

EDUCATIONAL AND PUBLIC AWARENESS INITIATIVES IN MARINE CONSERVATION: A COMPARATIVE STUDY BETWEEN PENANG AND TONGYEONG

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1.0 INTRODUCTION

The urgency of marine conservation has markedly increased as the world's oceans confront unprecedented pressures. Anthropogenic stressors such as overfishing, pollution, climate change, and habitat degradation are imposing severe burdens on marine ecosystems. These ecosystems are not only the cornerstone of marine biodiversity but also play a critical role in maintaining planetary ecological balance. Oceans act as a vital component of the Earth's life-support system by regulating the global climate, producing oxygen, and providing livelihoods and food security for billions of people worldwide. Despite their immense value, marine ecosystems are deteriorating at an alarming rate, jeopardizing the environmental, economic, and social benefits they provide.

Marine conservation efforts have evolved significantly in recent decades, driven by growing recognition of the ocean's pivotal role in combating climate change and sustaining biodiversity. Global initiatives, such as the United Nations Sustainable Development Goal 14 (Life Below Water), highlight the need to conserve and sustainably use ocean resources. Yet, achieving these goals requires concerted efforts at multiple levels—international, national, and local. Localized actions, including community-driven conservation projects and public awareness campaigns, are particularly crucial for fostering collective responsibility and achieving long-term sustainability.

Public awareness plays a pivotal role in fostering sustainable practices and supporting marine conservation initiatives. Educational and outreach programs have emerged as essential tools for enhancing public understanding of the intricate connections between human activities and ocean health. By employing diverse strategies, these programs aim to inspire behavioral changes that benefit marine ecosystems and promote sustainable practices. For example, participatory initiatives such as beach clean-ups, citizen science projects, and interactive workshops have proven effective in engaging communities. However, challenges persist in translating awareness into consistent, widespread action, necessitating comprehensive approaches to bridge the gap between knowledge and practice.

This study focuses on comparing educational and public awareness initiatives related to marine conservation in Penang, Malaysia, and Tongyeong, South Korea. Both regions are coastal areas with rich marine biodiversity and strong cultural ties to the sea, yet they face distinct environmental challenges and socio-economic contexts. Penang, as a rapidly urbanizing island state, grapples with issues such as coastal development and pollution, while Tongyeong, known for its traditional fishing

culture, is contending with resource depletion and habitat loss. By analyzing these regions' approaches, this research aims to provide insights into effective strategies for fostering public engagement in marine conservation and addressing the unique socio-cultural and environmental contexts influencing these efforts. Furthermore, the comparative analysis seeks to contribute to the broader understanding of how regional differences shape the design and implementation of conservation initiatives, offering lessons that can be applied to other global contexts.

1.1 Problem statement

Despite the growing recognition of marine conservation's importance, significant gaps exist in understanding how public awareness and educational initiatives can effectively translate into tangible conservation outcomes. While programs in Penang and Tongyeong aim to foster public engagement, their effectiveness varies due to differing environmental challenges, cultural values, and socioeconomic dynamics. Limited comparative studies have explored how these factors influence the design, implementation, and impact of marine conservation initiatives across diverse contexts. This gap hinders the development of tailored strategies that maximize public involvement and conservation success.

1.2 Hypotheses

1. Public awareness and educational initiatives in Tongyeong are more culturally integrated and locally tailored than those in Penang, leading to higher levels of community engagement.
2. Educational programs in both regions that utilize interactive and locally relevant approaches are more effective in fostering sustainable behaviors and conservation awareness.
3. Socioeconomic factors and accessibility significantly influence the reach and perceived impact of marine conservation initiatives in Penang and Tongyeong.

1.3 Objectives

1. To document and compare the educational and public awareness initiatives related to marine conservation in Penang and Tongyeong.
2. To evaluate the reach, content, and perceived effectiveness of these initiatives in fostering sustainable behaviors and conservation awareness.
3. To identify key factors influencing the success and limitations of public engagement efforts in each region.
4. To provide recommendations for enhancing educational strategies and public awareness campaigns to support marine conservation in similar contexts globally.

2.0 LITERATURE REVIEW

2.1 State of Marine and Coastal Ecosystems

The health of marine and coastal ecosystems continues to decline globally due to increasing anthropogenic pressures. Halpern et al. (2015) conducted a comprehensive analysis of cumulative human impacts on marine ecosystems, revealing that no area is unaffected by human influence, with a large fraction (41%) strongly affected by multiple drivers. The primary stressors include overfishing, pollution, climate change, and habitat destruction (Fig. 1). Climate change, in particular, is causing significant alterations in marine environments. The IPCC Special Report on the Ocean and Cryosphere in a Changing Climate (2019) highlights that the global ocean has warmed unabated since 1970, with a likely doubling of the frequency of marine heatwaves since 1982. These changes have far-reaching consequences for marine biodiversity and ecosystem functioning. Poloczanska et al. (2013) conducted a meta-analysis of 1,735 biological time series, finding that marine species are responding to climate change at a faster rate than terrestrial species, with implications for ecosystem structure and functioning.

Coastal areas face additional challenges due to rapid urbanization and development. A study by Neumann et al. (2015) projected that the global population in the low-elevation coastal zone could increase to 1.4-2.1 billion by 2060, exacerbating pressures on coastal ecosystems. This population growth is accompanied by increased coastal development, which Dafforn et al. (2015) identify as a

major driver of habitat loss and degradation in marine environments. The impacts of pollution on marine ecosystems are becoming increasingly evident. Jambeck et al. (2015) estimated that 4.8 to 12.7 million metric tons of plastic waste entered the ocean in 2010 alone, with significant ecological consequences. Moreover, Diaz and Rosenberg (2008) report on the expanding "dead zones" in coastal waters due to eutrophication, affecting over 245,000 square kilometers globally.

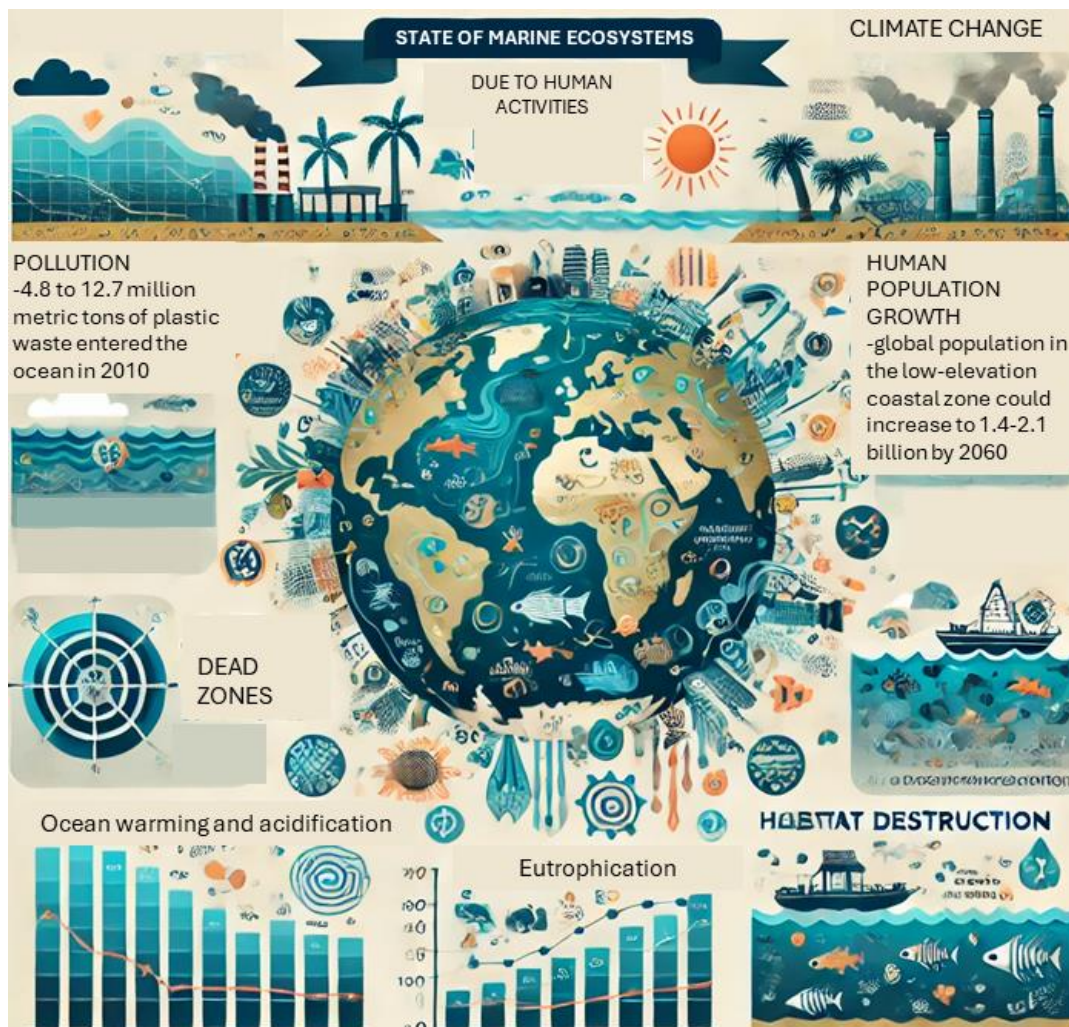


Fig. 1. State of marine and coastal ecosystems.

2.2 Effectiveness of Conservation Efforts

Conservation efforts in marine and coastal areas have evolved significantly in recent decades. Lubchenco and Grorud-Colvert (2015) review the progress made in ocean protection, noting that

while there has been an increase in conservation measures, significant challenges remain in achieving global targets. The authors emphasize the need for a diversity of approaches, including both fully protected areas and those that allow sustainable use. Community-based conservation approaches have shown promise in many regions. Gurney et al. (2016) examined 42 community-based conservation projects across the Indo-Pacific, finding that these initiatives can deliver positive outcomes for both biodiversity and human well-being when certain enabling conditions are met. These conditions include supportive local governance structures and clear, legally recognized rights to manage resources.

However, the effectiveness of conservation efforts varies widely. A global analysis by Gill et al. (2017) found that staff and budget capacity are the strongest predictors of conservation impact, highlighting the need for adequate resources in conservation initiatives. This finding underscores the importance of sustainable financing mechanisms for long-term conservation success. The concept of ecosystem-based management (EBM) has gained traction as a holistic approach to marine conservation. Leslie and McLeod (2007) review the principles of EBM, emphasizing its potential to address the complex, interconnected nature of marine ecosystems and human activities. However, Arkema et al. (2006) note that the implementation of EBM faces challenges, including the need for better integration of social and ecological sciences.

2.3 Public Awareness and Education

Public awareness and education play crucial roles in fostering sustainable practices and supporting marine conservation initiatives. Jefferson et al. (2015) argue that ocean literacy – an understanding of the ocean's influence on humans and vice versa – is essential for creating an informed and engaged public. The authors propose a framework for ocean literacy that encompasses knowledge, attitudes, communication, and behavior. Participatory initiatives have proven effective in engaging communities. Cigliano et al. (2015) review the role of citizen science in marine and coastal conservation, finding that such programs can contribute significantly to scientific knowledge while also enhancing public engagement. For example, the Reef Life Survey program, described by Stuart-Smith et al. (2017), has successfully engaged recreational divers in collecting valuable data on marine biodiversity across global scales.

Educational programs tailored to local contexts have shown particular promise. A study by Zicus (2003) in Taiwan demonstrated that marine education programs can significantly improve students' knowledge and attitudes towards marine conservation. Similarly, Hartley et al. (2015) evaluated the effectiveness of a marine citizenship program in the UK, finding that it increased participants' sense of connection to the marine environment and their likelihood of engaging in pro-environmental behaviors. The role of museums and aquariums in marine conservation education has been increasingly recognized (Fig. 2). Ballantyne et al. (2007) examined the impact of aquarium visits on visitors' environmental knowledge and attitudes, finding that such experiences can lead to short-term increases in conservation awareness. However, the authors note the challenge of translating this awareness into long-term behavioral change.

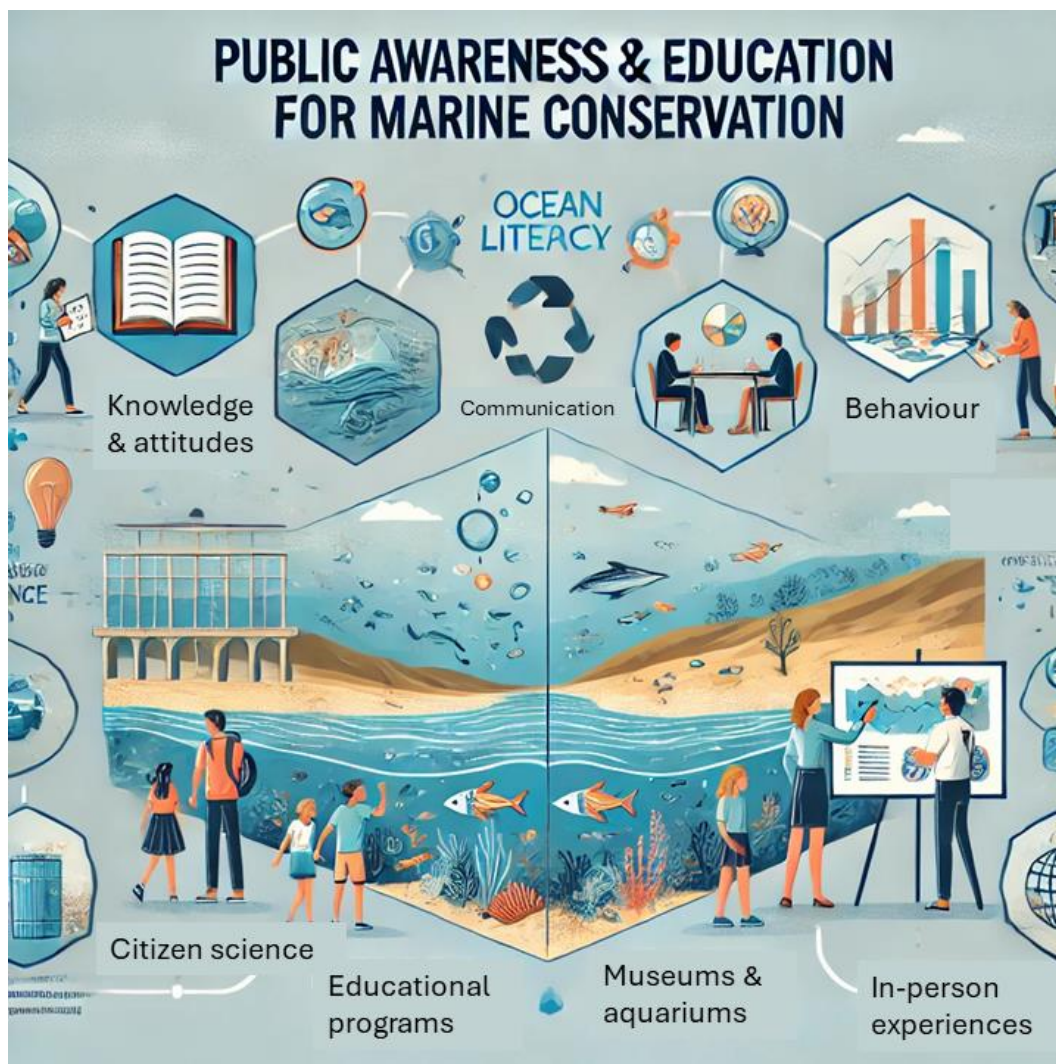


Fig. 2. Public awareness and education for marine conservation.

2.4 Regional Approaches and Challenges

The effectiveness of marine conservation efforts varies across regions due to differing environmental challenges, cultural values, and socioeconomic dynamics. In rapidly urbanizing areas like Penang, Malaysia, issues such as coastal development and pollution are prominent. Chen and Bau (2016) examined the challenges of coastal management in Penang, highlighting the need for integrated approaches that consider both environmental and socio-economic factors. The authors emphasize the importance of stakeholder engagement and adaptive management in addressing complex coastal issues.

In contrast, regions with traditional fishing cultures like Tongyeong, South Korea, face challenges related to resource depletion and habitat loss. A study by Hong and Seo (2018) on the perceptions of fishers in South Korea towards marine conservation highlighted the importance of

considering local knowledge and practices in conservation strategies. The authors found that fishers' support for conservation measures was influenced by their perceptions of the state of marine resources and their trust in management institutions. The effectiveness of conservation efforts can also be influenced by regional governance structures. Christie et al. (2009) compared marine conservation approaches in the Philippines and Indonesia, finding that while both countries face similar challenges, differences in decentralization policies and local governance capacity led to varying outcomes in community-based marine protected area management.

2.5 Role of Government and NGOs

Government policies play a crucial role in marine conservation education and awareness. Parsons and MacPherson (2016) review marine "citizenship" programs in various countries, finding that government-led initiatives can effectively promote ocean literacy and conservation behaviors. The authors highlight successful examples such as the UK's "The Year of the Sea" campaign and Canada's Ocean Literacy Strategy. Non-governmental organizations (NGOs) contribute significantly to marine conservation through educational workshops, research, and advocacy. A study by Burbano et al. (2020) on NGO-led marine conservation in Colombia demonstrated the potential of these organizations to bridge gaps between scientific knowledge and community action. The authors found that NGOs played a crucial role in facilitating dialogue between local communities, scientists, and

policymakers. The collaboration between governments and NGOs can lead to more effective conservation outcomes. For instance, Rife et al. (2013) examined the success of a government-NGO partnership in establishing a network of marine reserves in Baja California, Mexico. The study highlighted how such collaborations can leverage diverse expertise and resources to achieve conservation goals.

2.6 Social Media and Digital Platforms

The power of social media in raising awareness about marine conservation issues has grown significantly. Pearson et al. (2016) examined the role of social media in marine conservation campaigns, finding that platforms like Twitter can effectively disseminate information and mobilize public support. The authors note that social media can amplify conservation messages and facilitate rapid response to emerging threats. Digital technologies are also transforming marine citizen science. Pimm et al. (2015) review the potential of smartphone apps and online platforms to engage the public in biodiversity monitoring, including marine species. These technologies enable real-time data collection and analysis, enhancing the scientific value of citizen contributions. Virtual reality (VR) and augmented reality (AR) technologies are emerging as powerful tools for marine conservation education. Markowitz et al. (2018) explored the use of VR in creating immersive ocean experiences, finding that such technologies can enhance empathy and connection to marine environments, potentially influencing conservation attitudes and behaviors.

