A New Wave of Challenges: Youth Mental Health First Aid for Environmentally Affected Coastal Communities in Belize

#501SaveTheBeach

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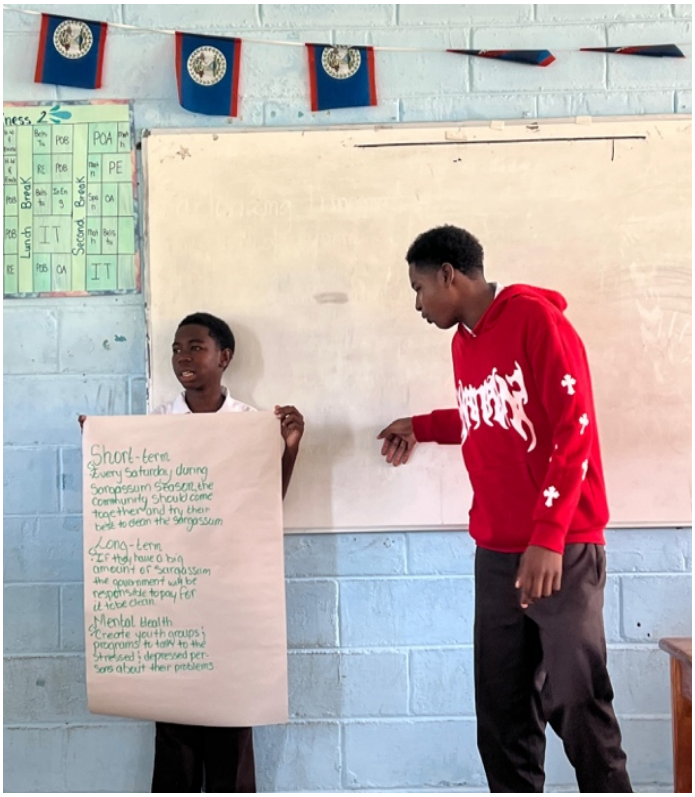
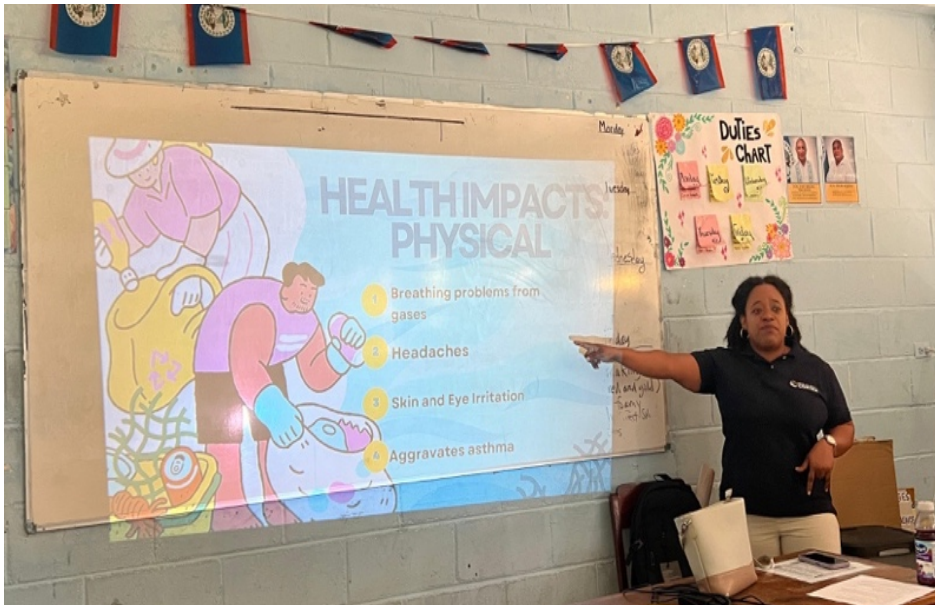
Presented to CARICOM HQ
December 11, 2025

Youth Mental Health First Aid Action Plan:





Addressing the Emotional and Educational Impacts of Sargassum in San Pedro Town & Dangriga Town, Belize, Central America

Preface

"I grew up walking barefoot on the crispy white sands of San Pedro Town, Belize, Central America. I remember feeling the sand beneath my toes long before the streets were paved. I remember endless beaches, open to everyone, with no tall buildings blocking access. It was free and part of my cultural heritage. That connection to the sea is who I am, and I stand here fighting to preserve it for future generations, for our children, and for those who may never know what this island was like in the late 1990s. We cannot let them inherit harm instead of heritage.

For many of us, the sea is a place of recovery, of self-discovery, of wonder. We swim with friends and family after a long day of stress. Now, with sargassum becoming a seasonal threat, we have an opportunity: to cultivate young minds, to innovate, and perhaps even create the next big thing: a sargassum-based industry. This miracle material industry can be self-sufficient, energy-producing, bio-fueling and most importantly Belizean!

The #501SaveTheBeach initiative is designed to do more than clean beaches. It is a call to action, a cultural shift, and a community movement. Youth can become agents of change, using a citizen science approach to explore sargassum byproducts while protecting our beaches from erosion. This is a call to be one with nature and a wake-up call to our local government that the time to act and invest is now. We cannot wait. Our beaches, our culture, and our future depend on it." **- CARICOM Youth Ambassador, Belize, Marissa Cervantes**

"As a health practitioner and health planner working within Belize's public health system, my work focuses on strengthening health systems while addressing the social, environmental, and climate-related factors that influence population wellbeing. The increasing influx of sargassum along Belize's coastline is a clear example of how climate variability and environmental change directly affect public health—particularly the mental, emotional, and educational wellbeing of adolescents living in coastal communities.

