KELP CONSERVATION INITIATIVE

# Corporate Plan

The restoration and preservation of kelp forests

2024 - 2026

# Table of Contents



KELP CONSERVATION INITIATIVE

# Executive Summary

The environmental need for kelp restoration is pressing, driven by the escalating threats, which demand innovative solutions and collaborative efforts.

Collaboration between research institutions, conservation groups, and businesses is essential to address the environmental need effectively. The Kelp Conservation Initiative works on a model whereby we work collaboratively with a range of industry, NGO and scientific partners to deliver change.

The urgency of addressing kelp degradation creates market opportunities for restoration initiatives. Governments, NGOs, and environmental organisations are increasingly recognising the importance of kelp restoration in mitigating climate change and preserving marine biodiversity. Subsequently, funding opportunities are emerging as stakeholders recognize the long-term benefits of investing in kelp restoration for a sustainable marine environment.

| | |
|---|---|
| Mission | To create a thriving marine environment through the restoration and preservation of kelp forests, fostering a sustainable and biodiverse future for our planet's oceans. |
| Vision | To revitalise and safeguard kelp ecosystems globally through scientific innovation, community engagement and proactive conservation efforts. We aim to restore and maintain the health of these vital underwater habitats, ensuring the longevity of marine life and the overall ecological balance. |
| Purpose | Our purpose is to lead the charge in kelp conservation, leveraging research, education and collaborative action to restore, protect and celebrate the invaluable contributions of kelp forests to our oceans. |
| Leadership | The Kelp Conservation Initiative is a CIC, led by Alison Freeman. The organisation currently has no employees but works with a host of scientific, industry, NGO and government partners to deliver their work. |
| The Financial Status | In 2023, we secured funds of £400k to develop the UK's first Green Gravel Kelp Restoration project. Across 2024 - 2026, we are targeting an additional £1,128,000 to support education opportunities, research and development, our core costs, and develop our corporate strategy. |
| Future Plans | Our goal is to restore an initial 1.5 hectares of kelp forests using the green gravel method, develop artificial reefs to house juvenile kelp beds, develop restoration projects in partnership with the fishing industry, and increase our corporate revenue through the development of carbon and nature credits. |

# The Organisation

## The Kelp Conservation Initiative

The Kelp Conservation Initiative (TKCI) Community Interest Company (CIC) is a non-profit organisation, committed to the restoration and preservation of kelp forests, driven by a charitable purpose deeply rooted in environmental stewardship. Our mission is to create a thriving marine environment through community-driven initiatives, innovative research, and the sustainable management of kelp ecosystems. The core values of TKCI encompass a dedication to ecological integrity, scientific excellence, and community engagement.