The field of marine and coastal conservation is rapidly evolving, integrating diverse approaches from scientific research to community engagement and innovative communication strategies. While progress has been made, significant challenges remain in addressing the complex, interconnected threats to marine ecosystems. As emphasized by Bennett (2018), successful conservation requires careful consideration of local contexts, equitable practices, and adaptive management approaches. The integration of traditional ecological knowledge with scientific research, as advocated by Berkes et al. (2000), offers a promising path forward in developing more holistic and effective conservation strategies.

3.0 METHODOLOGY

3.1 Site Description

The study focuses on Penang, Malaysia (5.4141° N, 100.3285° E; Fig. 3), and Tongyeong, South Korea (34.8530° N, 128.4291° E; Fig. 4), two regions with distinct socio-cultural, environmental, and economic contexts that influence marine conservation efforts. Penang, an island state in Malaysia, features a tropical climate and a mix of urban and natural coastal environments. It faces challenges such as coastal development, pollution, and biodiversity loss. Tongyeong, a coastal city in South Korea, is renowned for its maritime heritage and aquaculture activities. The region's marine conservation initiatives are shaped by efforts to balance traditional industries with modern sustainability demands. These contrasting settings provide a rich comparative framework for analyzing public engagement in marine conservation.

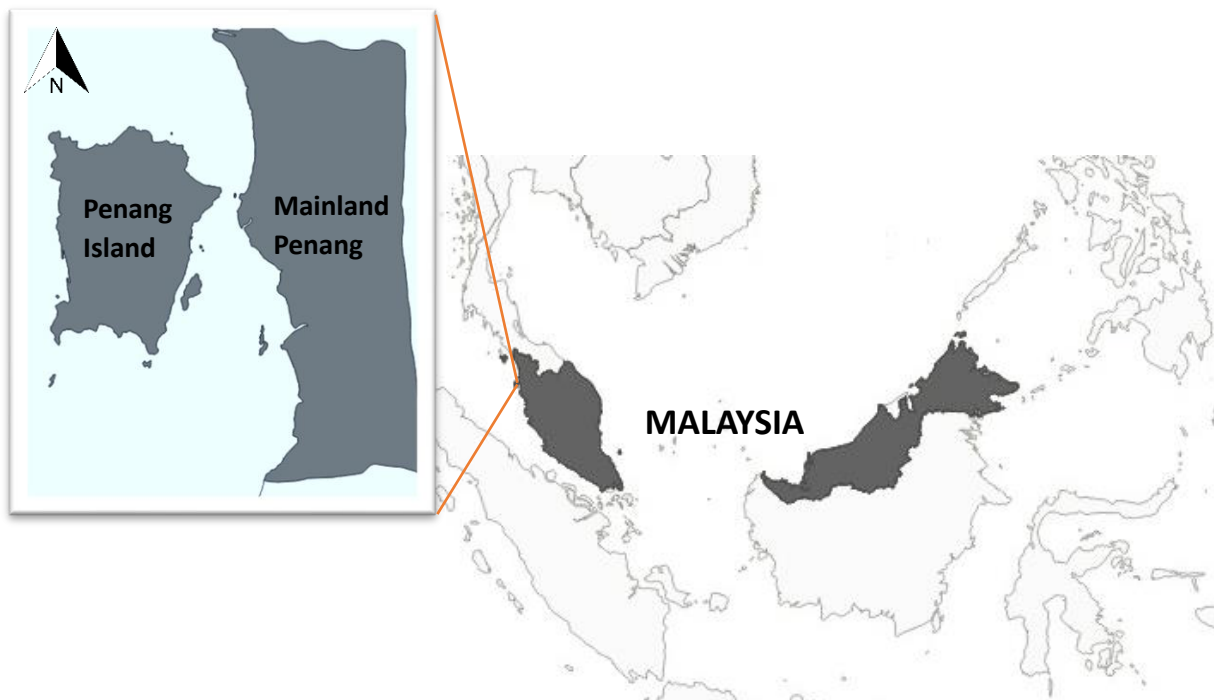


Fig. 3. Map of Penang, Malaysia.

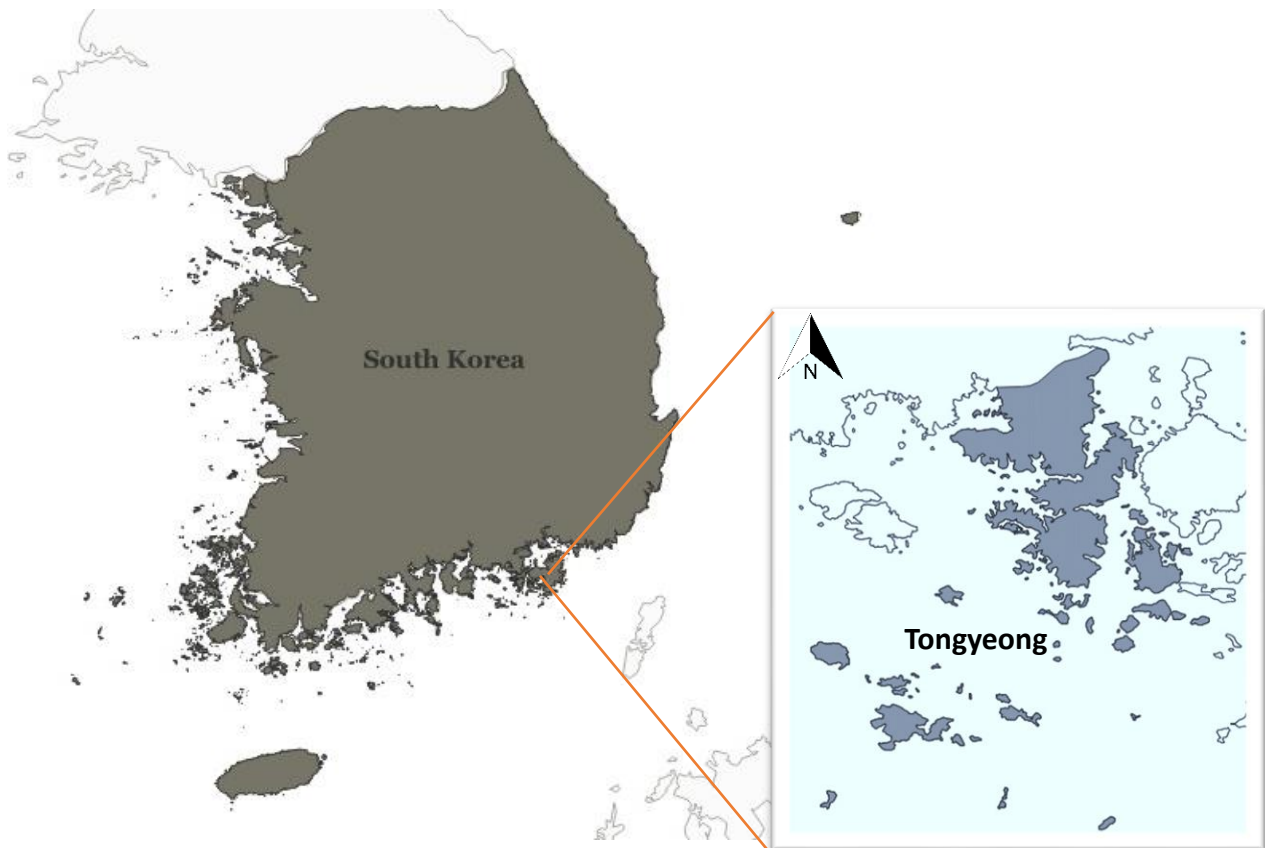


Fig. 4. Map of Tongyeong, South Korea.

3.2 Document Review

The document review involved collecting and analyzing a range of publicly available and organizational materials related to marine conservation initiatives in both Penang and Tongyeong. Materials such as program reports, educational pamphlets, informational brochures, workshop handouts, and digital publications were systematically gathered. These documents were sourced directly from organizations managing the programs, as well as from local libraries and online repositories. Program reports provided key details about each initiative's objectives, operational strategies, and recorded outcomes, giving insight into the goals and structure of each program. Educational materials like pamphlets and brochures were particularly valuable for assessing the types of messages conveyed to the public, the thematic focus of educational efforts, and the degree of technical versus accessible language used. Each document was carefully analyzed and coded to identify themes, recurring topics, and approaches in public engagement across both regions. This

process allowed for cross-comparisons between Penang and Tongyeong's approaches to conservation messaging and community education.

3.3 Stakeholder Interviews

Semi-structured interviews were conducted with a diverse range of stakeholders involved in marine conservation initiatives, including program coordinators, local educators, policymakers, and representatives from conservation organizations. These interviews aimed to provide an in-depth understanding of the motivations, design processes, challenges, and successes associated with each initiative. Participants were selected based on their level of involvement in either the planning or implementation of the conservation programs, ensuring a comprehensive representation of perspectives.

The interview process began with the development of a detailed questionnaire in English, combining structured and open-ended questions. Core questions addressed essential topics, such as program goals, strategies to engage the public, methods of adapting conservation messaging to local cultural contexts, and metrics for evaluating program success. To accommodate stakeholders in both Penang and Tongyeong, the questionnaire was translated into Bahasa Malaysia and Korean by native speakers proficient in English and familiar with the local contexts of marine conservation. This translation process ensured that questions retained their intended meaning and were culturally appropriate for each region. A back-translation method was also applied to verify accuracy, where the translated versions were retranslated into English to identify discrepancies and refine the content.

To refine the questionnaire further, a mock interview was conducted with colleagues fluent in the respective languages to test the clarity, flow, and cultural relevance of the translated versions. Feedback from these trial runs informed adjustments to improve question phrasing and sequencing, ensuring that the questionnaire was comprehensive, contextually relevant, and easily understood by stakeholders.

To facilitate data collection, interviews were conducted in person wherever feasible, allowing for richer interaction and observation of non-verbal cues. When logistical constraints arose, virtual platforms were used to ensure broad participation. Each interview began with a standardized set of structured questions, creating a consistent foundation across sessions. However, the semi-structured format allowed for flexibility to explore additional topics and delve deeper into emergent issues as

the conversation progressed. This adaptability ensured that the interviews captured not only the planned scope of the study but also unique insights relevant to each stakeholder's experience.

Interviews were audio-recorded with prior consent from participants to ensure accuracy in capturing their perspectives. Recordings were transcribed verbatim to facilitate comprehensive analysis. Transcripts were then subjected to thematic analysis, wherein recurring themes, unique insights, and cross-regional contrasts were systematically identified. This method enabled the identification of patterns such as shared challenges in public engagement, cultural nuances influencing conservation messaging, and differing perceptions of program impact.

3.4 Secondary Data on Program Reach

Secondary data were collected to provide quantitative measures of program reach, including participant numbers, event frequency, and geographic distribution of outreach activities. This data helped evaluate the scale and inclusivity of each initiative. Data sources included program attendance records, sign-up sheets, official annual reports, and participant demographic summaries where available. Specific metrics, such as the number of unique participants, age demographics, and the regularity of events, were used to assess how effectively each program engaged its target audiences and whether there was sustained public involvement over time. These metrics offered insights into the breadth and frequency of public participation, reflecting the community's level of engagement in marine conservation efforts. Additionally, information about participant demographics, such as age, gender, and occupation, provided context on the accessibility and appeal of the programs to diverse segments of the community. This quantitative data, when combined with the insights from interviews and document analysis, allowed for a more holistic view of program impact in Penang and Tongyeong.

3.5 Analyses

The content analysis of program materials involved a systematic process to extract relevant information and identify recurring themes. Program reports, educational pamphlets, and other published materials were reviewed to understand the goals, structure, and methods of the programs. Each document was analyzed to identify explicit and implicit objectives, with particular attention given to the language and content used to communicate conservation messages. The analysis aimed

to capture recurring topics and strategies that were highlighted, such as community engagement, marine biodiversity protection, pollution awareness, and sustainable resource management. Once the materials were reviewed, recurring themes were categorized. The most frequent themes related to the program's goals, such as reducing plastic pollution, promoting sustainable fishing practices, and encouraging community-based marine conservation efforts.

Additionally, the target audiences of the programs were identified, noting whether initiatives were primarily aimed at local communities, schools, or tourists. By mapping out the target groups, the content analysis revealed how each program tailored its messaging to address the specific concerns of its intended audience.

Program strategies and outreach methods were also assessed. This included evaluating whether educational tools like workshops, interactive exhibits, social media campaigns, or local events were employed to engage the public. These methods were examined for their potential to influence attitudes and behaviors related to marine conservation. The analysis of these materials allowed for a comparative evaluation between the programs in Penang and Tongyeong, revealing how different approaches were taken in response to the unique environmental and socio-cultural contexts of each region.

In conjunction with the content analysis of program materials, qualitative data collected from interviews was utilized to enrich the understanding of the programs' design and implementation. The interviews were conducted with key stakeholders such as program coordinators, local educators, and conservationists. The responses from these interviews were analyzed through thematic coding, identifying key patterns and insights into the challenges and successes faced during the program's execution. Stakeholders provided valuable perspectives on how the programs were developed, the resources required, the barriers faced, and how the local community responded to the initiatives.

Interview data was used to identify critical issues that may not have been captured in the written materials, such as the practical difficulties in reaching target audiences, the impact of local culture and socio-economic factors, and the perceived effectiveness of different outreach techniques. Stakeholders also discussed the challenges of maintaining program momentum, securing funding, and collaborating with other conservation organizations or local authorities. Through these qualitative insights, the study was able to assess the effectiveness of the conservation initiatives and understand the reasons behind their successes and limitations.

By triangulating the findings from the document review and stakeholder interviews, a comprehensive picture was formed of the educational and outreach strategies used in Penang and Tongyeong. This methodology provided a robust framework for evaluating the strengths, weaknesses, and overall impact of the marine conservation programs in both regions, offering insights for improving future initiatives.

4.0 RESULTS

4.1 Objectives & goals of the initiatives

The marine conservation initiatives in Tongyeong, South Korea, and Penang, Malaysia, focus on educational and public awareness efforts, but their approaches differ significantly (Table 1). Both regions emphasize awareness creation, though Tongyeong's initiatives are more structured, particularly through the Marine Education Centre, Hallyeohaesang National Park, and Seonchon Village. In contrast, Penang's awareness programs are largely community-driven, with organizations like RCE Penang, Nature Classroom, PIFWA, and Malaysia Nature Society leading the efforts. Additionally, environmental education is more systematically developed in Tongyeong, particularly through RCE Tongyeong, whereas Penang's focus leans more towards direct conservation efforts rather than formalized educational structures.

Habitat conservation plays a crucial role in both regions, but Penang has a stronger presence in this area. In Tongyeong, Seonchon Village and Hallyeohaesang National Park are the key players in habitat conservation, while Penang has multiple organizations dedicated to this cause, including PIFWA, the Shorebirds Peninsular Malaysia Project, and the Malaysia Nature Society. Sustainable practices are promoted in both regions, but while Tongyeong's efforts (led by Seonchon Village) emphasize community-based sustainability, Penang's approach (particularly through PIFWA) is more focused on protecting natural ecosystems.

Education for Sustainable Development (ESD) infrastructure is another area where Tongyeong stands out. Organizations like OSEAN and RCE Tongyeong actively contribute to building educational frameworks that promote long-term sustainability. In contrast, Penang lacks a structured ESD infrastructure, though community-based conservation efforts remain strong. Both regions engage in

community empowerment, but it is more explicitly integrated into Tongyeong's programs, particularly in Seonchon Village, where sustainability and conservation are closely tied to community initiatives.

A key distinction between the two locations is their approach to scientific research and pollution investigation. Tongyeong places a strong emphasis on investigating marine debris and pollution through OSEAN, which actively conducts research and analysis. In contrast, Penang does not have a strong research presence within the listed NGOs, suggesting that marine research in Malaysia may be conducted by other institutions rather than conservation organizations. This highlights Tongyeong's more research-oriented strategy, while Penang prioritizes practical, hands-on conservation work.

When it comes to addressing broader societal issues and training programs, Tongyeong is more developed in these areas. RCE Tongyeong leads initiatives that integrate conservation with societal well-being, such as nature-based healing programs. Additionally, Tongyeong has structured training-of-trainers programs, ensuring long-term capacity building. Penang, on the other hand, lacks explicit training-of-trainers initiatives, though RCE Penang and PIFWA remain actively involved in conservation education. This suggests that while Penang excels in direct conservation, Tongyeong places greater emphasis on training future conservation leaders and addressing marine conservation's role in social well-being.

4.2 Activities to engage communities

In Tongyeong, South Korea, the engagement strategies emphasize structured educational programs, workshops, and eco-tourism. Organizations such as RCE Tongyeong and Hallyeohaesang National Park East Office focus on educational programs, while Seonchon Village and OSEAN incorporate experiential learning activities like intertidal walks and coastal clean-ups. Additionally, nature interpretation and eco-tourism efforts are present, particularly through the Marine Education Centre and Hallyeohaesang National Park. Campaigns are another notable strategy, with RCE Tongyeong and OSEAN leading initiatives to raise public awareness. However, there is little emphasis on contests, competitions, or citizen science, indicating a more formalized approach rather than hands-on community-driven participation.

Table 1. Objectives & goals of the initiatives in Tongyeong and Penang.

	Create/increase awareness	Habitat conservation	Promote sustainable practices	Build ESD infrastructure	Provide ESD-based educational programs	Community empowerment	Enhance appreciation for nature	Environmental education	To address societal issues (e.g., nature-based healing programs)	Investigates and researches marine debris	Identifying key issues to pollution	Training-of-trainers
Objectives												
<u>Tongyeong, S. Korea</u>												
RCE Tongyeong					X						X	X
Marine Education Centre Gyeongnam Province	X		X									
Hallyeohaesang National Park East Office	X						X	X	X			
Seonchon Village	X	X	X									
OSEAN								X		X		
<u>Penang, Malaysia</u>												
RCE Penang		X		X								
Nature Classroom	X											
PIFWA	X	X										
Shorebirds Peninsular Malaysia Project		X				X						
Malaysia Nature Society	X	X										

On the other hand, Penang, Malaysia, places a stronger emphasis on experiential learning, campaigns, and nature interpretation. Organizations like PIFWA, RCE Penang, and the Malaysia Nature Society lead coastal clean-ups and field-based activities, allowing communities to engage in conservation efforts directly. Educational programs are also prominent in Penang, with multiple organizations, including the Shorebirds Peninsular Malaysia Project, participating. However, compared to Tongyeong, workshops, eco-tourism, and structured training programs are less prominent in Penang, indicating a more action-oriented rather than classroom-based learning approach.

A key distinction is the role of citizen science, which is more pronounced in Malaysia through organizations like PIFWA and the Shorebirds Peninsular Malaysia Project. These efforts involve local communities in data collection and environmental monitoring, empowering them as active

participants in conservation. In contrast, citizen science initiatives are largely absent in Tongyeong’s conservation efforts.

