blueactionlab