In towns such as San Pedro and Dangriga, recurring sargassum events disrupt daily life, affect school attendance and concentration, limit recreational spaces, and contribute to stress, anxiety, and uncertainty among young people. These impacts, while often overlooked, highlight the need to view environmental challenges through a health and psychosocial lens, especially for adolescents who are navigating critical developmental stages.

This project seeks to address these emotional and educational impacts by creating space for awareness, dialogue, and resilience-building among youth. It aligns closely with my creative work as a co-creator of Ahari, a Belizean children's storybook inspired by environmental stewardship and care for nature. Both initiatives are rooted in the belief that early education, cultural relevance, and emotional wellbeing are essential to building healthier, climate-resilient communities." - ***Co-creator of Ahari, Shayna Makin***

Executive Summary:

This report outlines a Youth Mental Health First Aid Action Plan designed to address the emotional, social, and educational impacts of recurring sargassum influxes on young people in San Pedro and Dangriga Town. Although sargassum has been widely studied for its ecological and economic effects, its psychological impact on youth who experience anxiety, disrupted routines, and household stress remains overlooked. This action plan responds by providing targeted mental health support, school-based workshops, environmental education, and youth empowerment activities that build resilience and awareness. The #501SaveTheBeach initiative focuses on youth ages twelve to twenty-nine and is implemented in collaboration with local schools, the CARICOM Youth Ambassador and health professionals. It presents the rationale, methodology, expected outcomes, and sustainability strategies needed to support emotionally resilient and environmentally informed Belizean youth.

Introduction:

Environmental change and ecological degradation have well-documented psychological consequences, particularly for young people who depend on stable environments for healthy emotional and social development (Wray, 2021). Along Belize's coastline, the ongoing influx of sargassum has created mounting psychological, environmental, and economic strain, with communities in **San Pedro** and **Dangriga** among the most affected. While the environmental and tourism-related consequences of sargassum are widely acknowledged, its mental health impacts especially on young people remain largely under-examined.

Emerging global research confirms a real and measurable correlation between climate change and mental health, linking environmental stressors such as pollution, ecosystem loss, and climate instability to anxiety, depression, grief, and emotional distress (Wray, 2021). However, these connections remain under-researched in Caribbean contexts, particularly within small coastal communities where environmental harm is experienced as a daily reality rather than a distant threat.

Young people are especially vulnerable to climate-related mental health stressors, as environmental instability disrupts daily routines, recreational spaces, family income, and long-term aspirations. In Belize's coastal communities, the loss of clean beaches, increasing sand erosion, and persistent sargassum events affect not only physical environments but also emotional well-being, cultural identity, and community pride. As familiar spaces deteriorate, youth may experience heightened eco-anxiety, uncertainty about the future, and diminished confidence in long-term social and economic stability.

This **Youth Mental Health First Aid Action Plan** seeks to address these intersecting challenges by providing early emotional support, mental health education, and resilience-building tools for young people living in sargassum-affected areas. By integrating mental health intervention with climate awareness and community engagement, the initiative recognizes that environmental protection and psychological well-being are deeply interconnected. Supported by mental health professionals, the CARICOM Youth Ambassador, and partnerships with two secondary schools, this plan aims to empower youth to cope with ongoing environmental change while actively participating in sustainable solutions that protect Belize's coastline and future.

Problem Statement:

Belize is increasingly affected by climate-related environmental shocks, with coastal communities bearing a growing share of the social and emotional burden. Over the past decade, the severity and frequency of sargassum influxes along Belize's coastline have intensified, disrupting daily life in communities such as San Pedro and Dangriga. Community feedback and preliminary observations suggest that adolescents and young adults in these areas experience heightened anxiety, physical discomfort related to odor and deteriorating air quality, reduced access to recreational and social spaces, and interruptions to academic activities during peak sargassum events. At the household level, economic losses linked to declines in tourism and fishing further compound stress, creating conditions that may negatively affect youth mental health and overall well-being. Despite these mounting pressures, structured systems of emotional support and targeted, youth-centered interventions remain limited, leaving many young people to navigate prolonged environmental and economic uncertainty on their own.

These social vulnerabilities are exacerbated by underlying weaknesses in Belize's financial risk management and disaster financing frameworks. Although physical emergency preparedness has improved, financial responses to climate-related shocks remain largely ad hoc, often resulting in delayed and costly post-disaster recovery. According to the *IMF Country Report No. 18/329: Climate Change Policy Assessment*, Belize lacks adequate fiscal and international reserve buffers and has limited use of advanced planning tools such as contingent borrowing, risk layering, and insurance mechanisms (International Monetary Fund & World Bank, 2018). The report recommends best-practice measures including the establishment of a contingency fund of approximately 1 percent of GDP, the securing of contingent credit lines with development partners, and the optimization of risk transfer instruments such as the Caribbean Catastrophe Risk Insurance Facility Segregated Portfolio Company (CCRIF SPC), together addressing disaster-related risks estimated at about 7 percent of GDP. Persistent capacity gaps in enabling legislation, public investment management, tax administration, and debt management further constrain Belize's ability to mobilize timely, concessional financing for climate adaptation and recovery.

Taken together, these challenges point to the urgent need for an integrated approach that strengthens Belize's climate resilience while addressing the often-overlooked mental health impacts of environmental shocks on youth. Aligning financial risk management reforms with investments in institutional capacity and youth-centered support mechanisms is critical to ensuring that climate adaptation efforts not only protect infrastructure and public finances, but also safeguard the social and emotional well-being of future generations.