Another difference is the presence of contests and competitions, which are more prevalent in Tongyeong. While Penang organizations focus more on direct conservation efforts, Tongyeong’s approach incorporates competitive activities to promote environmental education and engagement, particularly in schools and formal institutions (Table 2).

Table 2. Activities to engage communities in Tongyeong and Penang.

Activities	Experiential learning (e.g., intertidal walks, coastal clean-up)	Exhibitions	Educational programs	Campaigns	Seminars	Screenings	Workshops	Eco-tourism	Contests/competitions	Nature interpretation	Citizen science
<u>Tongyeong, S. Korea</u>											
RCE Tongyeong			X	X			X				
Marine Education Centre Gyeongnam Province	X	X		X					X		
Hallyeohaesang National Park East Office			X					X		X	
Seonchon Village	X		X								
OSEAN	X		X								X
<u>Penang, Malaysia</u>											
RCE Penang	X		X		X						
Nature Classroom	X						X				
PIFWA	X	X		X			X				
Shorebirds Peninsular Malaysia Project			X				X	X			
Malaysia Nature Society	X				X		X				

4.3 Target audience

In Tongyeong, South Korea, the outreach programs primarily target students (from kindergarten to college), families, governmental organizations, and villagers. Institutions like the Marine Education Centre Gyeongnam Province and Hallyeohaesang National Park East Office focus on early education, engaging young learners from kindergarten to high school. Additionally,

governmental agencies and private organizations are included in the outreach, indicating structured, policy-driven engagement in conservation efforts. The inclusion of villagers and underprivileged communities suggests localized conservation efforts where rural communities are directly involved. However, there is limited focus on marginalized groups such as pregnant families, campers, or disabled individuals.

In contrast, Penang, Malaysia, presents a broader and more inclusive engagement strategy. Programs here also target students across all levels but extend their reach to NGOs, teachers, and fishermen/anglers, indicating a strong emphasis on grassroots-level participation. Organizations like PIFWA and the Shorebirds Peninsular Malaysia Project engage fishermen and anglers, reflecting the critical role of the fishing industry in marine conservation. Additionally, Malaysia has a wider scope of inclusivity, with outreach programs also targeting pregnant families, campers, and disabled individuals—a notable difference from Tongyeong’s focus. This highlights Penang’s efforts to integrate diverse communities into conservation initiatives, ensuring that marine awareness is accessible to all societal groups.

A key difference is the emphasis on institutional engagement in Tongyeong versus community-driven participation in Penang. Tongyeong’s programs involve governmental and private organizations, signifying structured and policy-aligned conservation efforts. Meanwhile, Penang’s initiatives place greater emphasis on NGO involvement, educators, and grassroots-level stakeholders, creating a more decentralized approach to marine conservation (Table 3).

Table 3. Target audience in Tongyeong and Penang.

Target audience	Kindergarten	Primary school	High school	College/university	Adults	Families	Governmental organisations	Private organisations	Fishermen/anglers	NGOs	Tour guides	Teachers	Villagers	Underprivileged	Pregnant families	Campers	Disabled
<u>Tongyeong, S. Korea</u>																	
RCE Tongyeong									X								
Marine Education Centre Gyeongnam Province		X	X						X				X				
Hallyeohaesang National Park East Office	X	X	X		X									X	X	X	X
Seonchon Village	X	X	X														
OSEAN				X													
<u>Penang, Malaysia</u>																	
RCE Penang		X	X	X													
Nature Classroom			X	X		X											
PIFWA		X	X	X			X	X									
Shorebirds Peninsular Malaysia Project		X	X	X			X		X	X	X	X					
Malaysia Nature Society		X	X						X								

4.4 Methods to increase participation

The methods used to increase participation in marine conservation initiatives in Tongyeong, South Korea, and Penang, Malaysia, show both similarities and distinct strategic approaches. While both regions rely on social media and word-of-mouth, their emphasis on certification, sponsorships, and printed materials differs significantly

In Tongyeong, South Korea, social media plays a significant role, with multiple organizations—including the Marine Education Centre Gyeongnam Province, Hallyeohaesang National Park East Office, Seonchon Village, and OSEAN—utilizing this platform for outreach. However, apart from social media, participation methods are relatively limited and institutionally focused. RCE Tongyeong and PIFWA rely on word-of-mouth, which suggests they depend on existing networks and community trust to spread awareness. Additionally, sponsorships play a minor role, only being utilized by Hallyeohaesang National Park East Office and OSEAN, indicating a selective use of external funding

and partnerships. Traditional printed materials such as notices and fliers are not widely used, reflecting a stronger reliance on digital engagement.

In contrast, Penang, Malaysia, employs a more diverse and multifaceted approach to increasing participation. Social media is widely used across different organizations, similar to Tongyeong. However, Penang's approach incorporates additional strategies such as certificates, sponsorships, and fliers to encourage engagement. Organizations like RCE Penang and the Shorebirds Peninsular Malaysia Project use certificates, which can be an incentive for students, volunteers, and professionals to participate. Additionally, sponsorships are more actively pursued in Penang, reflecting stronger collaboration with external partners and funding bodies. Unlike Tongyeong, which does not utilize extracurricular program coordinators, Penang focuses on integrating marine conservation into school programs, ensuring sustained engagement from younger participants (Table 4).

Table 4. Methods to increase participation in Tongyeong and Penang.

	Social media	Certificates	Word of mouth	Sponsorships	Notices/fliers	Extracurricular program coordinators
Increasing participation						
<u>Tongyeong, S. Korea</u>						
RCE Tongyeong			X			
Marine Education Centre Gyeongnam Province	X					
Hallyeohaesang National Park East Office	X				X	
Seonchon Village	X					
OSEAN	X					X
<u>Penang, Malaysia</u>						
RCE Penang	X	X	X	X		
Nature Classroom	X					
PIFWA			X			
Shorebirds Peninsular Malaysia Project	X	X		X		
Malaysia Nature Society	X					

4.5 Impact and reach

In Tongyeong, South Korea, the impact of initiatives is more varied and sometimes difficult to measure, particularly for newer organizations like the Marine Education Centre Gyeongnam Province, which is still in its early stages and unable to report meaningful impact. Organizations such as RCE Tongyeong, Hallyeohaesang National Park East Office, and OSEAN have recorded increased awareness among participants, suggesting that their programs effectively educate and engage the community. However, behavioral changes are only explicitly observed in OSEAN, indicating that while many organizations succeed in raising awareness, the translation into long-term behavioral shifts is still limited. Participant advancement, such as skill-building or leadership development, is not significantly reported in Tongyeong, meaning there may be gaps in fostering continued involvement or career opportunities in conservation.

In contrast, Penang, Malaysia, demonstrates a stronger impact on participation and behavioral transformation. Organizations such as PIFWA and the Shorebirds Peninsular Malaysia Project have reported increased participation and participant advancement, which suggests that their programs not only attract engagement but also help individuals grow in their conservation efforts. Additionally, RCE Penang and Malaysia Nature Society have received positive responses and feedback, reinforcing the effectiveness of their awareness-building activities. Nature Classroom is the only organization in Penang explicitly linked to fostering a deeper understanding, which indicates a need for other organizations to focus more on in-depth knowledge acquisition rather than just outreach (Table 5).

Table 5. Impact and reach in Tongyeong and Penang.

	Deeper understanding	Positive responses/feedback	Increased awareness	Increased participation	Participant advancement	Behavioral changes
<u>Tongyeong, S. Korea</u>						
RCE Tongyeong	X		X			
Marine Education Centre Gyeongnam Province	As the organisation is only 1-year-old, it is not possible to evaluate impact at this point.					
Hallyeohaesang National Park East Office	X		X	X		
Seonchon Village				X		
OSEAN		X	X			X
<u>Penang, Malaysia</u>						
RCE Penang		X	X			
Nature Classroom	X					
PIFWA			X	X	X	
Shorebirds Peninsular Malaysia Project			X		X	
Malaysia Nature Society		X	X			

4.6 Measuring impact

In Tongyeong, South Korea, most organizations track participation through participant records, with RCE Tongyeong, Hallyeohaesang National Park East Office, Seonchon Village, and OSEAN using this method. This provides quantitative data on attendance and engagement levels. RCE Tongyeong also conducts interviews, adding a qualitative dimension by gathering direct feedback from participants. However, social media engagement and policy impact (e.g., protected area declarations) are not widely used in Tongyeong, limiting the measurement of public perception and large-scale conservation success. The Marine Education Centre Gyeongnam Province, being relatively new, has not yet developed a formal impact evaluation framework.

In Penang, Malaysia, organizations also use participant records and interviews, but they supplement these methods with social media feedback. Shorebirds Peninsular Malaysia Project and Malaysia Nature Society assess impact through positive comments on social media, providing an accessible and real-time gauge of public response. However, like in Tongyeong, there are no recorded instances of measuring impact through official conservation policy changes, such as protected area declarations (Table 6).

Table 6. Methods of measuring impact in Tongyeong and Penang.

Measuring Impact	Participant records	Interviews	Positive comments on social media	Declaration of protected area
<u>Tongyeong, S. Korea</u>				
RCE Tongyeong	X	X		
Marine Education Centre Gyeongnam Province	As the organisation is only 1-year-old, it is not possible to evaluate impact at this point.			
Hallyeohaesang National Park East Office	X			
Seonchon Village	X			
OSEAN	X			
<u>Penang, Malaysia</u>				
RCE Penang	X	X		
Nature Classroom				
PIFWA	X			
Shorebirds Peninsular Malaysia Project			X	
Malaysia Nature Society				X

4.7 Number of participants

In Tongyeong, South Korea, participation numbers show a wide range, from as few as 20 participants per year in OSEAN’s programs to as many as 35,000 to 55,000 in Seonchon Village’s initiatives. Hallyeohaesang National Park East Office also sees a high volume of participants, with over 13,000 annually, indicating its strong role in public engagement. RCE Tongyeong and the Marine Education Centre Gyeongnam Province attract mid-range numbers, between 200 and 500 participants per year, likely due to their more structured educational programs.

In contrast, Penang’s initiatives generally attract fewer participants, with the exception of PIFWA, which engages between 4,000 and 6,000 people per year. This suggests that Penang’s programs may be more specialized or targeted toward specific communities rather than open to mass participation. Shorebirds Peninsular Malaysia Project and Malaysia Nature Society have low participant numbers (3 to 40 per year), which may be due to the specialized nature of their conservation efforts, requiring small, dedicated groups rather than large crowds. RCE Penang and Nature Classroom fall within a moderate participation range (200-250 annually), comparable to some Tongyeong initiatives (Table 7).

Table 7. Number of participants in initiatives in Tongyeong and Penang.

Participant number (per year)	
<u>Tongyeong, S. Korea</u>	
RCE Tongyeong	500
Marine Education Centre Gyeongnam Province	200 to 400
Hallyeohaesang National Park East Office	13,319
Seonchon Village	35-55,000
OSEAN	20
<u>Penang, Malaysia</u>	
RCE Penang	250
Nature Classroom	200
PIFWA	4000 to 6000
Shorebirds Peninsular Malaysia Project	20-40 (due to the nature of the programs)
Malaysia Nature Society	3 to 40

4.8 Age group

The age groups of participants in the initiatives from Tongyeong, South Korea, and Penang, Malaysia, show both similarities and differences in their demographic focus. In both regions, several initiatives target a wide age range, emphasizing inclusivity and lifelong learning. For example, in Tongyeong, the Marine Education Centre Gyeongnam Province, Hallyeohaesang National Park East Office, and Seonchon Village all engage participants aged 7 to 80 years old. Similarly, in Penang, initiatives like the Nature Classroom (5–65 years old), Shorebirds Peninsular Malaysia Project (7 and above), and Malaysia Nature Society (7 and above) also cater to a broad spectrum of ages, from young children to older adults. This reflects a shared commitment to involving diverse age groups in environmental and community activities.

However, there are notable differences in how specific age groups are prioritized. In Tongyeong, some initiatives have a narrower focus, such as RCE Tongyeong, which targets middle-aged and older adults (40 to more than 50 years old), and OSEAN, which exclusively engages young adults aged 20 to 29. This suggests a strategic effort to involve specific demographics, particularly older adults and young adults, in targeted programs. In contrast, Penang’s initiatives tend to maintain a broader age range, with fewer programs focusing exclusively on a single age group. For instance, RCE Penang includes participants aged 10 to 60, while PIFWA targets a slightly narrower but still wide range of 16 to 50 years old. Additionally, Penang places a stronger emphasis on engaging younger

children, with initiatives like the Nature Classroom starting at 5 years old, compared to Tongyeong’s general starting point of 7 years old (Table 8)..

Overall, both regions demonstrate a strong commitment to environmental education and community engagement but differ in their demographic focus. Tongyeong’s initiatives often target specific age groups, such as older adults and young adults, while Penang’s programs tend to be more inclusive, spanning a wider range of ages and placing greater emphasis on early childhood participation. These differences highlight the unique approaches each region takes to fostering community involvement and environmental awareness across generations.

Table 8. Age group for initiatives in Tongyeong and Penang.

Age group	
<u>Tongyeong, S. Korea</u>	
RCE Tongyeong	40 to more than 50 years old
Marine Education Centre Gyeongnam Province	7 to 80 years old
Hallyeohaesang National Park East Office	7 to 80 years old
Seonchon Village	7 to 80 years old
OSEAN	20 to 29 years old
<u>Penang, Malaysia</u>	
RCE Penang	10 to 60
Nature Classroom	5 to 65
PIFWA	16 to 50
Shorebirds Peninsular Malaysia Project	7 and above
Malaysia Nature Society	7 and above

4.9 Event frequency

The event frequency of marine conservation initiatives in Tongyeong and Penang highlights key differences in their conservation strategies. Tongyeong generally follows a structured, institution-led approach, while Penang emphasizes community-driven engagement. In Tongyeong, RCE Tongyeong and the Marine Education Centre Gyeongnam Province conduct 20 to 30 events per year, reflecting a structured and policy-driven model of environmental education. Hallyeohaesang National Park East Office also holds around 20 events annually, likely integrating conservation awareness with ecotourism. Seonchon Village, however, stands out as a community-driven initiative with 50 events per year, showing strong grassroots involvement in marine stewardship. Meanwhile, OSEAN, which

focuses primarily on marine debris research and policy advocacy, hosts only three events per year, demonstrating a more specialized and research-intensive approach.

In contrast, Penang’s conservation initiatives prioritize frequent public engagement. PIFWA leads in event frequency, organizing between 48 and 60 events annually, ensuring continuous community participation in conservation activities. RCE Penang and Nature Classroom conduct 12 and 10 events per year, respectively, focusing on structured environmental education and interactive learning experiences. Meanwhile, the Shorebirds Peninsular Malaysia Project and the Malaysia Nature Society host only three to four events per year, similar to OSEAN in Tongyeong, as their focus lies more on research and specialized conservation campaigns. (Table 9).

Table 9. Event frequency in Tongyeong and Penang.

Event Frequency (per year)	
<u>Tongyeong, S. Korea</u>	
RCE Tongyeong	30
Marine Education Centre Gyeongnam Province	20 to 30
Hallyeohaesang National Park East Office	20
Seonchon Village	50
OSEAN	3
<u>Penang, Malaysia</u>	
RCE Penang	12
Nature Classroom	10
PIFWA	48 to 60
Shorebirds Peninsular Malaysia Project	3 to 4
Malaysia Nature Society	3 to 4

4.10 Geographic distribution of activities

The geographic distribution of activities in marine conservation initiatives across Tongyeong, South Korea, and Penang, Malaysia, varies in terms of scope and reach. Some initiatives operate only within their immediate region, while others extend their activities beyond local boundaries. In Tongyeong, most initiatives, such as the Marine Education Centre Gyeongnam Province and Seonchon Village, focus exclusively within their local areas. RCE Tongyeong stands out as the most geographically restricted initiative, as its activities are limited solely to Gon-ri Island. In contrast, Hallyeohaesang National Park East Office and OSEAN expand their reach beyond the local region, engaging in broader conservation efforts that may include national or international collaborations.

Similarly, in Penang, certain initiatives like RCE Penang and Nature Classroom are confined to their immediate surroundings, focusing on localized conservation efforts. However, organizations such as PIFWA, Shorebirds Peninsular Malaysia Project, and Malaysia Nature Society extend their activities beyond their region. This suggests that conservation efforts in Penang strike a balance between localized engagement and broader outreach, likely achieved through national partnerships, research programs, and awareness campaigns (Table 10).

Overall, Tongyeong’s conservation approach appears more community-centered, with limited regional expansion except for a few exceptions. Meanwhile, Penang exhibits a more evenly distributed approach, allowing for both strong local involvement and wider conservation impact. While RCE Tongyeong remains the most geographically restricted initiative, PIFWA and Malaysia Nature Society demonstrate the broadest geographic influence among the Penang-based organizations.

Table 10. Geographic distribution of activities in Tongyeong and Penang.

Geographic distribution of activities	Within	Within and beyond
<i>Tongyeong, S. Korea</i>		
RCE Tongyeong	Only on Gon-ri Island	
Marine Education Centre Gyeongnam Province	X	
Hallyeohaesang National Park East Office	X	X
Seonchon Village	X	
OSEAN		X
<i>Penang, Malaysia</i>		
RCE Penang	X	
Nature Classroom	X	
PIFWA	X	X
Shorebirds Peninsular Malaysia Project	X	X
Malaysia Nature Society	X	X

4.11 Sources of funding

Funding sources for marine conservation initiatives in Tongyeong, South Korea, and Penang, Malaysia, vary significantly, reflecting different financial structures and support systems. In Tongyeong, funding primarily comes from governmental organizations and private companies, with limited involvement from participants or NGOs. For example, RCE Tongyeong and the Marine

Education Centre Gyeongnam Province rely exclusively on government funding, while the Hallyeohaesang National Park East Office receives support from both the government and private companies. Seonchon Village, on the other hand, is the only initiative in Tongyeong that benefits from local grants. OSEAN is unique among Tongyeong’s initiatives as it secures funding from a mix of governmental organizations, private companies, and international grants (Table 11).

In contrast, Penang’s initiatives display a more diverse funding structure, incorporating contributions from participants, NGOs, governmental organizations, and multiple grant sources. Unlike Tongyeong, where participant contributions are not recorded, organizations such as Nature Classroom, Shorebirds Peninsular Malaysia Project, and Malaysia Nature Society receive financial support directly from participants. NGOs play a crucial role in Penang’s funding landscape, particularly for Nature Classroom, Shorebirds Peninsular Malaysia Project, and Malaysia Nature Society. Additionally, Malaysia’s conservation initiatives benefit from local and international grants, with Malaysia Nature Society and Shorebirds Peninsular Malaysia Project securing multiple sources of funding.