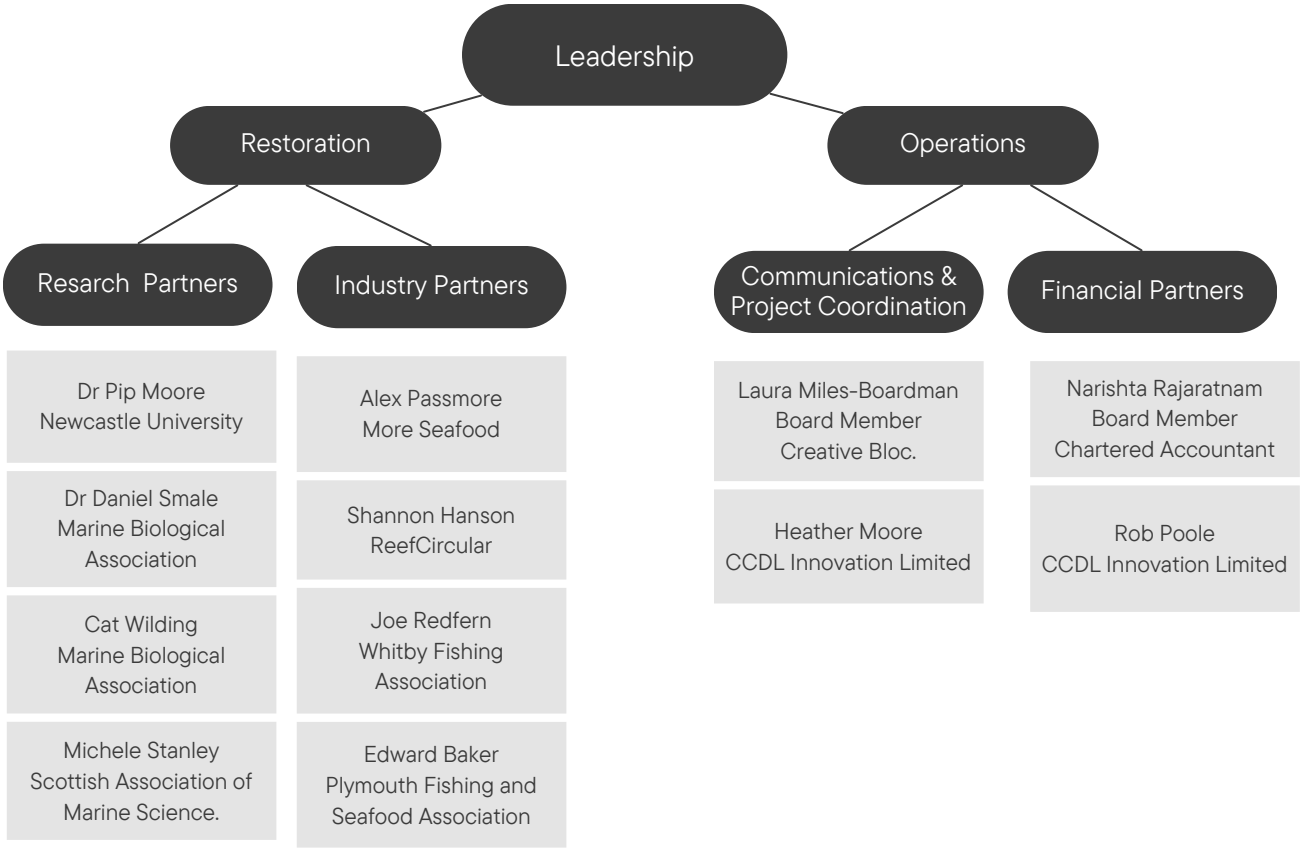
Structured as a collaborative network, TKCI leverages the expertise of marine biologists, environmentalists, and community leaders to address the multifaceted challenges facing kelp ecosystems. This inclusive approach ensures that our initiatives are not only scientifically robust but also culturally and socially sensitive. The organisation operates transparently, upholding accountability and integrity in all its endeavours, and relies on a combination of grants, donations, and partnerships to support its charitable activities. The unique synergy of purpose, values, and structure positions The Kelp Conservation Initiative as a catalyst for positive change in marine conservation efforts.