Rationale:

In Belize, the gradual erosion of beaches in **San Pedro** and **Dangriga**, compounded by recurring sargassum influxes, represents not only an environmental emergency but also a cultural and psychological one. These coastal spaces are integral to community identity, recreation, tourism, and intergenerational livelihoods. Their slow degradation signals profound loss of place, security, and future opportunity.

As sargassum accumulates along the shoreline, it contributes to declining air quality, restricts outdoor activity, disrupts tourism, and reduces household income. For young

people, these impacts are experienced daily rather than abstractly, intensifying feelings of grief, anxiety, uncertainty, and helplessness. Research on climate-related mental health impacts demonstrates a clear correlation between environmental degradation and psychological distress, including eco-anxiety defined by the American Psychological Association as a "chronic fear of environmental doom" (Wray, 2021). Despite growing global recognition of these challenges, the mental health effects of climate change on youth remain significantly under-researched, particularly in Small Island Developing States such as Belize.

At the same time, environmental preservation and economic resilience must advance together. Investing in a **regulated sargassum-based industry** presents an opportunity to mitigate coastal erosion while generating sustainable revenue. The global seaweed market is projected to grow from **$16.7 billion in 2020 to $30.2 billion by 2025**, with applications spanning food, cosmetics, agriculture, and construction materials (Clouse, 2021). By transforming sargassum from a destructive environmental burden into a viable economic resource, Belize can create jobs, diversify local economies, and reinvest in coastal protection efforts. Most importantly, this approach empowers young people to engage directly in climate solutions while working to preserve the beaches of San Pedro and Dangriga for future generations.

Justification for Focusing on San Pedro and Dangriga:

San Pedro and Dangriga were deliberately chosen as the pilot sites due to their high exposure to severe sargassum influxes and their strong dependence on tourism, coastal recreation, and fishing. These sectors experience immediate impacts when sargassum accumulates, creating economic instability that affects entire households. Youths in both towns are influenced by cultural norms and community values that can foster a sense of national pride and encourage participation in climate action, but their engagement may be limited during periods when families face financial hardship, which can reduce access to educational and extracurricular opportunities. Although some local initiatives exist, both communities lack a structured, youth-centered support system that integrates emotional well-being with environmental understanding. The action plan aims to fill this gap through targeted interventions and sustainable community-based programming.

Key Emotional Challenges Facing Youth:

Regional research shows that many young people across the Caribbean are experiencing high levels of anxiety, persistent worry, and feelings of sadness or hopelessness, underscoring significant emotional and mental health pressures among Caribbean youth. In the 2025 Caribbean Child and Youth Mental Health Research Study by the CARICOM Secretariat and UNICEF, **58% of respondents expressed a lack of optimism about the future, 56% reported persistent worry, and 54% indicated feelings of sadness, depression, or hopelessness**, illustrating widespread psychological distress among children and adolescents in the region.

Young people in affected areas face a variety of emotional pressures related to sargassum influxes. Many may report stress and anxiety related to health concerns, foul odors, and changes in coastline appearance. The degradation of familiar beaches and natural spaces creates a sense of loss, reducing feelings of pride, identity, and belonging. Academic disruptions occur when students are unable to concentrate or participate in outdoor activities due to discomfort. Additionally, economic instability within households heightens family tension, which young people internalize. These emotional challenges illustrate the need for structured mental health interventions that acknowledge and address the environmental realities youths experience daily.

Objectives of the Action Plan:

The primary objective of this pilot action plan is to assess and enhance the emotional resilience and environmental awareness of at least one hundred students in San Pedro and Dangriga by December 2025, in the context of recurring sargassum influxes. The project seeks to achieve this through school-based workshops facilitated by mental health professionals and the local CARICOM Youth Ambassador, which include Mental Health First Aid training for teachers and students. Art is also used to support emotional wellbeing, with two murals being prepared under the guidance of the school art teacher. The pilot creates an opportunity for incoming CARICOM Youth Ambassadors to take forward ongoing initiatives, including the potential development of a Youth Resilience and Sargassum Awareness Guide in print and digital formats, offering coping strategies, breathing techniques, and examples of regional innovations involving sargassum. Data collected from the project will be shared with CARICOM to support financing and

program scaling. By fostering a culture of environmental stewardship and care for their local surroundings, the workshops empower youth to initiate their own sargassum clean-up campaigns and take active roles in climate action.

Expected Outcomes:

Short-term outcomes include increased student knowledge about sargassum, reduced anxiety related to environmental uncertainty, and improved access to emotional support from trained teachers and youth leaders. Students will gain a stronger sense of involvement in community environmental efforts, contribute to local discussions, and develop interest in environmental innovation projects. Long-term outcomes include sustained emotional resilience, increased youth participation in community-based environmental initiatives, and the integration of environmental mental health education into school wellness programs. Communities will be better equipped to respond to future ecological changes with informed, confident, and emotionally prepared youth.

Target Population:

The project targets youths aged twelve to twenty-nine in San Pedro Town and Dangriga Town, Belize. San Pedro Town, located on Ambergris Caye, is a coastal urban area with a population that includes a mix of local Belizean families, expatriates, and workers in tourism-related industries. Dangriga Town, the capital of Stann Creek District, is a culturally diverse town with a significant Garifuna population and students from both the town center and neighboring communities. The project specifically engages students from San Pedro High School and Stann Creek Ecumenical High School, as well as youth leaders, principals, and teachers. Approximately 50 students from each high school will participate, representing a mix of genders, grade levels, and socioeconomic backgrounds, reflecting the diversity of the local communities.