Table 11. Sources of funding for initiatives in Tongyeong and Penang.

	Participants	NGOs	Governmental organisations	Private companies	Local grants	International grants	University grants
<u>Tongyeong, S. Korea</u>							
RCE Tongyeong			X				
Marine Education Centre Gyeongnam Province			X				
Hallyeohaesang National Park East Office			X	X			
Seonchon Village						X	
OSEAN			X	X			X
<u>Penang, Malaysia</u>							
RCE Penang						X	
Nature Classroom	X	X					
PIFWA				X			
Shorebirds Peninsular Malaysia Project		X			X	X	
Malaysia Nature Society		X	X	X		X	

4.12 Frequency of funding

The frequency of funding for marine conservation initiatives in Tongyeong, South Korea, and Penang, Malaysia, demonstrates key differences in financial stability and flexibility. In Tongyeong, most initiatives, including RCE Tongyeong, Marine Education Centre Gyeongnam Province, Seonchon Village, and OSEAN, receive funding on an annual basis. This consistent schedule allows for predictable financial planning but may limit the ability to respond to urgent or unforeseen conservation needs. Notably, Hallyeohaesang National Park East Office does not have a recorded funding frequency, which may indicate reliance on irregular or project-based funding.

In contrast, Penang's initiatives display a more varied funding structure. While RCE Penang and Shorebirds Peninsular Malaysia Project receive funding annually, Nature Classroom operates on a longer cycle, securing funds only once every two years. This could indicate a more resource-intensive model requiring long-term financial planning. PIFWA stands out as the only initiative where funding is obtained upon request, suggesting a flexible but potentially uncertain financial structure. Malaysia Nature Society benefits from the most frequent funding, receiving financial support between two to four times per year, allowing for greater adaptability in implementing conservation projects (Table 12).

Table 12. Frequency of funding in Tongyeong and Penang.

<u>Tongyeong, S. Korea</u>	
RCE Tongyeong	Once a year
Marine Education Centre Gyeongnam Province	Once a year
Hallyeohaesang National Park East Office	
Seonchon Village	Once a year
OSEAN	Once a year
<u>Penang, Malaysia</u>	
RCE Penang	Once a year
Nature Classroom	Once in 2 years
PIFWA	Upon request
Shorebirds Peninsular Malaysia Project	Once a year
Malaysia Nature Society	2 to 4 a year

4.13 Quantum of funding

The quantum of funding for marine conservation initiatives in Tongyeong, South Korea, and Penang, Malaysia, varies significantly in terms of financial support. In Tongyeong, most initiatives, including the Marine Education Centre Gyeongnam Province, Hallyeohaesang National Park East Office, Seoncheon Village, and OSEAN, receive funding exceeding USD 10,000. This suggests a higher level of financial investment, possibly due to the scale or governmental backing of these programs. In contrast, RCE Tongyeong operates on a much smaller budget, receiving less than USD 3,000, which could indicate a more localized or low-cost approach to conservation.

In Penang, funding amounts are more diverse. RCE Penang and PIFWA receive mid-range funding between USD 3,000 and 10,000, similar to several initiatives in Tongyeong. However, Nature Classroom, Shorebirds Peninsular Malaysia Project, and Malaysia Nature Society receive less than USD 3,000, reflecting a more modest funding scale. The lower funding amounts in Malaysia suggest that these programs may rely more on volunteer efforts, partnerships, or alternative funding sources rather than large grants.

Overall, initiatives in Tongyeong tend to secure higher financial support, with several receiving more than USD 10,000, while Penang's projects display a wider funding range, including lower-budget initiatives. This difference in funding distribution could impact the scale, reach, and sustainability of conservation activities in each region (Table 13).

Table 13. Quantum of funding for initiatives in Tongyeong and Penang.

	< USD3,000	USD3,000-10,000	> USD10,000
<u>Tongyeong, S. Korea</u>			
RCE Tongyeong	X		
Marine Education Centre Gyeongnam Province			X
Hallyeohaesang National Park East Office			X
Seoncheon Village			X
OSEAN			X
<u>Penang, Malaysia</u>			
RCE Penang			X
Nature Classroom	X		
PIFWA			X
Shorebirds Peninsular Malaysia Project		X	
Malaysia Nature Society		X	

4.14 Challenges

The challenges faced by marine conservation initiatives in Tongyeong, South Korea, and Penang, Malaysia, reveal both commonalities and regional differences.

In Tongyeong, major challenges include changing perceptions, behavioral tendencies, and pollution, which affect multiple initiatives like RCE Tongyeong, Marine Education Centre Gyeongnam Province, and OSEAN. This suggests that shifting public attitudes and managing environmental threats are key concerns. Hallyeohaesang National Park East Office and Seonchon Village also face issues related to lack of funding and logistical difficulties, while OSEAN specifically struggles with overfishing of endangered wildlife.

In contrast, initiatives in Penang also encounter challenges related to changing perceptions (RCE Penang), but additional concerns arise, such as habitat destruction (Nature Classroom) and community-related difficulties like friction with local communities (Shorebirds Peninsular Malaysia Project) and lack of manpower (Malaysia Nature Society). PIFWA and the Shorebirds Project also report challenges with encroachment, pollution, and logistical issues, highlighting a broader struggle with land use and enforcement (Table 14).

Overall, both regions face behavioral and environmental challenges, but Tongyeong's initiatives are more focused on changing perceptions and pollution, while Penang's projects face more structural and logistical issues, including manpower shortages and community friction.

Table 14. Challenges in initiatives in Tongyeong and Penang.

	Habitat destruction	Changing perceptions	Behavioral tendencies	Encroachment	Pollution	Lack of funding	Lack of manpower	Community buy-ins	Lack of local champions	Logistical issues	Friction with local	overfishing of	Lack of awareness
<u>Tongyeong, S. Korea</u>													
RCE Tongyeong	X	X	X		X								
Marine Education Centre Gyeongnam Province		X	X										
Hallyeohaesang National Park East Office					X						X	X	
Seonchon Village		X				X				X			
OSEAN		X											X
<u>Penang, Malaysia</u>													
RCE Penang		X	X										
Nature Classroom	X												
PIFWA				X	X	X							
Shorebirds Peninsular Malaysia Project								X	X				
Malaysia Nature Society							X						

4.15 Addressing misconceptions

In Tongyeong, misconceptions are primarily tackled through knowledge-sharing initiatives and structured briefings. RCE Tongyeong and OSEAN use briefings and knowledge-sharing sessions, while the Marine Education Centre Gyeongnam Province and Hallyeohaesang National Park East Office incorporate field trips to reinforce learning. Seonchon Village focuses on knowledge-sharing sessions, emphasizing interactive ways to correct misconceptions.

In contrast, Penang’s initiatives employ a broader range of methods, including discussions, stakeholder involvement, and campaigns. RCE Penang and Nature Classroom rely on discussion-based approaches, encouraging direct dialogue with participants. PIFWA and the Shorebirds Peninsular Malaysia Project integrate stakeholder involvement and campaigns, indicating a more community-driven effort to dispel misconceptions. Notably, Malaysia Nature Society reports rarely encountering participants with misconceptions, possibly reflecting a more informed audience or a different engagement approach (Table 15).

Table 15. Addressing misconceptions in Tongyeong and Penang.

	Discussion	Stakeholder involvement	Briefings	Knowledge sharing	Field trips	Campaigns	Promotional booths
<u>Tongyeong, S. Korea</u>							
RCE Tongyeong				X			
Marine Education Centre Gyeongnam Province						X	X
Hallyeohaesang National Park East Office				X		X	
Seonchon Village					X		
OSEAN				X	X		
<u>Penang, Malaysia</u>							
RCE Penang		X					
Nature Classroom	X						
PIFWA			X	X			
Shorebirds Peninsular Malaysia Project				X	X		
Malaysia Nature Society	Hardly meet participants with misconceptions						

4.16 Integration of local cultural values

The integration of local cultural values into marine conservation efforts in Tongyeong and Penang reveals key differences in their approaches to community involvement, cultural integration, and education systems. In Tongyeong, multiple institutions, including RCE Tongyeong, Hallyeohaesang National Park East Office, Seonchon Village, and OSEAN, actively engage the community in conservation efforts. However, only the Marine Education Centre of Gyeongnam Province incorporates cultural memories, perspectives, and local educational systems into its programs. This suggests that while community involvement is present across several initiatives, the deeper integration of cultural traditions and localized learning remains limited to specific institutions.

In Penang, community involvement is widespread across RCE Penang, Nature Classroom, PIFWA, and the Shorebirds Peninsular Malaysia Project. However, the explicit integration of local culture and memories is less prominent, with only the Malaysia Nature Society incorporating activities into local culture. This suggests that while community participation is strong, fewer organizations in Penang embed cultural heritage as deeply into their conservation efforts as Marine Education Centre Gyeongnam Province does in Tongyeong (Table 16).

Table 16. Integration of local cultural values in Tongyeong and Penang.

	Community involvement	Integration of activities into local culture	Incorporating memories & perspectives	Education utilising local systems
<u>Tongyeong, S. Korea</u>				
RCE Tongyeong	X			
Marine Education Centre Gyeongnam Province	X		X	X
Hallyeohaesang National Park East Office	X			
Seonchon Village	X			
OSEAN	X			
<u>Penang, Malaysia</u>				
RCE Penang	X			
Nature Classroom	X			
PIFWA	X			
Shorebirds Peninsular Malaysia Project	X			
Malaysia Nature Society		X		

4.17 Vision

The future vision of initiatives in Tongyeong, South Korea, and Penang, Malaysia, highlights distinct priorities and approaches to sustainability, policy integration, and community engagement. In Tongyeong, organizations such as RCE Tongyeong, Marine Education Centre Gyeongnam Province, and OSEAN emphasize the need for continuity and expansion of activities, ensuring long-term sustainability. A strong focus is placed on behavioral change and enforcement, particularly by the Marine Education Centre Gyeongnam Province and Seonchon Village, while RCE Tongyeong is actively working toward introducing localized regulations. Additionally, OSEAN stands out as one of the few institutions prioritizing the extension of education efforts to tourists and foreigners. Strengthening

partnerships with local communities is also a key focus, particularly for the Marine Education Centre Gyeongnam Province and OSEAN, though RCE Tongyeong has a clearer vision for policy integration.

In contrast, the future vision for initiatives in Penang leans more toward leadership, policy integration, and long-term funding. RCE Penang and Nature Classroom emphasize stewardship and governance, ensuring that sustainability efforts are embedded within institutional frameworks. Financial sustainability is a major concern, with RCE Penang, Malaysia Nature Society, and Shorebirds Peninsular Malaysia Project prioritizing the securing of long-term funding and providing training and resources to support their initiatives. Community empowerment is also a central goal, particularly for RCE Penang and Malaysia Nature Society, which focus on strengthening grassroots efforts. Unlike Tongyeong, where tourism education is a priority, Penang's initiatives lean more toward local partnerships and ensuring sustainable teaching methods, as seen in the Shorebirds Peninsular Malaysia Project (Table 17).

The key difference between the two regions lies in their approach—Tongyeong's vision is more enforcement-driven, aiming to achieve sustainability through behavioral changes and regulatory measures, while Penang's approach is centered on policy integration, leadership, and financial sustainability. Tongyeong emphasizes introducing localized regulations to address environmental concerns, whereas Penang focuses on governance and capacity-building to ensure long-term impact.

Table 17. Future vision of initiatives in Tongyeong and Penang.

	Stewardship/leadership	Policy intergration	Community empowerment	Long-term funding	Provide training and resources	Continuity/expansion of activites and scale	Behavioral changes	Enforcing penalties	Education to extend to tourists/foreigners	Incorporating sustainability in teaching methods	Strengthen partnerships with local communities	Analyze collected data for policy recommendations	Introducing localized regulations
<u>Tongyeong, S. Korea</u>													
RCE Tongyeong						X			X				X
Marine Education Centre Gyeongnam Province						X	X	X					
Hallyeohaesang National Park East Office						X							
Seonchon Village						X				X			
OSEAN						X					X	X	
<u>Penang, Malaysia</u>													
RCE Penang	X		X	X	X								
Nature Classroom	X	X											
PIFWA						X							
Shorebirds Peninsular Malaysia Project	X			X		X							
Malaysia Nature Society				X		X	X						

4.0 DISCUSSION

This comparative study of environmental and educational initiatives in Tongyeong, South Korea, and Penang, Malaysia, provides valuable insights into how different regions approach marine conservation and sustainability education. By analyzing their objectives, activities, impact and reach, funding, challenges and misconceptions, culture and community, and future vision, this discussion highlights key strengths, challenges, and opportunities for improvement in both regions.

Both Tongyeong and Penang share the overarching goal of marine conservation through education and community engagement, but their approaches differ. Tongyeong places a strong emphasis on policy integration, structured leadership, and expert-driven education, with institutions like RCE Tongyeong and the Marine Education Centre Gyeongnam Province focusing on regulatory enforcement and policy recommendations. This aligns with the broader South Korean emphasis on top-down environmental governance (Kim, 2021). In contrast, Penang prioritizes grassroots movements, behavioral change, and continuous public participation, as seen in initiatives like RCE Penang and PIFWA, which encourage direct community involvement in conservation activities. This reflects the participatory approach often seen in Southeast Asian community-based conservation (Agrawal & Gibson, 1999). Tongyeong's structured model ensures credibility and policy alignment, whereas Penang's hands-on, community-led initiatives foster wider public engagement and behavioral transformation.

The implementation strategies of both regions further highlights these differences. In Tongyeong, conservation education is often formalized and institutionalized, with structured learning environments in marine education centers and national parks. These programs focus on training educators, analyzing environmental data, and enforcing sustainability policies, which result in fewer but highly specialized activities. This is consistent with the trend of formal environmental education in developed nations (Disinger & Roth, 1992). In contrast, Penang's approach is community-driven and frequent, involving workshops, public awareness campaigns, and volunteer conservation efforts. By maintaining continuous public engagement, Penang ensures that marine conservation becomes part of everyday life. This aligns with the concept of "everyday environmentalism" (Connolly, 2017). While Tongyeong's formalized structure supports long-term policy impact, Penang's frequent hands-on activities help sustain grassroots involvement.

The impact and reach of these initiatives depend on their ability to engage different demographic groups. In Tongyeong, programs often target specific age groups rather than the general public. For example, RCE Tongyeong focuses on older adults (40+ years old), while OSEAN engages young adults (20–29 years old). Some initiatives, such as Marine Education Centre Gyeongnam Province, are broader, engaging participants from 7 to 80 years old, but the lower event frequency limits accessibility for newcomers. In contrast, Penang’s programs are more inclusive, engaging children as young as 5 years old up to senior citizens. Initiatives like Nature Classroom and the Malaysia Nature Society emphasize early childhood education and intergenerational participation, ensuring that conservation knowledge is passed down through generations. This inclusivity, combined with frequent activities, enhances Penang’s ability to reach a wider audience over time. This approach reflects the importance of intergenerational learning in environmental sustainability (Tilbury, 2011).

Financial sustainability plays a crucial role in ensuring the continuity and expansion of conservation programs. Tongyeong’s initiatives rely heavily on institutional funding, government support, and research grants, which provide stability but can also result in bureaucratic delays in resource allocation. In contrast, Penang’s funding model is more diverse, consisting of corporate sponsorships, public donations, government grants, and community-driven fundraising efforts. This allows for greater flexibility in resource management, making it easier to adapt to emerging conservation needs. While Tongyeong benefits from consistent financial backing, Penang’s community-supported funding model enhances resilience and adaptability, ensuring sustained program execution despite funding uncertainties.

Despite their successes, both regions face unique challenges and misconceptions that impact the effectiveness of their programs. Tongyeong struggles with the loss of traditional ecological knowledge, making it difficult to sustain long-term conservation efforts. Additionally, its reliance on formal education settings limits its outreach to the general public, and bureaucratic obstacles slow down the enforcement of environmental policies. Penang, on the other hand, faces resource limitations that sometimes hinder long-term sustainability. While frequent engagement fosters participation, behavioral change takes time, and some community members remain disengaged due to persistent misconceptions about marine conservation. These challenges indicate that while Tongyeong needs to focus on revitalizing traditional environmental wisdom and increasing public accessibility, Penang must work on securing stronger institutional backing and addressing misconceptions through structured educational campaigns.

Cultural integration plays a crucial role in the success of marine conservation initiatives. In Tongyeong, some programs, such as those in Seonchon Village, aim to preserve local environmental knowledge, but community participation varies. Conservation is often seen as an institutional responsibility rather than a grassroots movement, which can limit public engagement. In contrast, Penang's conservation efforts are deeply embedded in local culture and traditions, fostering stronger community involvement. Volunteer-driven programs, community-led initiatives, and collaborations between local organizations ensure that conservation remains an ongoing effort rather than a temporary project. By weaving environmental awareness into everyday life, Penang sustains its conservation momentum beyond institutional programs.

Interestingly, Tongyeong's marine conservation once followed a similar community-driven model. However, over time, the system evolved into a more structured, government-led approach, with policies and regulations playing a larger role. Recently, however, there has been a renewed effort among local communities to reclaim stewardship of their environment. For example, the expansion of the fishing license system has encouraged villages to take a more active role in managing marine resources. Seonchon Village, in particular, exemplifies how local leadership can revitalize conservation efforts. These two regions offer valuable insights for each other. Tongyeong's structured governance ensures long-term stability, while Penang's grassroots-driven model fosters immediate public participation and behavioral change. By learning from one another's strengths, both can enhance their conservation strategies, striking a balance between institutional support and community engagement for a more sustainable future. Table 18 compares the behavioural change in marine conservation from each region in terms of strategies, strengths, and challenges.

Table 18. Strategies, strengths, and challenges in behavioural change in marine conservation in Tongyeong and Penang.

	Tongyeong	Penang
Common Goal	Encouraging behavioral change for marine conservation	Encouraging behavioral change for marine conservation
Approach	Policy-driven approach	Community-led approach
Key Strategies	- Marine protected areas	- Public awareness campaigns
	- Fishing license system	- Volunteer conservation efforts
	- Environmental education through institutions	- Hands-on workshops
Strengths	- Structured leadership	- Continuous public participation
	- Policy integration	- Behavioral transformation
Challenges	Limited direct public participation in conservation activities	Limited institutional support for policy-driven conservation

Looking towards the future vision and sustainability of these initiatives, both regions have clear expansion plans. Tongyeong is focusing on policy development, leadership training, and expert-driven solutions, but some initiatives lack clear continuity plans, which could impact long-term sustainability. There are ongoing efforts to expand conservation education to tourists, enforce penalties, and strengthen environmental regulations, ensuring that policy-driven conservation remains a priority. Penang, on the other hand, is working towards scaling up public participation, increasing corporate involvement, and expanding environmental education programs to schools and businesses. Its model of frequent engagement, flexible funding, and grassroots ownership provides a strong foundation for sustainability, but institutional support will be crucial for scaling efforts. This reflects the need for strategic planning and institutional support in scaling up environmental initiatives (McKenzie-Mohr, 2011).