# Leadership & Partners

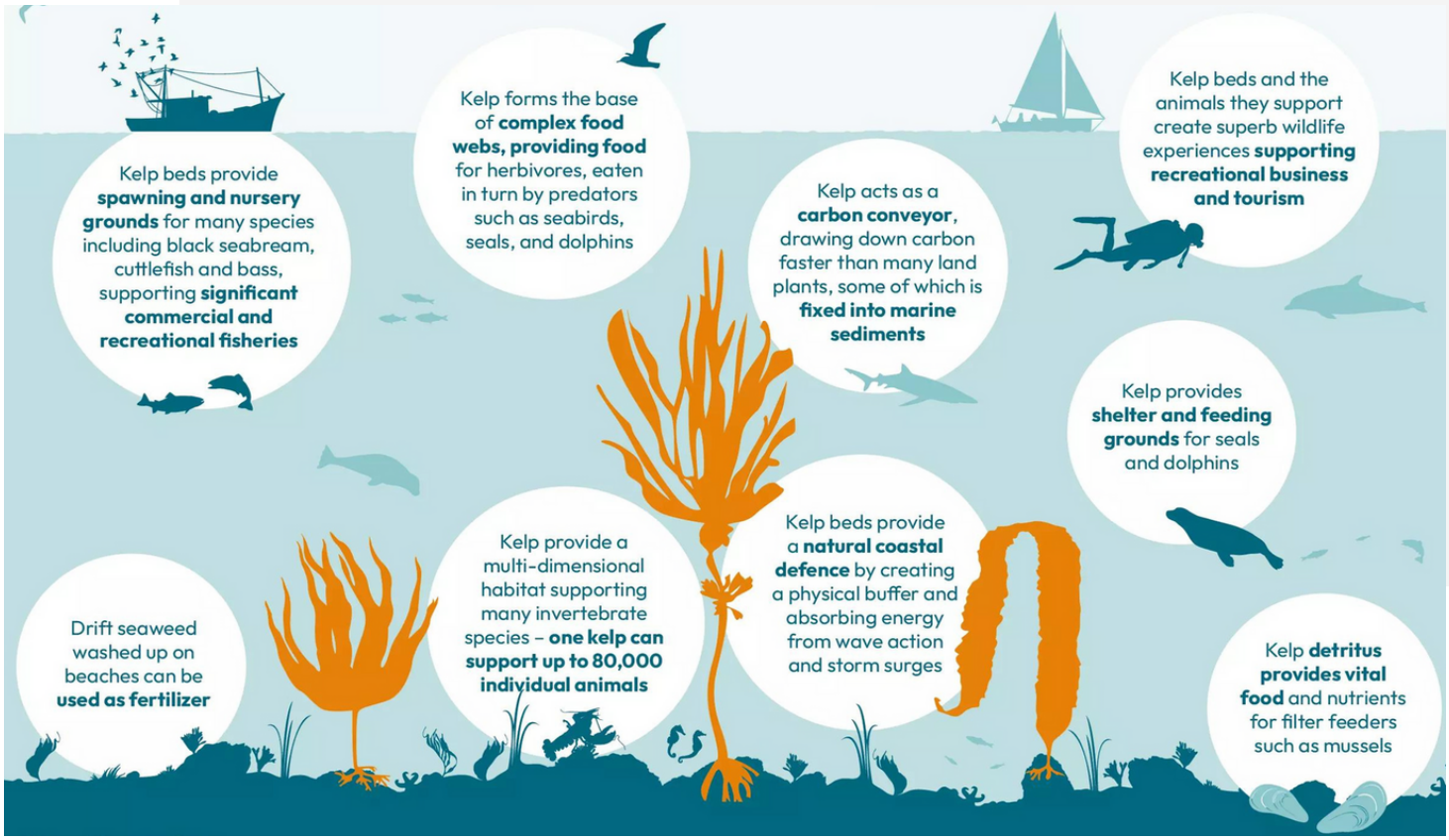
Alison Freeman

**Founder**

Alison oversees the restoration projects, ensures alignment with goals and timelines, coordinates communication between different teams and stakeholders. She fundraises and fosters positive relationships between the project, scientific, and local communities for project sustainability. Alison has a BSc with Hons in Conservation Biology and and Masters of Research degree in Sustainable Aquaculture and Fisheries, and has worked in marine conservation for 10 years.



# Kelp: Ecosystem Benefits




The environmental need for kelp restoration is paramount due to the critical role kelp forests play in maintaining marine ecosystem health. Kelp habitats support vital important ecosystem services, including fisheries habitats, biogenic coastal protection, nutrient cycling and carbon uptake and storage. Globally, these ecosystem services are valued at $500 billion per year.

Kelp forests are distributed across one-third of the world's coastlines. The UK and Ireland represents an important area for kelps, with 7 different species found along ~19,000 km of the UK's coastline and predicted to inhabit an area comparable to broadleaf forests on land.

# The Strategy and Implementation Plan

Kelp forests are in decline in many regions, and are vulnerable in the UK to stress factors such as overgrazing, increased storminess, coastal pollution, ocean warming, non-native invasive species, disease, and fishing activities. Kelp forests are listed as a threatened habitat by the OSPAR Commission.

As the UN Decade on Ecosystem Restoration gathers pace, it is vitally important to develop approaches to restore the full range of coastal ecosystems that have been degraded by human activities. While much research has focused on coral, mangrove and seagrass restoration, far less attention has been given to kelp forests, despite their huge ecological and socioeconomic importance.