Implementation Plan:

The project will be executed in three phases. The initial phase focuses on planning and building relationships with partner organizations, beginning with formal outreach to the principals of **San Pedro High School** and **Stann Creek Ecumenical High School** to establish trust and secure support. During this phase, random sampling will be used to select 50 students from each school for baseline surveys to assess emotional wellbeing and perceptions of sargassum. Focus groups will then be conducted to inform and guide

the content of the workshops. In the second phase, workshops will be delivered, incorporating Mental Health First Aid training, environmental education, and small-group engagement sessions. Activities will culminate in the creation of an **art mural** led by the school art teacher, integrating coping strategies and environmental themes. A social media campaign, **#SaveTheBeach**, will follow to raise awareness. The final phase involves collecting participant feedback, conducting facilitator reflections, tallying surveys, and focus group findings.

Methodology:

This study employs a mixed-methods approach, combining quantitative and qualitative data to assess the emotional, social, and environmental impacts of sargassum on youth in coastal communities. A total of **100 students will participate voluntarily**, with **50 students from San Pedro High School and 50 students from Stann Creek Ecumenical High School**. Participation is entirely voluntary, and all responses will remain anonymous, with facilitators trained to recognize signs of emotional distress and provide referrals to mental health resources as needed.

Quantitative and qualitative data will be collected through the **Youth Well-Being & Sargassum Awareness Survey**, which contains **18 questions**, including **13 closed-ended items** and **5 open-ended questions** designed to capture students' perceptions, explanations, and suggestions regarding sargassum and its impacts. Demographic information such as age, gender, and ethnicity will also be collected.

Additional qualitative data will be gathered through **focus groups** of 3–6 students per group, selected via voluntary sign-up or teacher recommendation to ensure diversity in gender, grade level, and academic performance. Focus group discussions will explore students' awareness of sargassum, its environmental and economic impacts, personal experiences, coping strategies, and ideas for community solutions.

During **workshops**, students will participate in small-group activities to identify one short-term solution youth can implement, one long-term community change needed, and one mental health support strategy for schools or communities. This initiative will also include a **participatory art mural**, where students visually express coping strategies, environmental concerns, and proposed solutions, providing additional qualitative

insights through facilitator observations of engagement, emotional expression, and collaborative problem-solving

A **social media campaign (#SaveTheBeach)** will be launched to communicate community solutions publicly, with participation, creativity, and knowledge transfer documented as part of the evaluation process. Closed-ended survey responses will be analyzed using basic statistical methods, while open-ended survey responses, focus group discussions, workshop activities, the art mural, and social media outputs will undergo **thematic analysis** to identify patterns, concerns, and potential interventions. All findings will be compiled into a comprehensive final report to guide CARICOM and participating schools in planning, funding, and developing youth-centered educational and resilience initiatives.

Findings:

San Pedro Town, Belize:

Survey Findings Report (n = 50)

Section A – Emotional and Social Well-Being

Question 1: Impact of sargassum on mood or stress

Responses show that 74% (37 respondents) experienced a moderate to extreme impact (scores 3–5), while 18% (9 respondents) reported little or no impact (scores 1–2). 4 respondents (8%) did not answer.
Conclusion: Sargassum is a significant source of emotional stress for most students.

Question 2: Emotional response to seeing or smelling sargassum

(Multiple responses allowed)
Frustration was reported by 68% (34 respondents), followed by helplessness (10% / 5 respondents) and worry (4% / 2 respondents). Calm and curiosity were each reported by 2–4%, while 4% (2 respondents) described physical reactions such as nausea.
Conclusion: Emotional reactions are overwhelmingly negative, with frustration being the dominant response.

Question 3: Frequency of discussing feelings about sargassum

A combined 46% (23 respondents) reported discussing their feelings often or sometimes, while 42% (21 respondents) reported rarely or never doing so. 6 respondents (12%) did not respond.
Conclusion: Although emotional impacts are common, many students do not openly discuss their feelings.

Question 4: Comfort discussing stress, sadness, or anxiety

Only 2% (1 respondent) felt very comfortable discussing emotional distress. Most reported being somewhat comfortable (52% / 26 respondents) or not comfortable (34% / 17 respondents). 6 respondents (12%) did not answer.
Conclusion: There is limited emotional safety and comfort around mental health discussions.

Question 5: Changes in daily routine due to sargassum

While 62% (31 respondents) reported no changes, 30% (15 respondents) experienced disruptions to daily routines. 4 respondents (8%) did not respond.
Conclusion: A meaningful minority of students experience lifestyle disruptions linked to sargassum.

Question 6: Coping strategies used

(Multiple responses allowed)
Listening to music was the most common strategy (44% / 22 respondents), followed by talking to someone (16% / 8 respondents) and exercise (10% / 5 respondents). Notably, 24% (12 respondents) reported having no coping strategy.
Conclusion: Many students rely on passive coping methods, and a substantial proportion lack coping mechanisms altogether.

Question 7: Support needed to manage stress

(Multiple responses allowed)
Environmental cleanup initiatives were selected by 68% (34 respondents). Counseling, awareness campaigns, and recreational programs were each selected by 24% (12 respondents), while peer support groups were selected by 20% (10 respondents).

Conclusion: Students prioritize visible environmental action alongside mental health and educational support.