While this study provides useful insights into regional conservation efforts, it is important to acknowledge its limitations. The findings are shaped by the individual experiences and perspectives of participants, which may introduce subjectivity into the results. Since the responses come from representatives of different organizations, variations in scope and focus could lead to differing emphases on certain themes. Additionally, the study primarily relies on qualitative data, which, although rich in context, may not fully capture the breadth and scale of conservation initiatives in each region. Future research could enhance these insights by incorporating quantitative assessments, long-term impact evaluations, and broader stakeholder engagement to provide a more comprehensive understanding of marine conservation efforts in Tongyeong and Penang.

In a nutshell, Tongyeong's policy-driven, expert-led initiatives provide a robust framework for regulatory enforcement and long-term policy impact, benefiting from stable institutional funding. However, its reliance on formal education settings limits public accessibility, and the loss of traditional ecological knowledge and potential bureaucratic delays hinder broader engagement. Conversely, Penang's community-centric, grassroots movements foster widespread participation and behavioral change, supported by a flexible and diversified funding model and strong cultural integration. Yet, resource limitations and the need to address persistent misconceptions pose challenges to long-term sustainability. To enhance their efforts, Tongyeong should prioritize increasing public accessibility through outreach programs, revitalize traditional ecological knowledge by partnering with local communities, streamline bureaucratic processes, and integrate cultural elements into conservation initiatives. Penang, on the other hand, should focus on strengthening institutional backing to scale up successful programs, implement structured educational campaigns to address misconceptions and promote behavioral change, enhance resource management, and formalize and document community environmental knowledge. Both regions would benefit from fostering interregional collaboration for knowledge exchange, utilizing technology for enhanced engagement and monitoring, implementing robust evaluation frameworks, and prioritizing youth engagement to ensure long-term sustainability. By addressing their respective challenges and capitalizing on their strengths, both Tongyeong and Penang can make significant strides in marine conservation and sustainability education.

5.0 CONCLUSION

Both Tongyeong and Penang demonstrate effective environmental education and conservation strategies, each with unique strengths. Tongyeong excels in structured, policy-driven conservation efforts, ensuring high institutional credibility, but it must work on enhancing public engagement and revitalizing traditional knowledge. Penang, with its hands-on, community-driven approach, successfully integrates conservation into everyday life, but stronger policy backing and structured funding will be necessary for long-term impact. A hybrid approach—combining Tongyeong's policy expertise with Penang's grassroots sustainability model—could create a more comprehensive and effective conservation strategy, ensuring that marine conservation efforts remain impactful and sustainable for future generations. The study underscores the vital role of educational and public

awareness initiatives in advancing marine conservation in Penang. While these programs have made significant strides in engaging communities and raising awareness, addressing resource constraints, improving impact evaluation, and fostering multi-stakeholder collaboration are critical next steps. By building on these findings, future research and practice can further enhance the effectiveness of conservation initiatives and contribute to the long-term sustainability of Penang's marine ecosystems.

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APPENDICES

APPENDIX I: ON-SITE INTERVIEWS WITH TONGYEONG STAKEHOLDERS

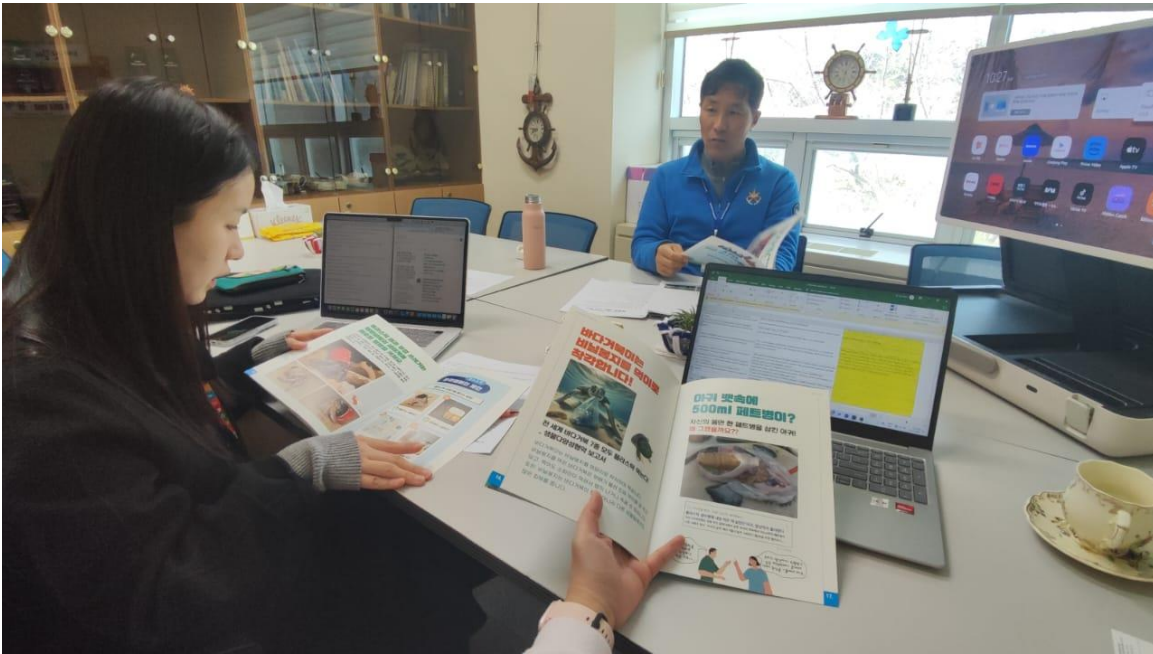


Interview with the fishermen community in Gon-ri Island.

Date: 4 December 2024



Debris from recreational fishing entangled amongst ropes along the rock revetments of Gon-ri Island.



Interview with the Director of Marine Education Centre Gyeongnam Province.



Interview with a facilitator for Seonchon Village.

APPENDIX II: INTERVIEW QUESTIONS & RESPONSES

PENANG, MALAYSIA

(i) Nature Classroom

Topic	Question	YOUR ANSWER
Role and Objectives	Can you briefly describe your role in this marine conservation initiative?	As founder of Nature Classroom, I conduct environmental education for local families and schools related to intertidal zone such as mudflat, mangrove and seagrass.
	What are the primary goals of this program, and why were they chosen for this region?	To let more people aware of the importance of intertidal area, especially Penang as an urban Island.
Program Activities and Engagement	What are the main activities or components of the program aimed at engaging the community?	Normally a complete program include an intertidal walk, coastal cleanup and an indoor workshop with some activities to reinforce the concept.
	Who is the primary target audience, and how do you encourage their involvement in marine conservation?	Local young families as well as students in highschools and college is our main target. Encourage through social media campaign.
Impact and Reach	In your view, what impact has this program had on public awareness or behavior?	Participants will have deeper understanding on the importance of intertidal wetland
	Do you have any measures or examples that demonstrate the program's reach and effectiveness?	No specific measurement, but we encourage all participants to follow up with a post in their social media (fb or ig) to give further impact.
	a) participant numbers	Around 200 pax per year (before closure of Pantai Bayan Mutiara in 2023)
	b) age group	5 to 65 year old
	c) event frequency	around 10 times per year (before closure of Pantai Bayan Mutiara in 2023)
	d) geographic distribution of outreach activities	Within Penang Island
Funding	Where does the funding for running the activities come from?	Mostly funded by fees paid by participants, occasionally might received some non-governmental funding such as from Penang Green Council, Wetland Link International etc.
	How often does the organization receive funding?	Once in two years
	How much funding does the organization receive per year?	Less than RM10000
Challenges	What challenges have you encountered in delivering this program, particularly in engaging the community?	The rapid development, for example we used to conduct program at Pantai Bayan Mutiara, but now is no longer available for activities.

	How do you address any misconceptions about marine conservation among participants?	Through indoor discussion session, we can share our thought openly and comfortably.
Cultural and Community Context	How have local cultural values influenced the program, and are there any unique approaches used to adapt to this community?	Always involve local community, we encourage the participants to talk with boatman and other fisherman on the intertidal zone to understand how wetlands around our island affect local lives and cultures.
Future Vision	What would you like to see as the future of this initiative, and are there strategies in place to sustain its impact?	When our participants become future leader, they can give better feedback to government policy and decision especially development involving coastal area or reclamation.

(ii) RCE Penang – original responses in Bahasa Malaysia

Topic/ Topik	Questions/ Soalan	YOUR ANSWER/ JAWAPAN ANDA
Peranan dan Objektif Role and Objectives	Bolehkah anda terangkan secara ringkas peranan anda dalam inisiatif pemuliharaan marin ini? Can you briefly describe your role in this marine conservation initiative?	<i>Saya adalah ketua projek di mana saya bertanggungjawab memastikan aktiviti dalam projek ini berjalan dengan baik. Saya juga membina jaringan dengan pihak-pihak berkuasa, pihak luar yang relevan bagi memastikan aktiviti dapat berjalan dengan lancar.</i> I am the project leader, responsible for ensuring that the activities in this project run smoothly. I also build networks with authorities and relevant external parties to ensure the activities can be carried out effectively.
	Apakah matlamat utama program ini, dan mengapa ia dipilih untuk rantau ini? What are the primary goals of this program, and why were they chosen for this region?	<i>Matlamat utama adalah bagi mengusahakan aktiviti pemuliharaan hutan bakau demi kelangsungan ekosistem bakau, di lokasi lapangan yang dikenalpasti dan mewujudkan pusat pendidikan dan penyelidikan berkaitan ESD dengan kerjasama penduduk setempat.</i> The main goal is to undertake mangrove conservation activities to ensure the sustainability of the mangrove ecosystem at identified field locations and to establish an education and research center related to ESD in collaboration with the local community.
Aktiviti Program dan Penglibatan Program Activities and Engagement	Apakah aktiviti atau komponen utama dalam program ini yang menjurus kepada penglibatan komuniti? What are the main activities or components of the program aimed at engaging the community?	<i>Terdapat 2 komponen utama dalam projek ini iaitu komponen pendidikan yang menekankan aktiviti kesedaran dan penambahbaikan pengetahuan tentang ekosistem tanah lembab (wetlands) dan komponen lapangan yang melibatkan aktiviti penanaman pokok bakau. Kedua-dua komponen ini melibatkan komuniti seperti komuniti setempat, komuniti sekolah termasuk murid, guru dan ibu bapa, komuniti NGO, universiti dan orang awam.</i> There are two main components in this project: the educational component, which emphasizes awareness activities and enhancing knowledge about wetland ecosystems, and the field component, which involves mangrove planting activities. Both components engage

		various communities, including local communities, school communities (students, teachers, and parents), NGOs, universities, and the general public.
	<p><i>Siapakah penerima sasaran utama, dan bagaimana anda menggalakkan penglibatan mereka dalam pemuliharaan marin?</i></p> <p>Who is the primary target audience, and how do you encourage their involvement in marine conservation?</p>	<p><i>Penerima manfaat utama adalah komuniti setempat, murid sekolah dan pelajar universiti. Galakan diberi menerusi pemberian sijil, bantuan persekolahan, pemupukan bakat murid, menaikkan imej positif sekolah, pembinaan galeri dan nurseri bakau, serta pertambahan jumlah pokok bakau di kawasan lapangan.</i></p> <p>The main beneficiaries are the local community, school students, and university students. Encouragement is provided through the awarding of certificates, educational assistance, talent development for students, enhancing the positive image of schools, the establishment of a gallery and mangrove nursery, and the increase in the number of mangrove trees in the field area.</p>
<p>Impak dan Pencapaian</p> <p>Impact and Reach</p>	<p><i>Pada pandangan anda, apakah impak daripada program ini terhadap kesedaran atau tingkah laku awam?</i></p> <p>In your view, what impact has this program had on public awareness or behavior?</p>	<p><i>Terdapat peningkatan ketara terhadap kesedaran dan pengetahuan murid sekolah dan ibu bapa tentang ekosistem bakau dan kepentingannya. Murid srkolah dan ibu bapa menunjukkan reaksi dan maklumbalas positif setiap kali program diadakan. Peserta program penanaman pula mendapat pendedahan dan pengetahuan secara experiential learning.</i></p> <p>There has been a significant increase in awareness and knowledge among school students and parents about the mangrove ecosystem and its importance. School students and parents consistently show positive reactions and feedback during each program conducted. Participants in the planting program also gain exposure and knowledge through experiential learning.</p>
	<p><i>Adakah anda mempunyai sebarang pengukuran atau contoh yang menunjukkan jangkauan dan keberkesanan program ini?</i></p> <p>Do you have any measures or examples that demonstrate the program's reach and effectiveness?</p>	<p><i>Senarai peserta bagi setiap aktiviti direkodkan. Data tentang keberkesanan program diambil sama ada menerusi soal selidik, temubual, dokumen analisis, bergantung kepada jenis program yang dianjurkan.</i></p> <p>The list of participants for each activity is recorded. Data on the effectiveness of the program is collected either through surveys, interviews, or document analysis, depending on the type of program organized.</p>
	<p>a) <i>bilangan peserta</i> participant numbers</p>	<p><i>250 bagi tahun 2024 sahaja</i></p> <p>250 for the year 2024 only.</p>
	<p>b) <i>kumpulan umur</i> age group</p>	<p><i>10 hingga 60 tahun</i></p>

		From 10 to 60 years old.
	c) <i>kekerapan program</i> event frequency	<i>purata 1 aktiviti setiap bulan dalam setahun</i> An average of 1 activity per month throughout the year.
	d) <i>taburan geografi aktiviti jangkauan</i> geographic distribution of outreach activities	<i>Di Sungai Merbok, Kedah dan Sungai Acheh, Nibong Tebal, Pulau Pinang.</i> In Sungai Merbok, Kedah, and Sungai Acheh, Nibong Tebal, Penang.
Funding <i>Pembiayaan</i>	<i>Dari manakah sumber pembiayaan diperolehi bagi menjalankan aktiviti-aktiviti ini?</i> Where does the funding for running the activities come from?	<i>agensi luar (antarabangsa)</i> External agencies (International)
	<i>Berapa kerap organisasi menerima pembiayaan?</i> How often does the organization receive funding?	<i>sekali setahun</i> Once a year
	<i>Berapa jumlah pembiayaan yang diterima organisasi setiap tahun?</i> How much funding does the organization receive per year?	<i>Lebih RM50,000.</i> More than RM50,000.
Challenges <i>Cabaran</i>	<i>Apakah cabaran yang anda hadapi dalam menyampaikan program ini, terutamanya dalam melibatkan komuniti?</i> What challenges have you encountered in delivering this program, particularly in engaging the community?	<i>Cabaran awal adalah dari segi mengubah persepsi dan paradigma masyarakat tentang kepentingan memulihara ekosistem bakau, dan peluang yang dapat ditawarkan oleh ekosistem bakau dalam mengubah sosio ekonomi masyarakat setempat.</i> The initial challenge was in changing the perceptions and paradigm of the community regarding the importance of conserving the mangrove ecosystem, and the opportunities that the mangrove ecosystem can offer in transforming the socio-economic conditions of the local community.
	<i>Bagaimana anda menangani sebarang salah tanggapan tentang pemuliharaan marin dalam kalangan peserta?</i> How do you address any misconceptions about marine conservation among participants?	<i>Cabaran ini dapat diatasi secara beransur-ansur menerusi kerjasama pemegang taruh yang terlibat dalam memberi pendedahan. Kejayaan program yang disebarkan secara lisan dan sebaran media juga berkesan dalam mengharungi cabaran ini. Bagaimanapun, walaupun terdapat perubahan pemikiran dan kesedaran, masih ada lagi cabaran dari segi perubahan sikap yang boleh diusahakan seperti aktiviti pembuangan sampah di pesisir Sungai Merbok.</i> This challenge can be gradually overcome through the cooperation of stakeholders involved in providing exposure. The success of the program, spread through word of mouth and media distribution, has also been effective in addressing this challenge. However,

		<p>despite changes in thinking and awareness, there are still challenges in attitude change that can be worked on, such as the issue of waste disposal along the banks of Sungai Merbok.</p>
<p>Cultural and Community Context <i>Konteks Budaya dan Komuniti</i></p>	<p><i>Bagaimanakah nilai budaya tempatan mempengaruhi program ini, dan adakah terdapat pendekatan unik yang digunakan untuk menyesuaikan program ini dengan komuniti ini?</i> How have local cultural values influenced the program, and are there any unique approaches used to adapt to this community?</p>	<p><i>Masyarakat di setiap tempat di mana aktiviti dijalankan mempunyai cara tersendiri dalam berinteraksi dengan alam sekitar, jadi pihak kami berusaha agar aktiviti yang dijalankan bergabung bersama dengan pandangan dan cara komuniti setempat secara positif supaya tidak timbul isu rejection. Pemimpin setempat juga dilibatkan dalam setiap aktiviti, di samping penglibatan pihak berkuasa seperti Jabatan Hutan dan BOMBA, untuk mewujudkan perasaan selamat.</i> The communities in each location where activities are carried out have their own ways of interacting with the environment. Therefore, our team strives to ensure that the activities align positively with the perspectives and practices of the local community to avoid any issues of rejection. Local leaders are also involved in every activity, alongside the participation of authorities such as the Forestry Department and the Fire and Rescue Department (BOMBA), to create a sense of safety.</p>
<p>Future Vision <i>Visi Masa Depan</i></p>	<p><i>Apakah yang anda ingin lihat sebagai masa depan inisiatif ini, dan adakah strategi yang ada untuk mengekalkan kesannya?</i> What would you like to see as the future of this initiative, and are there strategies in place to sustain its impact?</p>	<p>In the future, I would like to see this initiative expand to involve more communities and create a lasting network of conservation efforts across the region. The goal is to establish sustainable practices that become deeply integrated into the daily lives of the communities, ensuring long-term environmental protection.</p> <p>To sustain its impact, we are focusing on building local leadership and empowering communities to take ownership of conservation projects. This includes providing training and resources for community leaders to manage and continue the initiatives independently. Additionally, we are working on securing long-term funding and fostering partnerships with local governments, NGOs, and the private sector to ensure the program's continuity and growth.</p>

(iii) Penang Inshore Fishermen Welfare Association (PIFWA) – original responses in Bahasa Malaysia