Given that kelp forests are by far the most spatially extensive and productive coastal vegetated ecosystems in the UK and Ireland, this represents a major issue for marine management and conservation. The urgency of addressing kelp degradation creates market opportunities for restoration initiatives. Governments, NGOs, and environmental organisations are increasingly recognising the importance of kelp restoration in mitigating climate change and preserving marine biodiversity.

The Kelp Conservation Initiative seeks to advance our understanding and application of kelp restoration through four key steps.

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# 1. Priority Restoration Approaches

**A. Seeding and Transplantation:**

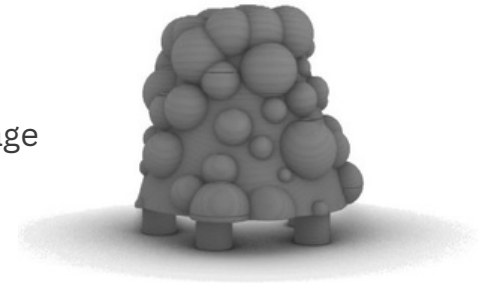
Introduce kelp spores and young plants into degraded areas to accelerate natural recovery.

***A. Green Gravel Method***

The restoration approach inoculates (or seeds) natural substrates such as gravel with kelp spores in controlled laboratory conditions. Growth is monitored in a nursery until the kelp is mature enough to be out-planted into the marine environment with the intention of creating a new kelp forest, especially if the plants being reproductively mature and the population can maintain itself.

**B. *Other direct seeding methods and seeding other substrates such as biodegradable rope and seed bags.***


**B. Artificial Reefs:**



Deploy purpose-built structures to provide substrates for kelp attachment, enhancing growth and shelter for marine life. Manage artificial reef structures to optimise kelp growth.

**C. Selective Grazing Management:**
Implement exclusion zones and controlled grazing by herbivores to manage the balance between kelp and grazing species, preventing overconsumption and to optimise kelp growth, where appropriate.

# 2. Technology, Innovation and Monitoring

There is a growing demand for innovative technologies in kelp restoration.

Remote sensing, data analytics, and advanced monitoring tools are becoming integral for assessing the health of kelp forests and implementing targeted restoration efforts. Visualising the seafloor is critical to document restoration success and habitat integrity, yet this presents a number of challenges that makes the entire process expensive, time-consuming, and not applicable to large-scale monitoring.

The use of novel marine technology solutions, such as drones and Remote Underwater Vehicles (ROV), provide an avenue to identify areas in need of restoration and could streamline the monitoring process, while reducing costs and often the need for highly specialised scientific personnel.

| ROVs | Artificial Intelligence | Sensor Technologies | Genetics |
|---|---|---|---|
| • Conduct seeding and transplantation activities.<br>• Regularly monitor kelp forest health<br>• Collect data on environmental variables, including temperature, nutrient levels, and water quality.<br>• Assess the impact of restoration efforts to determine survival and growth rate. | • Adaptive Management Protocols: Develop protocols based on ongoing research findings to adapt restoration strategies in response to changing environmental conditions and unforeseen challenges. | • Real-time Monitoring: Implement continuous monitoring systems, combining sensor technologies and citizen science, to assess the success of restoration efforts in real-time. | • Evaluate the resilience of genetically diverse kelp populations to environmental stressors.<br>• A predictive model will be developed and accessible to the public, whereby users could assess the vulnerability of local kelp beds based on the genetic diversity and hydrodynamic conditions of a kelp bed. |

# 3. Priorities for Science

| | |
|---|---|
| a. Remote Sensing and GIS Mapping: Utilise satellite imagery and GIS technology to assess kelp forest health, monitor changes, and identify optimal locations for restoration. | b. Environmental DNA (eDNA) Analysis: Employ eDNA techniques to detect and quantify kelp species presence, aiding in monitoring and evaluating restoration success. |
| c. Population Genetics Studies: Conduct genetic analyses to understand the diversity and connectivity of kelp populations, informing strategic restoration planning. | d. Carbon credits: Testing the sequestration value of kelp beds examining species composition, environmental variables and canopy cover. |