Section B – Knowledge and Awareness of Sargassum

Question 8: Knowledge of sargassum and its origins

Most respondents reported limited knowledge, with 54% (27 respondents) indicating "a little" and 10% (5 respondents) indicating no knowledge. Only 4% (2 respondents) reported knowing a lot. 4 respondents (8%) did not answer.
Conclusion: Despite frequent exposure, students lack strong foundational knowledge about sargassum.

Question 9: Perceived causes of sargassum buildup

Students identified climate change, warm waters, lack of removal technology, insufficient public awareness, weak community engagement, and delayed government response. All respondents answered.
Conclusion: Students view sargassum as both an environmental and governance challenge.

Question 10: Frequency of noticing sargassum

Daily exposure was reported by 40% (20 respondents), while 24% (12 respondents) noticed it a few times per week and another 24% (12 respondents) occasionally. 4 respondents (8%) did not answer.
Conclusion: Sargassum is a persistent and highly visible presence in students' environments.

Question 11: Smell and appearance of sargassum

The smell and sight were described as very unpleasant or overwhelming by 78% (39 respondents). Only 2% (1 respondent) found it not disturbing. 4 respondents (8%) did not respond.
Conclusion: Sensory discomfort is a major factor shaping negative perceptions of sargassum.

Question 12: Proximity to affected areas

Most respondents lived very close to affected areas (68% / 34 respondents), with 18% (9 respondents) living nearby. 2 respondents (4%) did not answer.
Conclusion: High proximity likely intensifies both exposure and emotional impact.

Question 13: Awareness of uses or solutions for sargassum

Only 22% (11 respondents) were aware of potential uses or solutions, while 70% (35 respondents) were not. 4 respondents (8%) did not respond.
Conclusion: Knowledge of sargassum innovation and reuse remains limited.

Question 14: Responsibility for managing sargassum

Nearly half (46% / 23 respondents) identified the government as most responsible, while 34% (17 respondents) emphasized collective responsibility. 4 respondents (8%) did not answer.
Conclusion: Students expect government leadership but recognize the need for shared action.

Question 15: Desired learning or actions

Students expressed interest in cleanup campaigns, stronger government intervention, proper disposal methods, health education, and learning how sargassum forms and travels.
Conclusion: Students are motivated to engage but need clearer guidance and structured opportunities.

Section C – Educational and Community Impacts

Question 16: School disruptions during heavy sargassum periods

A large majority (78% / 39 respondents) reported school disruptions, while 12% (6 respondents) did not. 5 respondents (10%) did not respond.
Conclusion: Sargassum frequently disrupts the school environment.

Question 17: Impact on learning environment or motivation

Negative impacts were reported by 76% (38 respondents) either greatly or somewhat. 5 respondents (10%) did not respond.

Conclusion: Sargassum significantly undermines learning conditions and student motivation.

Question 18: Community action to support youth

Most respondents (60% / 30 respondents) felt some efforts were being made, while 26% (13 respondents) felt efforts were few or nonexistent. 5 respondents (10%) did not answer.
Conclusion: Community responses are visible but widely perceived as insufficient.

Dangriga Town, Stann Creek:

Survey Findings Report – Dangriga Cohort (n = 50)

Section A – Emotional and Social Well-Being

Question 1: Impact of sargassum on mood or stress

Responses show that 44% (22 respondents) reported a moderate to extreme impact (scores 3–5), while 36% (18 respondents) reported little or no impact (scores 1–2). 10 respondents (20%) did not answer.
Conclusion: Emotional impact is present but less intense overall compared to other cohorts, with a notable portion of students reporting minimal effects.

Question 2: Emotional response to seeing or smelling sargassum

(Multiple responses allowed)
Frustration was the most common response (40% / 20 respondents), followed by worry (16% / 8 respondents) and curiosity (10% / 5 respondents). Calm and helplessness were each reported by 6% (3 respondents), while 2% (1 respondent) selected "other."
Conclusion: Most respondents feel frustrated by the presence of sargassum, but emotions also include worry, curiosity, calm, and helplessness, showing a variety of reactions to the situation.

Question 3: Frequency of discussing feelings about sargassum

Most respondents reported limited discussion, with 54% (27 respondents) indicating they never talk about their feelings and 28% (14 respondents) indicating rarely. Only 16% (8 respondents) reported discussing feelings often or sometimes. 1 respondent (2%) did not respond.

Conclusion: Emotional impacts are largely internalized, with minimal peer or adult discussion.

Question 4: Comfort discussing stress, sadness, or anxiety

Only 8% (4 respondents) felt very comfortable discussing emotional distress. 44% (22 respondents) felt somewhat comfortable, while 46% (23 respondents) were not comfortable. 1 respondent (2%) did not answer.
Conclusion: Discomfort around mental health discussions is widespread.

Question 5: Changes in daily routine due to sargassum

A large majority (88% / 44 respondents) reported no changes to their daily routine, while 10% (5 respondents) reported changes. 1 respondent (2%) did not answer.
Conclusion: For most students in Dangriga, sargassum has not disrupted daily routines.

Question 6: Coping strategies used

(Multiple responses allowed)
Listening to music was reported by 24% (12 respondents), talking to someone by 12% (6 respondents), exercise by 6% (3 respondents), and journaling by 4% (2 respondents). Notably, 52% (26 respondents) reported having no coping strategy.
Conclusion: More than half of respondents lack coping mechanisms for environmental stress.

Question 7: Support needed to manage stress

(Multiple responses allowed)
Environmental cleanup initiatives were selected by 54% (27 respondents). Counseling or mental health workshops (30% / 15 respondents) and awareness campaigns in schools (28% / 14 respondents) followed. Recreational programs were selected by 22% (11 respondents), and peer support groups by 12% (6 respondents).
Conclusion: Students prioritize environmental action, supported by education and mental health services.