Topic/ Topik	Questions/ Soalan	YOUR ANSWER/ JAWAPAN ANDA
Peranan dan Objektif Role and Objectives	<p><i>Bolehkah anda terangkan secara ringkas peranan anda dalam inisiatif pemuliharaan marin ini?</i></p> <p>Can you briefly describe your role in this marine conservation initiative?</p>	<p><i>Saya sebagai Pengerusi PIFWA akan mamastikan setiap perancangan dan program kesedaran dan pemuliharaan akan berjalan seperti yang di kehendaki</i></p> <p>As the Chairman of PIFWA, I will ensure that every planning and awareness program, as well as conservation efforts, will proceed as intended.</p>
	<p><i>Apakah matlamat utama program ini, dan mengapa ia dipilih untuk rantau ini?</i></p> <p>What are the primary goals of this program, and why were they chosen for this region?</p>	<p><i>Program ini di pilih kerana ia nya penting kepada setiap lapisan masarakat dan memberi peluang kepada generasi akan datang untuk menikmatinya</i></p> <p>This program was chosen because it is important to all segments of society and provides an opportunity for future generations to enjoy it.</p>
Aktiviti Program dan Penglibatan Program Activities and Engagement	<p><i>Apakah aktiviti atau komponen utama dalam program ini yang menjurus kepada penglibatan komuniti?</i></p> <p>What are the main activities or components of the program aimed at engaging the community?</p>	<p><i>Kami mengadakan kempen kesedaran melalui pemuliharaan hutan paya laut, pameran, demo prodak paya laut serta memantau pencemaran laut dan Sungai</i></p> <p>We conduct awareness campaigns through mangrove forest conservation, exhibitions, mangrove product demonstrations, as well as monitoring sea and river pollution.</p>
	<p><i>Siapakah penerima sasaran utama, dan bagaimana anda menggalakkan penglibatan mereka dalam pemuliharaan marin?</i></p> <p>Who is the primary target audience, and how do you encourage their involvement in marine conservation?</p>	<p><i>Penerima manfaat seperti pelajar sekolah rendah dan menengah, kolej, universiti serta agensi-agensi swasta serta kerajaan. Kami sentiasa memberi peluang kepada sesiapa sahaja yang ingin menyertai usaha ini</i></p> <p>The beneficiaries include primary and secondary school students, college and university students, as well as private and government agencies. We always provide opportunities for anyone who wishes to join this effort.</p>
Impak dan Pencapaian Impact and Reach	<p><i>Pada pandangan anda, apakah impak daripada program ini terhadap kesedaran atau tingkah laku awam?</i></p> <p>In your view, what impact has this program had on public awareness or behavior?</p>	<p><i>Usaha yang kami lakukan ini semenjak dari tahun 1997 hingga kini peserta sentiasa meningkat dari tahun ke tahun. Tambahan pula, peserta yang hadir sentiasa berkongsi maklumat berkaitan alam sekitar bersama-sama kawan-kawan mereka</i></p> <p>The efforts we have been undertaking since 1997 have seen a continuous increase in participants year after year. Moreover, the participants who attend consistently share environmental information with their friends.</p>

	<p><i>Adakah anda mempunyai sebarang pengukuran atau contoh yang menunjukkan jangkauan dan keberkesanan program ini?</i> Do you have any measures or examples that demonstrate the program's reach and effectiveness?</p>	<p><i>Pihak kami menyimpan rekod para peserta yang hadir dan kehadiran boleh mejangkau 4000 ke 6000 setahun</i> We maintain records of the participants who attend, and attendance can range from 4,000 to 6,000 annually.</p>
	<p>a) <i>bilangan peserta</i> participant numbers</p>	<p><i>Setiap program pemulihan yang diadakan kehadiran peserta ialah 50 -100 orang</i> The attendance for each conservation program held ranges from 50 to 100 participants.</p>
	<p>b) <i>kumpulan umur</i> age group</p>	<p><i>Sasaran umur 16 ke 50 tahun</i> The target age is between 16 and 50-years-old</p>
	<p>c) <i>kekerapan program</i> event frequency</p>	<p><i>Program 4-6 kali setiap sebulan</i> 4-6 programs a month.</p>
	<p>d) <i>taburan geografi aktiviti jangkauan</i> geographic distribution of outreach activities</p>	<p><i>Pulau Pinang dan selain negeri Pulau Pinang</i> Inside and outside of Penang.</p>
<p>Funding <i>Pembiayaan</i></p>	<p><i>Dari manakah sumber pembiayaan diperolehi bagi menjalankan aktiviti-aktiviti ini?</i> Where does the funding for running the activities come from?</p>	<p><i>Pembiayaan daripada aktiviti CSR oleh Syarikat-syarikat</i> Funding is provided through CSR activities by companies.</p>
	<p><i>Berapa kerap organisasi menerima pembiayaan?</i> How often does the organization receive funding?</p>	<p><i>Pembiayaan di terima mengikut permintaan</i> Funding is received based on requests.</p>
	<p><i>Berapa jumlah pembiayaan yang diterima organisasi setiap tahun?</i> How much funding does the organization receive per year?</p>	<p><i>Antara RM 50 000-Rm 100 000</i> Between RM50000-RM100000</p>
<p>Challenges <i>Cabaran</i></p>	<p><i>Apakah cabaran yang anda hadapi dalam menyampaikan program ini, terutamanya dalam melibatkan komuniti?</i> What challenges have you encountered in delivering this program, particularly in engaging the community?</p>	<p><i>Cabarannya hutan paya laut semakin kecil, pembangunan kolam-kolam udang dan ikan di hutan bakau, pencemaran alam sekitar dan kekurangan dana</i> The challenges include the shrinking mangrove forests, the development of shrimp and fish ponds in mangrove areas, environmental pollution, and a lack of funding</p>

	<p><i>Bagaimana anda menangani sebarang salah tanggapan tentang pemuliharaan marin dalam kalangan peserta?</i></p> <p>How do you address any misconceptions about marine conservation among participants?</p>	<p><i>Kami akan memberi taklimat serta kongsi pengalaman tentang kepentingan hutan paya laut, alam sekitar setiap program serta menerima pandangan lain untuk menambah baik</i></p> <p>We will provide briefings and share experiences on the importance of mangrove forests and the environment at each program, as well as receive other perspectives to improve our efforts.</p>
<p>Cultural and Community Context</p> <p><i>Konteks Budaya dan Komuniti</i></p>	<p><i>Bagaimanakah nilai budaya tempatan mempengaruhi program ini, dan adakah terdapat pendekatan unik yang digunakan untuk menyesuaikan program ini dengan komuniti ini?</i></p> <p>How have local cultural values influenced the program, and are there any unique approaches used to adapt to this community?</p>	<p><i>Komuniti sangat berminat sekiranya dapat terlibat secara langsung dengan program, di sebabkan Tsunami memberi pengalaman yang tak akan di lupakan</i></p> <p>The community is very interested in getting directly involved in the program, as the tsunami has provided an unforgettable experience.</p>
<p>Future Vision</p> <p><i>Visi Masa Depan</i></p>	<p><i>Apakah yang anda ingin lihat sebagai masa depan inisiatif ini, dan adakah strategi yang ada untuk mengekalkan kesannya?</i></p> <p>What would you like to see as the future of this initiative, and are there strategies in place to sustain its impact?</p>	<p><i>Harapan saya semoga program ini dapat di teruskan dan akan di sambung oleh generasi akan datang</i></p> <p>My hope is that this program will continue and be carried on by future generations.</p>

(iv) Malaysia Nature Society (Penang Branch)

Topic	Question	YOUR ANSWER
Role and Objectives	Can you briefly describe your role in this marine conservation initiative?	"I serve as the coordinator and plan activities align with the objectives of the program, I also manage partnerships with local schools, education department and Kelab Pencinta Alam's schools in Penang" in addition to serving as the Penang Branch Chair.
	What are the primary goals of this program, and why were they chosen for this region?	"Our main goals are to increase awareness about conservation of the biodiversity in the area, mainly Teluk Alr Tawar. Given the region's reliance on flyways, fishing and ecotourism, these goals are critical for both ecological and diversify economic reasons."
Program Activities and Engagement	What are the main activities or components of the program aimed at engaging the community?	"We organize coastal cleanup events, educational workshops, and school presentations. These activities provide hands-on experience and direct exposure to the importance of conservation practices in this specific area, TAT"

	Who is the primary target audience, and how do you encourage their involvement in marine conservation?	"Our primary audience includes local residents, especially the fishermen and school students. MNS-PPST is a yearly programme to create awareness on the importance of sustainability of biodiversity of TAT to school students in Penang. This is in addition to our census and count and events like World Wetlands day and Wrold migratory bird day
Impact and Reach	In your view, what impact has this program had on public awareness or behavior?	"We've seen increased awareness on the biodiversity in TAT. Many participants were surprised to hqave learned about the biodiversity in TAT the knowledge of certain species of birds in the area."
	Do you have any measures or examples that demonstrate the program's reach and effectiveness?	For best measrue of our success is the declaration of the area or habiat as a protcted area, for eaxmple part of the Penang IBA was declared as HSK- Permanent Forest Reserve
	a) participant numbers	40 STUDENTS for PPST, for others ranging from 3-40 participants, lower for Counts and Surveys.
	b) age group	11 TO 15 YEARS OLD - PPST, others all age grpup
	c) event frequency	For PPST Program with local school Children and also Asian Waterbird Census (AWC) with members and also Perhilitan, and World Wetlands Day and/or World Migratory Bird Day
	d) geographic distribution of outreach activities	All five districts of Penang State. Although Penang based and Penang focused we (as a Branch and as individual members) carry out conservation work in other Marine areas or Marne IBA's including like, Kapar Power Stattion, Kuala Selangor Coast, Kuala Gula- Matang Mangorve and coast and even further away at Pulau Layang-Layang.
Funding	Where does the funding for running the activities come from?	Governmental/non-governmental/industry/international (if other, please state)
	How often does the organization receive funding?	2-4 Times a year
	How much funding does the organization receive per year?	On average through the years about M\$20-60,000
Challenges	What challenges have you encountered in delivering this program, particularly in engaging the community?	Able to cater for certain number of students and only to be carried out at the end of the year. We need more volunteers and manpower to run the activity yearly.
	How do you address any misconceptions about marine conservation among participants?	We rarely meet participant that have misconception about our work, including marine conservation.
Cultural and Community Context	How have local cultural values influenced the program, and are there any unique approaches	Yes, we will try to suit into local culture and religion, including accounting for their sensitivities like praying time, religious festivals, diet etc., of all aspect/religion/race.

	used to adapt to this community?	
Future Vision	What would you like to see as the future of this initiative, and are there strategies in place to sustain its impact?	"I hope the program will lead to lasting changes in public behavior . We're looking into creating an annual event and securing long-term funding to ensure its sustainability."

(v) Shorebirds Peninsular Malaysia Project

Topic	Question	YOUR ANSWER
Role and Objectives	Can you briefly describe your role in this marine conservation initiative?	I serve as the coordinator for the Shorebirds Peninsular Malaysia Project. I oversee all programmes, initiatives, partnerships, and efforts in seeking funding for the project. This initiative aims to empower local communities, authorities, and the public to actively participate in shorebird conservation. We secure funding through both local and international grants.
	What are the primary goals of this program, and why were they chosen for this region?	The Shorebirds Peninsular Malaysia Project aims to empower local communities by providing them with conservation knowledge and raising awareness about the importance of shorebirds and mangrove ecosystems. We also support locals in developing community-based ecotourism initiatives that balance both human and wildlife welfare.
Program Activities and Engagement	What are the main activities or components of the program aimed at engaging the community?	We organise citizen science programmes, facilitate community knowledge sharing between university students, and conduct workshops with authorities. These activities offer authentic experiences and direct exposure to conservation practices.
	Who is the primary target audience, and how do you encourage their involvement in marine conservation?	Our primary audience includes local fishermen, teachers, tour guides, professionals, authorities, youth, and school students. We encourage participation through partnerships with NGOs and fishing communities, sponsorships, social media campaigns, and by providing volunteer certificates.
Impact and Reach	In your view, what impact has this program had on public awareness or behavior?	We have observed an increase in awareness about shorebird and mangrove conservation. Many participants have shown interest in promoting shorebird conservation and have volunteered in shorebird or environmental awareness programmes. Some even reach out to us with queries about shorebirds or other birds they encounter. Participants from authority agencies have expressed interest in efforts to conserve Teluk Air Tawar-Kuala Muda as a protected area and have shown commitment to promoting community-based ecotourism in the region.

	Do you have any measures or examples that demonstrate the program's reach and effectiveness?	We did not conduct surveys on the effectiveness of every event. However, we have evidence such as positive comments on social media and WhatsApp groups, as well as changes in participants' attitudes observed through their social media posts. We are now becoming more aware of the importance of recording follow-up surveys and have started implementing them for future programmes.
	a) participant numbers	The number of participants varies depending on the event. Due to the nature of our programmes, we cannot accommodate a large number of participants. Typically, our events are limited to a maximum of 20-40 participants.
	b) age group	It varies, as we cater to all age groups, including school children, youth, and adults.
	c) event frequency	3-4 times
	d) geographic distribution of outreach activities	Teluk Air Tawar-Kuala Muda, Penang & Kuala Selangor, Selangor (both are places to observe migratory shorebirds)
Funding	Where does the funding for running the activities come from?	The Habitat Foundation, WWF Hong Kong, Think City, France Embassy, Canon (Penang Branch), Wader Quest
	How often does the organization receive funding?	Once a year (sometimes overlapping to ensure the continuity of the project, as we seek funding to avoid any shortages).
	How much funding does the organization receive per year?	Between 10-50,000 (if combine 2 grants), we had received a grant with amount 70K plus also
Challenges	What challenges have you encountered in delivering this program, particularly in engaging the community?	At the beginning of this project, the biggest challenge was gaining trust, commitment and support from the fishing communities. However, by ensuring there was a win-win situation, such as offering tokens of appreciation when asking for their help, renting their community hall, and providing free participation for villagers from the area, we were able to build stronger relationships. Additionally, we initially lacked a local champion who could assist us on the ground.
	How do you address any misconceptions about marine conservation among participants?	We educate them by organising field trips to learn from successful communities that are passionate about environmental conservation and demonstrate how they can benefit from such activities. We also share our own experiences to inspire and motivate them. For example, we had a trip to the Mai Po Nature Reserve in Hong Kong (sponsored by WWF HK), where we brought the leader of the fishermen's unit, as well as fishermen, to Taman Paya Laut Bandar Lumut for an experiential learning trip.

Cultural and Community Context	How have local cultural values influenced the program, and are there any unique approaches used to adapt to this community?	The community's livelihood in this area comes from fishing activities, such as catching fish, prawns, and crabs. This is a long-standing tradition passed down through generations in the fishing community. Seafood-based dishes are also popular as part of the traditional food heritage, such as laksa, mee udang, char kueh teow, and many more. All of these seafood products are sourced from the mangrove ecosystem. Mangroves are breeding grounds for marine organisms. I often ask the fishing community to prepare special dishes like gulai semilang for programme participants, and I frequently order food from the local fishermen's stalls in the area.
Future Vision	What would you like to see as the future of this initiative, and are there strategies in place to sustain its impact?	I hope that the community can become local champions for protecting their area. I also hope that a younger generation will continue our efforts here, especially the locals. Most importantly, I will continue working to secure funding. I sincerely hope for support from the government and the local council to help with this conservation effort.

TONGYEONG, SOUTH KOREA

(i) RCE Tongyeong

Topic	Question	YOUR ANSWER
Role and Objectives	Can you briefly describe your role in this marine conservation initiative?	<p>While participating in activities to collect marine litter in Tongyeong, I realized that a significant portion of the trash was related to fishing, rather than general household waste. This raised the question: "Why do fishermen, whose livelihoods depend on the sea, misuse it in such a way?" This question led us to launch an outreach education program for fishermen in 2023. Instead of traditional education, we conducted workshops to understand fishermen's perceptions of marine litter and the difficulties they face in its disposal. Through these sessions, we identified key issues, including:</p> <ul style="list-style-type: none"> Changes in fish species and increased uncertainty due to rising sea temperatures, as well as mass deaths of aquaculture species. Marine litter originating from fishing activities (such as traps, ropes, and nets). Litter from anglers and tourists causing marine pollution. <p>My role involves planning the education program, training instructors to lead workshops and educational</p>

		<p>sessions, collecting results, and developing follow-up programs.</p>
	<p>What are the primary goals of this program, and why were they chosen for this region?</p>	<p>This year, we focused on issues related to marine litter caused by anglers and tourists, particularly angler-related problems, based on the topics identified in last year's workshops. In Korea, there are no specific regulations or education programs for anglers. Since the COVID-19 pandemic, outdoor hobbies such as camping and fishing have gained immense popularity as alternatives to crowded indoor activities. The rise in fishing was further fueled by popular TV shows, leading to over 10 million estimated recreational anglers in Korea today. This surge has brought issues such as:</p> <ul style="list-style-type: none"> Increased conflicts between fishermen and anglers. Environmental pollution caused by litter discarded during fishing. Carelessly discarded fishing gear causing fatal harm to marine life, including fish and birds. <p>Tongyeong, with its 500 islands, is a highly popular fishing destination, attracting an estimated 1 million anglers annually. This year, we selected the island of Gollido, known for its fishing activities, to conduct outreach education for anglers. Through these efforts, we aim to experiment with creating a sustainable fishing culture.</p>
<p>Program Activities and Engagement</p>	<p>What are the main activities or components of the program aimed at engaging the community?</p>	<p>Before starting the program, we realized that it would lack continuity if the residents of Gollido did not embrace the changes. Therefore, before the program began, we conducted educational briefings and workshops for local residents to explain the program and discuss fishing-related environmental issues. Together, we collected fishing litter from the village to raise awareness about its severity.</p>

	Who is the primary target audience, and how do you encourage their involvement in marine conservation?	The program targets anglers visiting Gonlido. We approach anglers directly and provide 5-10 minute educational sessions. To encourage eco-friendly fishing practices, we distribute reusable fishing towels and badges as gifts to reduce the use of disposable items like tissues.
Impact and Reach	In your view, what impact has this program had on public awareness or behavior?	Increase in awareness and deeper understanding
	Do you have any measures or examples that demonstrate the program's reach and effectiveness?	Data collection
	a) participant numbers	500
	b) age group	40-50s
	c) event frequency	Annual
	d) geographic distribution of outreach activities	Within Tongyeong
Funding	Where does the funding for running the activities come from?	City government
	How often does the organization receive funding?	per year
	How much funding does the organization receive per year?	USD2500
Challenges	What challenges have you encountered in delivering this program, particularly in engaging the community?	the reward system.
	How do you address any misconceptions about marine conservation among participants?	They know something is wrong. Ignorance. On-site explain and educate
Cultural and Community Context	How have local cultural values influenced the program, and are there any unique approaches used to adapt to this community?	Local knowledge has disappeared.
Future Vision	What would you like to see as the future of this initiative, and are there strategies in place to sustain its impact?	Have online education willingness to learn and change. Bigger campaigns. Three steps. Experiment whether effective or not. Expand more sites. Local regulations for local fishermen. make education more diverse. Boat fishing, seawall fishing. Expand education to tourists.