# 4. Community Partnerships

1. Community Engagement Workshops: Organise workshops to educate local communities about the importance of kelp ecosystems, seeking their involvement in restoration initiatives.
2. Skill-building Programs: Empower local residents with skills in monitoring, data collection, and basic restoration techniques, fostering a sense of ownership and sustainability.
3. Collaborative Decision-Making: Establish community-led committees to facilitate collaboration between scientists, conservationists, and local stakeholders, ensuring a holistic approach to restoration.
4. Volunteer opportunities: Encouraging citizen science and involvement in restoration activities.

KELP CONSERVATION INITIATIVE

# Impact Assessment

## Restoration Projects

### Kelp Biomass Increase

Measure the overall increase in kelp biomass within restored areas compared to baseline levels, indicating the success of transplantation and seeding efforts.

### Diversity of Marine Species:

Assess the diversity and abundance of marine species within the restored kelp forests, indicating the effectiveness of restoration in providing habitat and supporting biodiversity.

### Population Density of Key Species:

Monitor the population density of key species, such as fish and invertebrates, that rely on kelp ecosystems, indicating the restoration's impact on the broader marine community.

### Kelp Reproduction Rates:

Evaluate the reproductive success of restored kelp populations by assessing spore release, gamete production, and recruitment, indicating the sustainability of the restored ecosystem.

## CIC’s Impact on the Marine Ecosystem

### Expansion of Restored Areas

Track the expansion of restored kelp forest areas over time, indicating the scalability and effectiveness of the charity's initiatives.

### Community Engagement and Collaborative Partnerships

Assess the level of community involvement and awareness through metrics such as workshop attendance, volunteer participation, and social media engagement.

### Scientific Publications and Contributions:

Track the publication of research findings and scientific contributions resulting from the CIC’s initiatives, indicating the organisation's influence on the broader scientific community.

### Policy Influence and Advocacy Success

Measure the CIC's influence on environmental policies and regulations related to marine conservation, indicating success in advocating for positive change at a broader level.

### Long-Term Sustainability of Projects:

Assess the longevity and sustained health of restored kelp ecosystems over an extended period, indicating the long-term impact and success of the charity's restoration projects.

# Future Plans


| 2024 | 2025 | 2026 |
|---|---|---|
| 1. 0.5 ha of restored kelp beds, testing the Green Gravel method in Tees Coastal and Plymouth.<br>2. 2 x PhD studentship testing innovative kelp restoration techniques.<br>3. 1 x PhD studentship investigating the carbon sequestration potential of kelp.<br>4. Artificial Reef deployment with ReefCircular, using Brixham and Ullapool as test sites.<br>5. Out-planting activities and workshops with fishing fleets in NE and SW England. | 1. 1.0 ha of restored kelp beds, using the GG method.<br>2. Continuation of PhDs<br>3. Development of two facilities producing reefs (Brixham and Ullapool)<br>4. Commence genetic population and environmental DNA study with the Scottish Association of Marine Science.<br>5. Incorporation of ROVs, remote sensing, GPS tracking, and use of AI into PhD studies..<br>6. School visits to the Marine Biological Association. | 1. Further development of AI and ROV technologies to scale monitoring and restoration activities.<br>2. Continuation of genetic studies.<br>3. Pursuit of new restoration methods and scaling proven techniques. |

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# Communications

**Media Campaigns:**

1. Comprehensive media campaigns to raise public awareness about the importance of kelp restoration, encouraging community involvement and support.
2. Develop and execute strategic social media campaigns on platforms Instagram, Twitter, and Facebook.
3. Share engaging content, including project updates, educational materials, and success stories on the website.
4. Implement an email marketing strategy to keep supporters informed about ongoing projects, events, and funding opportunities.
5. Segment email lists for targeted communication to various stakeholders.
6. Website Optimisation: Design and optimise a user-friendly website providing information on kelp restoration projects, goals, and impact, and integrate donation portals and volunteer sign-up forms for seamless engagement.