Section B – Knowledge and Awareness of Sargassum

Question 8: Knowledge of sargassum and its origins

No respondents reported knowing "a lot." 36% (18 respondents) reported knowing a little, while 30% (15 respondents) reported knowing nothing at all. 16% (8 respondents) reported knowing some. 9 respondents (18%) did not respond.
Conclusion: Knowledge of sargassum is generally low, with substantial uncertainty.

Question 9: Perceived causes of sargassum buildup

Students cited climate change, ocean currents, pollution from nearby countries, littering, and uncertainty ("I don't know").
Conclusion: Understanding of causes is fragmented and mixed with uncertainty.

Question 10: Frequency of noticing sargassum

Most respondents reported infrequent exposure, with 46% (23 respondents) noticing it occasionally and 32% (16 respondents) rarely. Only 16% (8 respondents) reported frequent exposure (daily or a few times per week). 3 respondents (6%) did not answer.
Conclusion: Most respondents see sargassum infrequently, indicating it appears intermittently rather than continuously.

Question 11: Smell and appearance of sargassum

A combined 60% (30 respondents) described sargassum as very unpleasant or overwhelming. 22% (11 respondents) found it mildly disturbing, while 4% (2 respondents) did not find it disturbing. 6 respondents (12%) did not answer.
Conclusion: Sensory discomfort remains a significant concern despite less frequent exposure.

Question 12: Proximity to affected areas

Respondents were more geographically dispersed: 18% (9 respondents) lived very close, 38% (19 respondents) lived nearby, and 40% (20 respondents) lived far from affected areas. 2 respondents (4%) did not answer.
Conclusion: Greater distance from affected areas may explain lower reported impacts.

Question 13: Awareness of uses or solutions for sargassum

Only 4% (2 respondents) were aware of any uses or solutions, while 94% (47 respondents) were not. 1 respondent (2%) did not respond.
Conclusion: Awareness of sargassum reuse or innovation is extremely limited.

Question 14: Responsibility for managing sargassum

Responsibility was split between government (26% / 13 respondents) and collective responsibility (32% / 16 respondents). Local community responsibility was also emphasized (32% / 16 respondents). 4 respondents (8%) did not answer.
Conclusion: Students favor shared responsibility rather than reliance on government alone.

Question 15: Desired learning or actions

Students expressed interest in learning what sargassum is, why it occurs, how to manage the smell, and how they can help through cleanups.
Conclusion: There is strong interest in practical, accessible education.

Section C – Educational and Community Impacts

Question 16: School disruptions during heavy sargassum periods

Only 20% (10 respondents) reported school disruptions, while 72% (36 respondents) did not. 4 respondents (8%) did not respond.
Conclusion: Educational disruptions are less common in Dangriga.

Question 17: Impact on learning environment or motivation

Negative impacts were reported by 30% (15 respondents) either greatly or somewhat. 66% (33 respondents) reported little to no impact. 2 respondents (4%) did not answer.
Conclusion: Sargassum has a relatively limited effect on learning motivation.

Question 18: Community action to support youth

Most respondents (50% / 25 respondents) felt some efforts were being made, while 36% (18 respondents) felt efforts were few or nonexistent. 3 respondents (6%) reported many actions, and 4 respondents (8%) did not answer.

Conclusion: Community action is visible but widely viewed as insufficient.

Section A – Emotional and Social Well-Being:

Students in San Pedro report stronger emotional impacts from sargassum, with 74% experiencing moderate to extreme stress, compared to 44% in Dangriga. Frustration is the most common emotional response in both cohorts, but Dangriga shows a slightly more varied emotional profile with curiosity and worry more frequently reported. Comfort discussing emotions is low in both groups, though Dangriga students are slightly more uncomfortable overall, and coping strategies are more limited, with over half lacking any coping mechanisms. San Pedro students also experience more routine disruptions (30% vs. 10%). Overall, San Pedro youth appear more directly affected emotionally and in daily life, while Dangriga students internalize stress with fewer lifestyle impacts.

Section B – Knowledge and Awareness of Sargassum:

Knowledge levels about sargassum are low in both cohorts, but Dangriga students show higher uncertainty, with nearly half either knowing little or nothing and 18% non-responding, compared to San Pedro where 54% knew a little. Awareness of potential uses or solutions is limited in both, though far lower in Dangriga (4% vs. 22%). Students in San Pedro report more frequent and consistent exposure to sargassum, likely contributing to higher environmental awareness. Both cohorts cite climate change and human activity as causes, but Dangriga responses include more uncertainty and lack of specific knowledge, reflecting less direct interaction with the issue.

Section C – Educational and Community Impacts:

School disruptions and negative impacts on learning are much more pronounced in San Pedro, with 78% reporting disruptions and 76% noting motivational impacts, compared to only 20% and 30% in Dangriga, respectively. Community action is perceived as insufficient in both towns, though San Pedro students report more visible interventions than Dangriga (60% vs. 50% noting some action). Overall, sargassum appears to have a more acute effect on San Pedro's educational environment, while Dangriga's exposure is less intense, though both communities still require stronger support and engagement efforts.