(ii) Marine Education Centre Gyeongnam Province

Topic	Question	YOUR ANSWER
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Role and Objectives	Can you briefly describe your role in this marine conservation initiative?	I am the Director of Marine Education Centre in Gyeongnam Province. I oversee marine education for fishermen, village people and school.
	What are the primary goals of this program, and why were they chosen for this region?	Our main goals are to increase awareness about marine pollution(trash) and promote sustainable practices using the ESD approach.
Program Activities and Engagement	What are the main activities or components of the program aimed at engaging the community?	Contest/competition/promoting programs in schools/campaigns/promotional booths/ focused on marine trash Organized by the centre
	Who is the primary target audience, and how do you encourage their involvement in marine conservation?	Fishermen, village people, schools
Impact and Reach	In your view, what impact has this program had on public awareness or behavior?	As the organization is only 1-year-old, it is not possible to evaluate it's impact at this point but we intend to do so by comparing past and present trends.
	Do you have any measures or examples that demonstrate the program's reach and effectiveness?	As the organization(Marine Eucation Centre in Gyeongnam Province) is only 1-year-old, it is not possible to evaluate it's impact at this point but we intend to do so by comparing past and present trends.
	a) participant numbers	
	b) age group	school to old fishermen 7- 80-years-old
	c) event frequency	fishermen : 28 times/year school : 3 shcools / 13 classes / 251 student
	d) geographic distribution of outreach activities	Within Tongyeong
Funding	Where does the funding for running the activities come from?	Governmental Public institutions, public funding
	How often does the organization receive funding?	Once a year
	How much funding does the organization receive per year?	2023: 60,000,000 2024: 100,000,000

Challenges	What challenges have you encountered in delivering this program, particularly in engaging the community?	A lack of will to practice is what makes education difficult. <i>The organization is increasing the sustainability of education by providing incentives (such as a scoring system that gives preference or advantages in government grant programs) to the fishermen.</i> Spontaneity is low. They are too old and education level is low. If explanation is not simply understood, the fishermen cannot empathize.
	How do you address any misconceptions about marine conservation among participants?	Through the holding of campaigns/promotional booths to inculcate / encourage self awareness which will hopefully lead to change of mindsets.
Cultural and Community Context	How have local cultural values influenced the program, and are there any unique approaches used to adapt to this community?	<p><i>The programs are designed to be community-friendly by incorporating local residents' memories and perspectives, and they also adopt unique approaches for student education by utilizing the local ecosystem.</i></p> <p><i>Emotion Cards: Residents compare the pristine past of their villages with current environmental issues, fostering empathy and a sense of responsibility.</i></p> <p><i>Local Species Utilization: Education programs for students feature local species (e.g., dolphins, anchovies) found in Tongyeong, allowing them to experience the ecological value of their region firsthand.</i></p> <p><i>These methods encourage both residents and students to develop a stronger connection to their environment and actively engage in conservation efforts.</i></p> <p><i>These culturally adapted methods have strengthened community trust and engagement, as reflected in the growing participation rates among both students and fishermen.</i></p>
Future Vision	What would you like to see as the future of this initiative, and are there strategies in place to sustain its impact?	<p>We hope to</p> <ol style="list-style-type: none"> 1) continue running awareness campaigns and booths and 2) possibly implement a fine system that forces people to adhere <p>Educational programs should expand to foreigners (especially foreign workers) and not only focused on Koreans. We are thinking of carrying out awareness and education campaigns in immigration centres.</p>

(iii) Seonchon Village

Topic	Question	YOUR ANSWER
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<p>Role and Objectives</p>	<p>Can you briefly describe your role in this marine conservation initiative?</p>	<p>Teacher/ESD instructor with the Seonchon Village programme since 2019. Prepare teaching materials. Integrate sustainability into my curricular. Seonchon has been designated as an MPA between 2020 and 2021. education, marine protected area conservation, and jellyfish nurturing projects, seagrass conservation.</p> <p>Biomonitoring, monitoring the sanctuary, working with children, mostly kindergarten, mid and high school. LEarned seagrass program from RCE Teongyeong and Blue Tongyeong 21. Studied about marine pollution.</p>
	<p>What are the primary goals of this program, and why were they chosen for this region?</p>	<p>Inform children. Travelling programs for children that stresses on the importance of the sea. Learn why Seonchon village is a marine, what kind of creatures live in the sea. Tour programs to see creatures yourself. Teach about mudflats, seagrass. Crab school for 3rd graders for upper elementary school. Taxonomic classification. sponges, molluscs, barnacles, crabs. Seagrass school for kindergarten children. seahorse school is for volunteer organizations. seahorses endemic to Korea. but number of species is decreasing.</p>
<p>Program Activities and Engagement</p>	<p>What are the main activities or components of the program aimed at engaging the community?</p>	<p>We live by the sea but some 6th graders have never been to the tidal flats before. Only when we know it can you protect it. The goal is to make it known. Making the sea known. Ocean is pretty on the outside but it is filled with marine debris.</p> <p>Programs with the elderly e.g. patients from dementia centres, health centres. all programs are free of charge. There are only two educators so there are limitations. People think they know the ocean.</p>
	<p>Who is the primary target audience, and how do you encourage their involvement in marine conservation?</p>	<p>Kindergarten, Middle school, elementary school. We are sending out letters asking people to apply based on the time table. Different programs for different species. Booklet is the same but stories will depend on the age. Villagers have participation income.</p>
<p>Impact and Reach</p>	<p>In your view, what impact has this program had on public awareness or behavior?</p>	<p>Initially, there were protest for marine reserves but after seeing the impact and seeing people take care of the ocean, educate themselves, and do things like protecting the ocean, they want a marine reserve too. At first people thought they would lose money from not being to fish in that area but now they like it because they can clean their village themselves and have income from it. Income comes from the gov. Picking up garbage from the Ocean, avoid throwing rubbish and food waste into the sea, planting seagrass. Gov gives money to carry out these efforts. Change is happening slowly. The younger gen is making changes. Seonchon village implements anchoring penalties - withholding permits for anglers who litter cigarrrete buds and fishing baits.</p>
	<p>Do you have any measures or examples that demonstrate the</p>	<p>Through participant records</p>

	program's reach and effectiveness?	
	a) participant numbers	35-55,000
	b) age group	7 to 80 years old
	c) event frequency	50
	d) geographic distribution of outreach activities	Within and beyond Tongyeong
Funding	Where does the funding for running the activities come from?	Patagonia supports the village a lot. They sponsor benches in front of the village to prevent people from parking too near the reserve or coming in too closely and this lessens the amount of trash.
	How often does the organization receive funding?	Once a year
	How much funding does the organization receive per year?	>USD 10,000.00
Challenges	What challenges have you encountered in delivering this program, particularly in engaging the community?	People think they know the ocean. People want to rest on their off days. Programs with parents in kindergarten seem to work better. Repeated visits shows their interest in the ocean. Issues with logistics like transportation. Budget has reduced tremendously. (R&D budget has reduced a lot nationally)
	How do you address any misconceptions about marine conservation among participants?	let people meet the sea personally. To increase understanding of the sea. Let them see with the eyes of the heart. When you go personally you see more than water, rocks, and waves. Cultivating to power to see.
Cultural and Community Context	How have local cultural values influenced the program, and are there any unique approaches used to adapt to this community?	Looking for more sustainable ways of teaching. Teaching without hurting the marine organisms. Create more opportunities for adults to learn. Increase awareness for creatures in the sea. Effects of climate change. Occurrence of tropical fish in the ocean. Monitoring is very important. Aim to increase number of monitorings per year.
Future Vision	What would you like to see as the future of this initiative, and are there strategies in place to sustain its impact?	For people to come and see it for themselves. Feel the ocean in person.

(iv) OSEAN

Topic	Question	YOUR ANSWER
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<p>Role and Objectives</p>	<p>Can you briefly describe your role in this marine conservation initiative?</p>	<p>I am responsible for marine debris-related education and operate a flagship program called the Citizen Scientist Training Course. In this program, I provide university students with education on marine debris data collection and analysis.</p>
	<p>What are the primary goals of this program, and why were they chosen for this region?</p>	<p>OCEAN is an institution that primarily investigates and researches marine debris. Marine plastic waste is one of the most critical marine pollution issues today, and addressing it requires not only research but also education on marine debris. Recognizing this necessity, we launched this education program.</p>
<p>Program Activities and Engagement</p>	<p>What are the main activities or components of the program aimed at engaging the community?</p>	<p>To engage the local community, OCEAN operates a citizen science initiative called the "Sea Guardians." This program allows citizens and university students to actively collect marine debris data and share it on a data platform. A key aspect of the program involves educating university students about marine debris and conducting fieldwork to practice data collection. Through these activities, we aim to raise awareness about marine debris issues among community members and encourage them to participate in finding solutions.</p>
	<p>Who is the primary target audience, and how do you encourage their involvement in marine conservation?</p>	<p>The primary participants in OCEAN's marine debris education and citizen science programs are university students. To encourage their active participation, we employ various promotional strategies. We utilize social media extensively to promote the program and ensure that students can easily access relevant information. Additionally, we directly contact university extracurricular program coordinators to introduce the program and explore collaboration opportunities. These strategies help more university students engage in marine debris-related activities, including hands-on training and data collection.</p>

Impact and Reach	In your view, what impact has this program had on public awareness or behavior?	OCEAN's marine debris education and citizen science program has positively influenced public awareness and behavior. Through education and field training, participants gain firsthand experience of the severity of marine debris issues and acquire scientific approaches to data collection. This experience enhances their environmental awareness and fosters long-term engagement in conservation efforts. Moreover, the "Sea Guardians" citizen science initiative provides opportunities for community members to directly participate in addressing marine debris issues. By collecting and sharing data, citizens become more conscious of the problem, leading to increased discussions and interest in marine conservation. Collaborating with universities has also enabled students to take an active role in environmental protection, contributing to long-term behavioral changes in the community.
	Do you have any measures or examples that demonstrate the program's reach and effectiveness?	→ Program name: Citizen Scientist Training Program
	a) participant numbers	20
	b) age group	20s
	c) event frequency	three times a year
	d) geographic distribution of outreach activities	Tongyeong and other regions (including Seoul)
Funding	Where does the funding for running the activities come from?	The program is operated as part of universities' extracurricular activities and is funded through university grants. In addition to education, OCEAN also conducts research projects, primarily funded by the Ministry of Oceans and Fisheries. Other major funding sources include local government grants and corporate sponsorships.
	How often does the organization receive funding?	Approximately 1.7 billion KRW (17 hundred million KRW).
	How much funding does the organization receive per year?	

Challenges	What challenges have you encountered in delivering this program, particularly in engaging the community?	
	How do you address any misconceptions about marine conservation among participants?	<p>A common misconception among participants is that marine debris can simply be resolved through beach cleanups. However, addressing the issue fundamentally requires reducing waste at the source, continuous monitoring, and data-driven approaches. Additionally, many participants believe that marine debris is a problem that occurs far out at sea or has no direct connection to them. Through education and hands-on training, we help them understand how waste from land enters rivers and oceans, the causes of marine litter, and preventive measures. To correct these misconceptions, OCEAN provides marine debris education and field training for university students and offers direct data collection experiences through the "Sea Guardians" program. We also utilize social media to spread awareness and collaborate with university extracurricular programs to encourage more participants to learn about the scientific aspects of marine debris and engage in practical conservation actions.</p>
Cultural and Community Context	How have local cultural values influenced the program, and are there any unique approaches used to adapt to this community?	<p>While we do not currently operate a region-specific marine conservation education program tailored to Tongyeong, we have implemented a volunteer point system for students who participate in beach cleanup activities. This initiative encourages active participation in marine debris removal and allows students to directly experience the severity of marine debris issues, fostering greater awareness and understanding.</p>

<p>Future Vision</p>	<p>What would you like to see as the future of this initiative, and are there strategies in place to sustain its impact?</p>	<p>OCEAN's marine conservation education program is expected to continue expanding and evolving. University student education and citizen science initiatives, such as the "Sea Guardians," are gaining increasing attention, and as social awareness of marine debris issues grows, participation is also expected to rise.</p> <p>To ensure the program's long-term impact, we have several strategies in place. First, we plan to strengthen partnerships with local communities and universities to improve accessibility to the program and integrate it into formal curricula or extracurricular activities. Second, we aim to systematically analyze the collected data and link it to policy recommendations. This approach will ensure that education extends beyond mere learning and leads to practical marine debris reduction efforts.</p>
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(vi) Hallyeohaesang National Park East Office

1. 귀하께서 해양 보전을 위한 교육 프로그램에서 맡고 계신 역할을 간단히 설명해 주실 수 있나요?

– 국립공원공단 한려해상국립공원동부사무소 소속으로 통영시와 거제시 지역 한려해상 국립공원의 역사 - 문화 - 자연 자원을 활용하여 국립공원 현장을 찾는 탐방객을 위한 자연해설 프로그램, 지역 청소년과 시민을 위한 환경교육, 그 외 생태관광, 문화행사 등을 기획, 운영하고 있습니다.

Could you briefly explain your role in the educational programs for marine conservation?

- I am affiliated with the Eastern Office of Hallyeohaesang National Park under the Korea National Park Service. My responsibilities include planning and operating nature interpretation programs for visitors to the national park sites in Tongyeong and Geoje, utilizing the historical, cultural, and natural resources of Hallyeohaesang National Park. Additionally, I plan and manage environmental education for local youth and citizens, as well as other activities such as ecotourism and cultural events.

2. 해당 교육 프로그램의 주요 목표는 무엇이며, 이러한 목표를 설정하게 된 배경이나 이유는 무엇인가요?

– 국립공원공단의 탐방프로그램은 탐방객이 국립공원의 우수한 자원을 건전하게 이용할 수 있도록 자연, 문화, 농어촌, 건강생태 등 다양한 체험 기회를 제공하는 서비스를 말합니다. 이런 프로그램 운영의 목적은 ① 국립공원의 자연과 문화를 이해하고 소중한 가치를 인식해 보호 의식을 함 ② 국민의 휴양 욕구 즉, 경험하지 못한 것을 보면서 아름답음을 감상하며 자기가 사는 세상을 더 잘 이해하고 배움에 대한 욕구 충족 ③ 자연이 주는 치유인자로 국민의 신체적·정신적 건강 증진 계기 제공하는 것입니다.

– 국립공원에서 운영하는 프로그램은 주로 다음과 같이 구분됩니다.

What are the main objectives of the educational programs, and what is the background or reason for setting these goals?

- The Korea National Park Service's visitor programs are designed to offer diverse experiential opportunities, such as nature, culture, rural communities, and health-related ecological experiences. These services enable visitors to responsibly enjoy the exceptional resources of the national parks. The purposes of operating these programs include:
 1. Enhancing understanding and appreciation of the natural and cultural values of national parks, fostering a sense of stewardship and protection.
 2. Satisfying the public's desire for recreation by providing opportunities to experience and appreciate beauty, understand the world they live in more deeply, and fulfill their curiosity and thirst for knowledge.

구분	운영 목적	정의
자연 해설	국립공원 해설자원에 내재한 의미와 탐방객의 관심을 지적·감성적으로 연결시켜 탐방 경험의 질 향상과 해설자원에 대한 긍정적인 태도 형성에 기여	국립공원 탐방객의 자연자원과 문화자원에 대한 관찰과 스토리텔링, 체험 놀이를 통해 국립공원 자원에 대한 관심 및 즐거움, 이해를 증진해가는 과정으로 2 시간 이내의 프로그램
생태 관광	생태우수지역(국립공원) 방문을 통한 자연환경 자원에 대한 이해와 인식 증대 및 국립공원 주변지역 방문 유도를 통한 지역경제 활성화 기여	국립공원 자연환경을 보전하고 지역사회의 문화와 복지 증진에 기여하기 위하여 국립공원 내·외부의 우수 자원과 지역문화를 체험하는 프로그램
환경 교육	조직적이고 연속적으로 이루어지는 체험을 통해 탐방객의 환경에 대한 경각심과 태도, 환경문제에 대한 민감성을 향상	정부의 교육정책과 교육과정과 연계하여 국립공원의 가치와 환경보전 의식을 함양하는 교육 프로그램
치유 프로 그램	국립공원의 자연환경을 활용한 자연 속 치유프로그램 운영으로 사회적 문제 해결 및 공단의 사회적 가치 실현	국립공원이라는 우수한 자연환경 속에서 환경과 건강의 긍정적인 관계를 체험하여 생활습관 개선과 신체적·정신적 건강 증진 계기를 제공하기 위해 개발·운영하는 프로그램
Cate gor y	Purpose	Definition
Nat ure Inte rpre	To connect the intrinsic meanings of national park resources with visitors' intellectual and emotional interests, enhancing the quality of their	A process designed to increase interest, enjoyment, and understanding of national park resources through observation, storytelling, and experiential activities (e.g., games), typically within a two-hour program.

tation	experience and fostering a positive attitude toward conservation.	
Ecotourism	To promote understanding and awareness of the natural resources of ecologically significant areas (e.g., national parks) while boosting the local economy through visits to surrounding communities.	A program aimed at preserving the natural environment of national parks while contributing to the culture and welfare of local communities through the experience of excellent natural resources and regional culture within and around the parks.
Environmental Education	To enhance visitors' awareness, attitudes, and sensitivity toward environmental issues through systematic and continuous experiential learning.	Educational programs linked to government education policies and curricula that aim to instill an appreciation of national park values and a consciousness for environmental conservation.
Healing Programs	To address societal issues and realize the Korea National Park Service's social value by providing nature-based healing programs that utilize the natural environment of national parks.	Programs developed and operated to offer opportunities for improving physical and mental health and promoting better lifestyle habits by experiencing the positive relationship between the environment and health within the superior natural settings of national parks.

3. 지역사회의 참여를 이끌어내기 위해 프로그램에서 중점적으로 시행하고 있는 주요 활동이나 구성 요소는 무엇인가요?