**Community Engagement:**

Workshops and Events:

1. Host community workshops, webinars, and events to educate the public about the importance of kelp restoration.
2. Facilitate hands-on experiences pertaining to restoration activities.

Educational Initiatives:

1. Collaborate with schools and educational institutions to integrate kelp restoration topics into curricula, creating a future generation aware of marine conservation.
2. Facilitate skill-building sessions and out-planting activities for the fishing community and other local residents
3. Maintain communication with local communities, scientific collaborators, and funding partners.

**Partnership Coordination:**

1. Maintain communication with local communities, scientific collaborators, and funding partners.
2. Coordinate with governmental bodies for necessary permits and approvals.

# Financial Plan

## Financial History

In 2023, our first year of operation, we secured funds of £400k to develop the UK's first Green Gravel Kelp Restoration project from NGOs (£181k) and government (£219k).

## Financial Projections

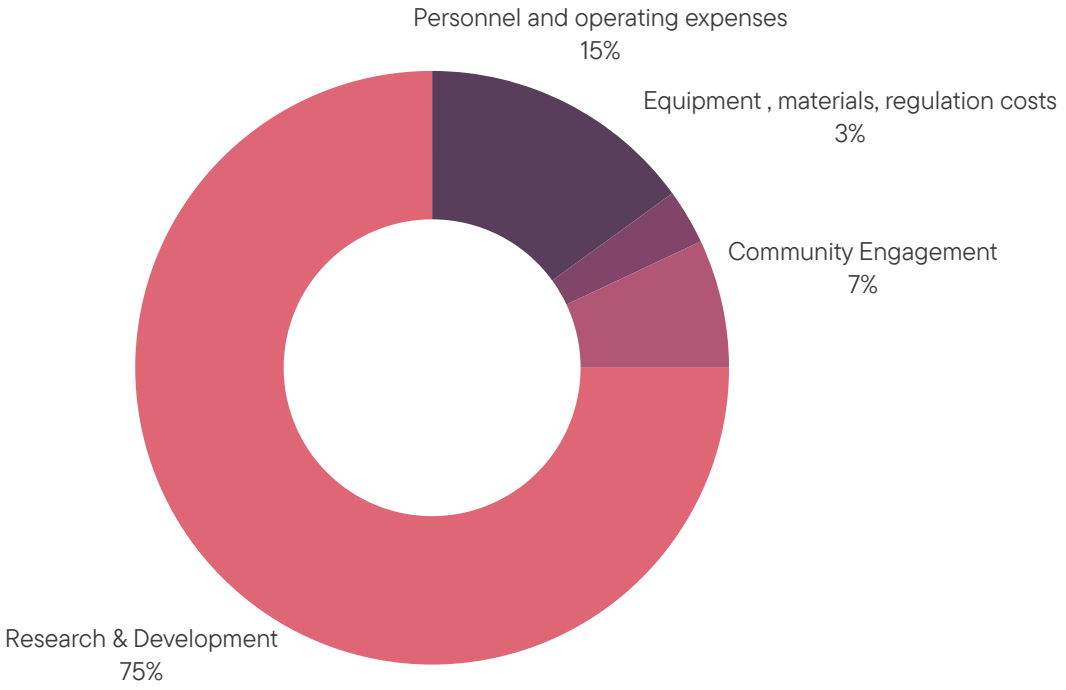
In 2024 - 2026, we are targeting an additional £1,128,000 to support research and development, our core costs, and develop our corporate strategy. The Kelp Conservation Initiative will pursue grants from governmental and non-governmental sources, along with establishing partnerships with philanthropic organisations to secure necessary funding.

As a long-term strategy, we will develop and engage with corporate businesses for financial support and in-kind contributions, fostering a sense of corporate responsibility toward environmental conservation.