Focus Group Session:

A focus group was conducted with four female students from **San Pedro High School**, selected through recommendation by the vice principal, to assess baseline knowledge and perceptions of sargassum. The discussion revealed that students recognize both the negative and potential beneficial aspects of sargassum, often describing it as environmentally harmful yet potentially useful. Participants commonly associated sargassum with harmful gases, health risks, and damage to marine ecosystems, particularly coral reefs. They also referenced local practices, including the use of sargassum as landfill material, specifically noting a local football field that had been filled using sargassum. These responses indicate general awareness of sargassum's impacts, although students relied largely on informal or incomplete information that blends scientific concepts with community observations.

Students demonstrated partial understanding of the causes and drivers of sargassum influxes but exhibited notable knowledge gaps. While most believed warmer temperatures increase sargassum occurrence, they were largely unable to identify its geographic origin, or the oceanographic processes involved. In contrast, environmental, health, and economic impacts were articulated with greater clarity, particularly those experienced locally. Reported effects included allergic reactions, headaches, unpleasant odors, restricted swimming, and concerns about infections, as well as disruptions to fishing activities due to clogged engines and limited shore access. Students also highlighted economic impacts related to tourism, including visitor dissatisfaction, cancellations, and the financial burden of beach cleanups for resorts, reflecting strong community-level awareness shaped by lived experience.

When discussing education, preparedness, and solutions, students emphasized the need for clearer, more accessible, and science-based information. Although schools and communities address sargassum to some extent, participants felt that existing information is insufficient, particularly for students outside the sciences. Proposed solutions prioritized awareness-building as a foundational step, followed by practical interventions such as organized cleanup efforts, offshore collection using barges equipped with nets to intercept sargassum at sea, and the repurposing of collected sargassum for productive use. Suggested applications included using sargassum as

fertilizer to support greening initiatives around the island, as well as for construction materials, paper production, or landfill use. Overall, the findings indicate that while students are concerned and motivated, they require structured education and institutional support to move from general awareness toward informed engagement and solution-oriented action.

A second focus group conducted at **Stann Creek Ecumenical High School in Dangriga Town**, involving six students of mixed gender, revealed patterns both like and distinct from those observed in San Pedro. Participants demonstrated general awareness of sargassum and some familiarity with its potential byproducts, particularly fertilizer. However, their understanding of sargassum's origins remained limited. Students broadly associated sargassum with the ocean while noting that it does not originate in colder regions. None of the participants were familiar with the Sargasso Sea, indicating persistent gaps in oceanographic knowledge across cohorts.

Students articulated the impacts of sargassum primarily through environmental degradation and economic disruption, with a strong emphasis on tourism. They described sargassum accumulation as visually unappealing, producing strong odors, drying, and darkening coastal land, and reducing marine life presence. Personal and household experiences reinforced these perceptions, including accounts of family members missing work due to illness following prolonged cleanup efforts and the recurring nature of sargassum influxes despite sustained removal. These lived experiences strengthened students' understanding of sargassum as a cyclical and escalating challenge affecting both livelihoods and community well-being.

In contrast to the first cohort, participants in Dangriga expressed even greater dissatisfaction with the availability and depth of information on sargassum. While some outreach occurs through social media, students felt it lacked clarity and practical relevance. Science instruction was described as addressing climate change only at a basic level, with minimal focus on sargassum specifically. Students emphasized a preference for experiential, place-based learning, such as visits to affected beaches. Although most were unaware of existing sargassum byproducts and had not observed local reuse, they proposed community-oriented responses, including youth-led outreach initiatives, face-to-face education, organized cleanups, and exploratory projects aimed at transforming

sargassum into usable products. Collectively, these findings underscore the need for applied, hands-on environmental education that connects scientific understanding with local realities and youth-led action.

Workshop Activity:

The Solution Sprint findings from **San Pedro High School** indicate that students perceive pollution and sargassum influxes as the most immediate environmental challenges affecting their community, followed by coral reef degradation and unsustainable consumer behavior. Across groups, students emphasized the importance of youth-led, short-term actions, particularly school- and community-based cleanup campaigns, summer programs to organize sargassum removal, and creative reuse of waste materials. Awareness-raising through online platforms and peer engagement was also viewed as an effective way to influence behavior and protect marine ecosystems.

In terms of long-term solutions, students consistently identified the need for structural and policy-level changes. These included expanding garbage and recycling infrastructure, investing in equipment to intercept sargassum before it reaches shore, enforcing environmental regulations to prevent ocean pollution, and encouraging more responsible consumption patterns through sustained advocacy and education. The findings suggest that students can distinguish between immediate actions within their control and broader systemic changes requiring institutional support.

Notably, all groups integrated mental health considerations into their responses, indicating an understanding of the emotional and psychological impacts of environmental stressors. Proposed supports included school-based and virtual counseling services, mental health workshops to address the health effects of sargassum exposure, and the creation of clubs or safe spaces where students can discuss concerns openly. Overall, the findings demonstrate that students approach environmental challenges holistically, linking ecological protection, community action, and mental well-being as interconnected components of climate resilience.

The Solution Sprint findings from **Stann Creek Ecumenical High School in Dangriga** highlight a strong emphasis on community-led environmental action, particularly around pollution and sargassum management. Across the five groups, students prioritized

youth-led cleanup initiatives as short-term solutions, proposing regular schedules such as bi-monthly or weekly cleanups, Saturday programs during sargassum season, and broader countrywide efforts. Awareness campaigns were also emphasized, particularly for sargassum, to ensure community understanding before action is taken. Students highlighted the role of organized participation, including youth groups and community collaboration, as central to the effectiveness of these activities.

Long-term strategies proposed by students focused on structural and policy-level interventions. Recommendations included enforcing fines for littering, government-led collection of larger sargassum deposits, restoration of mangroves to protect coastlines, and sustained national cleanup campaigns. These approaches demonstrate students' understanding of the need for systemic support alongside local action to address environmental challenges sustainably.