- 환경교육 프로그램 ① 한려해상국립공원 주니어레인저: 청소년 대상 자원봉사 연계형 진로체험 교육 프로그램으로 매년 중학생 1-2 학년 20 명을 모집하여 매월 1 회 8 회차로 운영하고 있으며, 국립공원 레인저 직종별 현장체험을 진행 ② 국립공원 바다학교: 지역 유치원아를 대상으로 산과 바다에 대한 놀이형 환경교육과 현장체험활동을 통해 자연생태계에 대한 소중함을 배울 수 있는 월 1 회, 8 회차 교육 프로그램
- 자연해설: 국립공원 현장을 찾는 탐방객을 대상으로 운영하며, 예약시스템을 통해 사전 예약이 가능함. 고정 자연해설 외 학교나 단체를 위한 협의형 프로그램도 진행 중
- 생태관광: 참여 대상 맞춤형 프로그램으로 취약계층 프로그램의 경우 무료로 진행하며, 관련 예산은 기업 기부금이나 국립공원 예산을 활용하여 진행함. 청년세대 대상 섬 탐방은 통영청년센터와 협력하여 운영중

What key activities or components are emphasized in the programs to encourage community participation?

• **Environmental Education Programs:**

1. **Hallyeohaesang National Park Junior Ranger Program:** A career-experience education program linked to volunteer activities for middle school students (grades 7–8). The program recruits 20 participants annually and runs monthly over eight sessions. It includes on-site experiences related to various roles of national park rangers.
2. **National Park Sea School:** An interactive environmental education program for kindergarteners. Through play-based learning and field activities focused on mountains and seas, the program helps children understand the importance of natural ecosystems. It is conducted once a month over eight sessions.

• **Nature Interpretation:**

Operated for visitors to national park sites, this program can be pre-booked through a reservation system. In addition to fixed interpretation sessions, customized programs are available for schools and groups through prior consultation.

• **Ecotourism:**

Tailored programs for specific participant groups, including free programs for underprivileged individuals. Funding for these programs comes from corporate donations or national park budgets. For young adults, island exploration activities are organized in collaboration with the Tongyeong Youth Center.

테마	대상	프로그램	장소	모집방법
계				
환경교육	중학생	한려해상국립공원 주니어레인저	통영	공문 발송
	유치원생	국립공원 바다학교 '바다야 사랑해!'	통영	공문 발송
자연해설	학교 단체	메타버스 타고 떠나는 내 손안의 국립공원	실내	사전 협의
	전연령	달아공원에서 만나는 섬과 바다	통영	상시 운영
	학교 단체	편백 숲에서 만나는 한려해상국립공원	통영	사전 협의
	전연령	이순신장군의 발자취를 찾아서	통영	상시 운영
	학교 단체	섬 건너 섬, 만지도와 연대도	통영	사전 협의
	전연령	신선대, 시간을 거슬러!	거제	상시 운영
	전연령	지심도 잇다? 잇다!	거제	상시 운영
생태관광	취약계층 단체	국립공원 생태나누리	전체	신청 접수
	임신부 가족	국립공원 자연 속 태교여행	통영	신청 접수
	야영객	한려해상 캠핑스쿨	거제	현장 접수
	지체장애인	오감맞춤 자연체험(수상힐체어)	거제	협의 운영
	청년세대	청년 섬 탐방 '통영섬플 같이갈래?'	통영	기관 협력 운영

Theme	Target Audience	Program	Location	Recruitment Method
Environmental Education	Middle school students	Hallyeohaesang National Park Junior Ranger	Tongyeong	Notification through official letters
	Kindergarten students	National Park Sea School "Love the Sea!"	Tongyeong	Notification through official letters
Nature Interpretation	School groups	"Exploring the National Park in Your Hands" via Metaverse	Indoor	Prior consultation
	All ages	"Islands and Seas at Dala Park"	Tongyeong	Open for all, year-round
	School groups	"Hallyeohaesang National Park in the Cypress Forest"	Tongyeong	Prior consultation
	All ages	"Following the Footsteps of Admiral Yi Sun-sin"	Tongyeong	Open for all, year-round
	School groups	"Island to Island: Manjido and Yeon-daedo"	Tongyeong	Prior consultation
	All ages	"Sinsundae: Journey Through Time"	Geoje	Open for all, year-round
	All ages	"Jisimdo: Connecting the Forgotten"	Geoje	Open for all, year-round

Theme	Target Audience	Program	Location	Recruitment Method
Ecotourism	Underprivileged groups	National Park Eco Sharing	All locations	Application submission
	Pregnant families	"Prenatal Trips in Nature"	Tongyeong	Application submission
	Campers	Hallyeohaesang Camping School	Geoje	On-site registration
	Individuals with physical disabilities	"Tailored Nature Experiences (Water Wheelchair)"	Geoje	Operated through consultation
	Youth	"Youth Island Exploration: Shall We Go to Tongyeong Island Together?"	Tongyeong	Operated in collaboration with institutions

- 위 프로그램 외에 국립공원공단 본사 요청이나 사무소 주요사업에 관련된 특화 프로그램을 추가로 운영합니다.

Additional Programs:

In addition to the listed programs, specialized programs are also organized based on requests from the headquarters of the Korea National Park Service or aligned with key projects of the local office. These programs are tailored to address specific objectives or highlight distinctive features of the region or initiatives.

4. 프로그램의 주요 대상은 누구이며, 이들의 적극적인 참여를 독려하기 위해 어떤 전략을 사용하시나요?

- 프로그램 홍보를 위해 관련 단체에 공문을 발송하며, 언론에 보도자료를 제공하거나 국립공원공단 홈페이지, 인스타그램 등을 SNS 채널을 활용하여 홍보하여 프로그램 참여자를 모집하고 있습니다.

4. Who is the main target audience of the program, and what strategies do you use to encourage their active participation?

- To promote the program, we send official notices to relevant organizations, provide press releases to the media, and utilize SNS channels such as the National Park Service website and Instagram to recruit participants for the program.

5. 이 프로그램이 지역사회의 공공 인식이나 행동에 어떤 긍정적인 영향을 미쳤다고 평가하시나요?

– 지역 국립공원 자연 - 문화자원을 알림으로써 국립공원의 생태적 가치를 홍보하고

이를 활용한 특화 프로그램 지속 운영 확대로 다양한 참여자를 대상으로 국립공원 생태 복지 서비스 수혜 기회 확대하기 위해 노력하고 있습니다. 이런 활동 들을 통해 참여자의 생태 감수성 증진과 지역 환경문제에 대한 인식 - 관심 증대로 인한 환경소양시민 양성 효과 있다고 생각합니다.

5. How do you evaluate the positive impact of this program on public awareness or behavior in the community?

- By promoting the natural and cultural resources of the local national parks, we aim to raise awareness of the ecological value of the national parks. We are working to expand opportunities for participation in national park ecological welfare services through the continued operation of specialized programs that utilize these resources. Through these activities, we believe that there has been an increase in ecological sensitivity among participants and heightened awareness and interest in local environmental issues, leading to the development of environmentally literate citizens.

6. 프로그램의 성과나 효과를 입증할 수 있는 구체적인 사례가 있다면, 아래 항목을 기반으로 설명해 주시기 바랍니다.

(참가자 수, 참가자의 연령대, 프로그램 또는 행사의 개최 빈도, 활동의 지리적 범위)

** 활동의 지리적 분포는 통영/통영 및 기타 지역으로 구분하여 답변해주시면 됩니다.*

- 2024 년 해양자원 활용 특화 프로그램 내용 및 실적

6. If there are specific examples that demonstrate the achievements or effectiveness of the program, please describe them based on the following criteria:

(Number of participants, age group of participants, frequency of programs or events, and the geographical scope of activities)

- Please distinguish the geographical scope as Tongyeong/Tongyeong and other regions.
- 2024 Marine Resource Utilization Specialized Program Details and Outcomes

현황 및 배경		주요 내용	추진실적
청년 세대	· 시사제정년진화지원사업확대 → 취업문제로인한스트레스	· 청년 섬 탐방 [통영섬플 같이 갈래] → 통영청년세움 프로그램 협력(23) → 해설사동행비다백리길탐방및홍보	· 청년센터주요사업 → 6 회, 137 명 참여
임신 가족	→ 섬탐방으로소통과재충전시간 · 출산친화적사회분위기조성 → 가족이함께하는생태여행	· 임신부 힐링 [자연 속 태교여행] → 임신부가족대상숙박형프로그램 → 건강한섬트레킹,육아용품만들기등	→ 홍보영상6 건제작 · 신규탐방약자모집 → 2 회, 43 명참여
야영 가족	→ 친환경건강힐링체험지원 · 친환경 캠핑문화선도 노력	· 한여름 학동 [한려해상 캠핑스쿨] → 친환경 LNT 캠핑, 해양 안전교육 → 로컬푸드 만들기, 훌라댄스 체험	→ 지역활동강사활용 · 여름원데이클래스 → 8 회, 168 명 참여
취약 계층	→ 자연과사람이행복한캠핑 → 지역특색문화체험기회제공 · 장애인대상해양체험 확대 → 수상휠체어체험지속운영 → 해중생태정호단협업신규기획	· 한려해상 바닷속 [무장애 플로빙] → 생애첫스쿠버다이빙11체험지원 → 단순관광지양,환경보전활동동참 · 국립공원속일상체험[머무름여행] → 2 년 연속 운영, SNS 17 건 홍보 → 친환경 여행 꾸러미 제작· 배부 → 해상형 셀프 체험 물멍키트 제공	→ 우케이션시설활용 · 장애인 해양 레저 → 3 회, 78 명 참여
			 <p>1,083,176원 '23년 1,842,477원 '24년 전년대비 70% 증가</p>

- 최근 5 년간 전체 탐방프로그램 운영 실적

Overall performance of the exploration programs in the last 5 years.

구분	2020 년	2021 년	2022 년	2023 년	2024 년
참여인원	10,232 명	7,033 명	1,814 명	19,273 명	16,739 명

Category | 2020 | 2021 | 2022 | 2023 | 2024

Participants | 10,232 people | 7,033 people | 1,814 people | 19,273 people | 16,739 people

7. 프로그램 운영 자금은 주로 어떤 경로를 통해 조달되나요?

– 국립공원공단은 환경부 산하기관으로, 국비로 탐방프로그램 운영비가 매년 배정되며, 그 외 후원기업의 예산이 민간수탁기금으로 배정되어 프로그램을 추가 운영하기도 합니다.

7. How is the funding for the program primarily obtained?

- The Korea National Park Service, as an affiliate of the Ministry of Environment, receives annual government funds for the operation of exploration programs. Additionally, the

budget from sponsoring companies is allocated as private entrusted funds, which are used to run additional programs.

8. 귀 단체는 어떤 종류의 예산을 통해 운영되나요? (자금 지원을 받는 경우) 자금 지원을 얼마나 자주 받으며, 해당 자금은 주로 어떤 기관이나 단체에서 제공되나요?

9. 연간 교육을 위한 운영금/지원금/자금 규모는 대략 어느 정도인가요?

(없음 / 3,000,000 원 미만 / 3,000,000 원 이상 ~ 15,000,000 원 이하 / 15,000,000 원 이상)

– 약 3~4 천만원 내외입니다.

9. What is the approximate scale of the annual operating funds/support/funding for the program?
(None / Less than 3,000,000 KRW / Between 3,000,000 KRW and 15,000,000 KRW / More than 15,000,000 KRW)

- It is approximately 30 to 40 million KRW.

10. 참가자들이 해양 보전에 대해 가지고 있는 잘못된 인식이나 부족한 이해를 개선하기 위해 어떤 방식으로 접근하시나요?

11. 참가자들이 가진 해양 보전에 대한 잘못된 인식 및 부족한 인식에 대한 부분을 어떻게 해결하나요?

12. 지역(통영 또는 프로그램을 주로 운영하는 곳)의 특성이 해양 보전 교육 프로그램에 미친 영향은 무엇이며, 이를 반영하여 지역사회에 맞게 적용한 사례가 있다면 공유 부탁드립니다.

– 주로 통영시가 도서지역이 많은 특성 때문에 다양한 해양쓰레기 문제, 해양레저 인구 증가로 인한 주민과의 마찰, 멸종위기 야생생물 남획 등 다양한 문제가 발생합니다.

이와 관련해서 지역 해양환경 문제와 관련한 프로그램 사례를 몇가지 소개하자면

사업명: 납 없는 국립공원 조성('17~'19 년)

(배경) 국내 납시인 800 만 시대, 유해 중금속 납추 사용으로 인한 해안 중금속 오염 문제에 대한 심각성 대두 ⇒ 국민 건강을 해치는 심각한 위협 요인 제거 필요

(추진실적) 한려해상국립공원 내 유-무인도서 및 수중 납 조사 및 제거

- ① 납 환경 위해성 검증 및 납 현존량 조사
- ② 유관기관 합동 납 제거 사업(63 개 도서, 2.4t)
- ③ 지역 해녀 대상 친환경 납 교체 지원(950kg)
- ④ 갯바위 생태휴식제 도입
- ⑤ 수거 납 활용 상징물 제작 및 언론보도 및 납시박람회 참여를 통한 착한 납시 캠페인 진행

(관련 프로그램) 안전한 바다, 깨끗한 바다! 해양쓰레기 ZERO!

- 한려해상국립공원의 해양생태계 소개, 해양쓰레기의 현황과 심각성
해양쓰레기 발생 원인, 착한 낚시 캠페인(납으로 인해 오염된 바다 소개) 등

Project Name: Lead-Free National Park Creation ('17-'19)

(Background) The rise of 8 million domestic anglers, with the serious issue of coastal heavy metal pollution due to the use of harmful lead sinkers, has highlighted the need to eliminate this serious threat to public health.

(Progress) Survey and removal of lead from islands and underwater areas within Hanryehaesang National Park:

- ① Verification of lead environmental risks and survey of existing lead levels
- ② Joint lead removal project with relevant organizations (63 islands, 2.4 tons)
- ③ Support for eco-friendly lead replacement for local female divers (950 kg)
- ④ Introduction of ecological rest areas for rocky shores
- ⑤ Production of symbolic items from collected lead, media coverage, and participation in fishing expos through the "Good (Related Program)" campaign: Safe Seas, Clean Seas!

Marine Litter Zero!

- Introduction to the marine ecosystem of Hanryehaesang National Park, the current state and seriousness of marine litter, causes of marine litter, and the "Good Fishing Campaign" (introducing seas polluted by lead).

사업명: 전문적 해양관리 활동(지속)

(배경) 풍요롭고 지속가능한 청정한 해양생태계 보전을 위한 집중 해양 현장관리 (추진실적)
바다와 사람을 위한 해양쓰레기 저감을 위한 노력

① (지속) 약 400t 의 해상 -해중쓰레기 수거 ② (해안) 미세플라스틱 흡입기 장비 개발(스티로폼 부이 잔해 제거) ⇒ 국제 컨퍼런스 및 한국위험물 학회 사례 발표

③ (해중) 지역 다이버팀 연계 국립공원 Clean-up 다이빙 프로그램 ④ 기업-단체 대상 해변입양제 도입(비진도, 학동해변 등) ⑤ 탐방객 해양쓰레기 수거 보상제도 ‘해치움 캠페인’ 운영

(관련 프로그램) 한려해상 바닷속 무장애 플로빙

- 사회적 취약계층인 장애인을 대상으로 국립공원 협력 자원봉사단체 해중생 태정화단과 협력하여 1:1 스쿠버다이빙 교육과 실습을 통해 생태관광도 즐기면서 해중 쓰레기를 함께 정화하는 프로그램

Project Name: Specialized Marine Management Activities (Ongoing)

(Background) Focused marine field management for the conservation of a rich and sustainable clean marine ecosystem.

(Progress) Efforts to reduce marine litter for the sea and people:

① (Ongoing) Collection of approximately 400 tons of marine and underwater debris

② (Coastal) Development of microplastic suction equipment (removal of styrofoam buoy debris) ⇒ Presentation at international conferences and the Korean Hazardous Materials Society

③ (Underwater) National Park Clean-up Diving Program linked with local diving teams

④ Introduction of a beach adoption program for businesses and organizations (e.g., Bijindo, Hakdong Beach)

⑤ Operation of a marine litter collection reward system for visitors through the "Haechium Campaign"

(Related Program) Hanryehaesang National Park Barrier-Free Floating

- A program for socially vulnerable groups, particularly people with disabilities, in collaboration with the National Park volunteer organization, Underwater Ecological Restoration Team. It involves 1:1 scuba diving training and practice to enjoy eco-tourism while cleaning underwater debris.

사업명: 지역 환경문제, 굴 껍데기 재활용 사업

(배경) 통영시의 굴 양식으로 발생하는 굴 껍데기 지속적 산적 문제 해결을 위한 활용방안 모색
(추진실적) ① 굴 껍데기 활용 창업기업 지원 ② 지역 창업기업과의 MOU 체결을 통해 굴 껍데기 재활용 제품 제작(굴 패각 세라믹 볼, 여행용 굴 패각 비누 등) ③ 관련 기업의 제품에 대한 동반성장 사업 지원

(관련 프로그램) 굴 껍데기 재활용 탐방 콘텐츠 개발

- ① 굴 껍데기 가루와 석고가루를 섞어 만든 환경교육 교구재 멸종위기종 생물 석고 피규어 제작 ⇒ 직접 색칠을 통한 기념품 제작 ② 굴 패각 세라믹볼 협업 제작으로 맨발걷기 지압용 황토볼을 대체하는 굴 껍데기 볼을 제작, 맨발걷기 체험존 조성

Project Name: Local Environmental Issues, Oyster Shell Upcycling Project

(Background) Searching for ways to address the ongoing issue of accumulated oyster shells generated from oyster farming in Tongyeong City.

(Progress)

- ① Support for start-up businesses utilizing oyster shells
 - ② Creation of oyster shell upcycled products through an MOU with local start-up companies (oyster shell ceramic balls, travel-sized oyster shell soap, etc.)
 - ③ Support for co-growth projects related to products from involved companies
- (Related Program) Development of oyster shell upcycling educational content

- ① Creation of environmental education tools using a mixture of oyster shell powder and gypsum powder, making endangered species freshwater gypsum figurines ⇒ souvenir production through direct coloring
- ② Production of oyster shell balls to replace the yellow earth balls used for barefoot walking acupuncture, in collaboration with oyster shell ceramic ball production, and establishment of a barefoot walking experience zone.

13. 운영하고 있는 해양 보전 교육 프로그램의 미래에 대해 어떻게 전망하며, 프로그램의 지속적인 효과를 위해 어떤 전략을 계획이 있다면 무엇인가요?

- 참여자가 직접 체험할 수 있도록 지역 환경문제를 경험하고 함께 문제 해결을 위한 액션을 할 수 있는 프로그램을 더 확대하고자 합니다.

13. How do you envision the future of the marine conservation education programs you are operating, and what strategies do you plan to ensure their continued effectiveness?

- We aim to expand programs that allow participants to directly experience local environmental issues and take action together to solve these problems.