## Fundraising Objectives

| **Funding Source** | **Objective** | **Financial Projections** |
|---|---|---|
| Crowdfunding Campaigns | • Launch targeted crowdfunding campaigns to raise funds for specific restoration projects.<br>• Utilize social media and email marketing to promote these campaigns. | £50,000 |
| Corporate Partnerships | • Forge partnerships with local businesses for joint fundraising initiatives, sponsorships, or donation matching programs.<br>• Recognize and promote businesses supporting the cause.<br>• Establish partnerships with businesses for financial support, in-kind contributions, and joint fundraising initiatives. | £150,000 |
| Grants and Foundations | • Grants from environmental, conservation, and research-focused foundations supporting marine initiatives. | £430,750 |
| Government Support | • Seek funding from government agencies involved in environmental conservation, marine research, and sustainable development. | £497,250 |
| TOTAL | | £1,,128,000 |

# Funding




## Capital Requirements (2024 - 2027)

| | **Value** | **Percentage** |
|---|---|---|
| Research and Development | £850,000 | 75% |
| Personnel and operational expenses | £170,000 | 15% |
| Licenses and Regulations, Equipment and Materials | £23,000 | 3% |
| Community Engagement | £85,000 | 7% |
| TOTAL | 1,128,000 | 100% |

# Long-Term Sustainability

a. Diversification of Funding Streams:
- Continuously explore and diversify funding sources to reduce reliance on any single channel, ensuring financial stability.

b. Corporate Social Responsibility (CSR) Programs:
- Develop long-term partnerships with corporations through CSR programs, fostering ongoing financial support and collaboration.

c. Membership Programs:
- Create membership programs offering exclusive benefits to supporters, encouraging donations and fostering a sense of community.

d. Impact Investment:
- Explore opportunities for impact investment, attracting investors aligned with the CIC's mission and willing to contribute to both social and environmental goals.

e. Commercial Ventures:
- Develop sustainable commercial ventures, such as eco-tourism initiatives or merchandise sales, with profits directly supporting the charity's projects.

f. Strategic Alliances:
- Form strategic alliances with other conservation organisations, research institutions, and NGOs to leverage collective resources for mutual benefit.

By implementing these budgeting, funding source, and long-term sustainability strategies, the kelp restoration charity aims to establish a solid financial foundation, ensuring the continued success and impact of its initiatives in the preservation and restoration of kelp ecosystems.

KELP CONSERVATION INITIATIVE

# Risk Management Strategy

We will regularly review and update this risk management strategy will ensure the adaptability and resilience of the kelp restoration projects, minimising potential challenges and enhancing the overall success of the initiatives.

| **Challenge** | **Mitigation Plan** |
|---|---|
| Funding Shortfalls: | Establish diverse funding streams to reduce reliance on a single source. Regularly update grant applications, engage in continuous fundraising efforts, and explore partnerships with businesses for sustained financial support. Develop contingency plans to scale back temporarily during funding uncertainties. |
| Technical Failures (Monitoring Equipment, Seeding Tools): | Regularly maintain and update monitoring equipment and seeding tools. Keep spare equipment on hand to quickly replace malfunctioning components. Provide training to field personnel on equipment troubleshooting and ensure immediate response to technical issues. |
| Regulatory Delays and Compliance Issues | Develop strong relationships with relevant regulatory bodies. Engage proactively with permitting processes, seeking early input to avoid delays. Maintain transparency in project operations to ensure ongoing compliance with environmental regulations. |
| Scientific Uncertainties | Regularly review and incorporate the latest scientific findings into restoration strategies. Engage in ongoing research to address knowledge gaps and adapt methodologies based on new insights. Foster collaborations with research institutions for a more comprehensive scientific approach. |
| Unintended Ecological Consequences:** | Conduct thorough environmental impact assessments before and during restoration projects. Establish adaptive management protocols to respond quickly to unexpected ecological changes. Collaborate with ecologists and environmental scientists to continually assess and adjust restoration strategies. |
| Community Opposition or Misunderstanding:* | Implement robust community engagement strategies, including frequent communication, workshops, and educational programs. Address concerns promptly and transparently. Adjust restoration plans based on community feedback and consider the cultural significance of kelp in local contexts. |
| Limited Genetic Diversity in Restored Populations: | Prioritise the use of locally adapted kelp genotypes in restoration efforts. Conduct genetic assessments to monitor the diversity of restored populations. Implement ongoing research to enhance genetic diversity and resilience within restored kelp ecosystems. |

# Contact us for further enquiries

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