Mental health and well-being were consistently integrated into the proposed solutions. Students suggested counseling services at school for those affected by eco-stress, journaling as a tool to process environmental concerns, and engaging in leisure activities such as listening to music to cope with stress. Overall, the Dangriga cohort emphasized the importance of combining practical environmental action, policy enforcement, and psychosocial support, reflecting a holistic approach to climate resilience and community well-being.

Limitations of the Study:

The study faced several limitations, primarily related to timing, scope, and partnership opportunities. Data collection took place in December, a period when both participating schools were focused on holiday celebrations, which affected student availability and concentration. Consequently, responses may have been less consistent or in-depth than anticipated. Additionally, at least five surveys from each batch were lost or incomplete due to human error, further limiting the dataset and potentially impacting the comprehensiveness of the findings. To address these challenges, future data collection is recommended to begin in January, when students and educators are more settled and able to fully engage with the activities.

Another limitation was related to the project's deliverables. While the initiative aimed to produce a ***Youth Resilience and Sargassum Awareness Guide***, time constraints prevented its completion. This component could be introduced to a subsequent cohort to ensure learners receive it under optimal conditions. The study also underscored the need for more workshops and educational sessions, particularly in coastal communities beyond the islands, as environmental and mental health topics like sargassum influx require repeated engagement to be fully understood. Although awareness of sargassum is not entirely new, additional sessions are necessary to reinforce scientific understanding, deepen knowledge, and sustain youth-led resilience and environmental initiatives.

Finally, partnership and coordination efforts were also constrained. Efforts to collaborate with NGOs were limited by time and the small number of organizations on the island. Coordination with the relevant department proved challenging, as responses were sometimes delayed or required repeated follow-ups, which restricted the scope of collaboration and access to additional resources for the project. Addressing these limitations in future iterations will help strengthen engagement, data quality, and overall impact.

Recommendations:

It is recommended that Belize's national curriculum integrate a dedicated climate change component within the science program. This component should introduce foundational climate science while addressing key ecological threats, including sargassum influxes and coastal ecosystem degradation, as well as practical preventative measures communities can adopt to reduce vulnerability. Schools would further benefit from the introduction of annual science and business fairs that use sargassum as a core material for student research and innovation, encouraging creativity, problem-solving, and applied learning. Environmental clubs should also be strengthened to promote year-round student engagement, leadership development, and hands-on participation in climate-related initiatives. To support emotional well-being alongside environmental education, art-based activities can be incorporated as a coping and expression strategy. Initiatives such as mural projects, visual storytelling, and community art installations would allow students to express environmental concerns, reflect on local climate challenges, and creatively explore solutions. By integrating scientific learning with artistic expression,

schools can foster resilience, environmental stewardship, mental health awareness, and community engagement among youth.

Cross-border collaboration is essential for advancing local innovation and applied solutions. Area Representatives from affected Belizean communities are encouraged to engage Mexican counterparts on technologies such as Fargo Blocks, a sargassum-based building material that has shown promise in regions facing similar ecological challenges. Hosting workshops for Belizean entrepreneurs, educators, and builders on this technology could stimulate innovation, facilitate skills transfer, and create opportunities for sustainable business development grounded in regional cooperation. Across the wider Caribbean, emerging case studies offer valuable lessons for Belize. In Saint Vincent and the Grenadines, a regional pilot project has transformed sargassum into agricultural and economic resources, generating employment in harvesting, processing, and marketing while supporting sustainable livelihoods. In Barbados, entrepreneurs have developed sargassum-based products such as fertilizers and bio stimulants that enhance plant growth, alongside biofuel initiatives that convert sargassum into biogas for energy generation. These examples demonstrate that sargassum, often regarded as nuisance biomass, can be leveraged as a blue economy opportunity that supports income generation, skills development, and community resilience. Strategic partnerships with these regional initiatives, NGOs, and private enterprises could further enhance Belize's capacity to develop sustainable sargassum-based industries while strengthening cross-border knowledge exchange.

These recommendations align with Belize's broader climate policy context. The International Monetary Fund notes that "Belize has made important strides in confronting climate change, despite its difficult fiscal constraints," while emphasizing that continued progress will require significant private investment in renewables, sustained concessional external financing, contingent financing arrangements, and targeted capacity-building to address legal, regulatory, and administrative gaps (IMF, *Belize: Climate Change Policy Assessment*, Country Report No. 18/329, 2018). Developing a sargassum industry presents an opportunity to transform a climate-driven environmental challenge into sustainable economic activity and global cooperation in addressing ocean pollution. This potential is reinforced by market trends reported by Trellis, which

estimate the global commercial seaweed market at US$16.7 billion in 2020, with projected growth to US$30.2 billion by 2025, driven largely by food, cosmetics, and agricultural applications. Notably, several organizations are already attempting to repurpose harmful sargassum blooms in the Caribbean by converting collected seaweed into products such as fertilizers (Clouse, 2021).

Financing and coordination of this emerging industry should be led by Belize's New Growth Industries Unit (NGIU), whose mandate includes providing objective, science-based evidence and designing, implementing, and overseeing industrial policies that support economic diversification and sustainable development. A NGIU-led approach would ensure that sargassum harvesting, processing, and commercialization are guided by sound science, appropriate regulation, and robust environmental safeguards. Supporting a sargassum industry through the NGIU aligns with its focus on high-potential sectors, emerging industries, and the promotion of a knowledge-based economy, while fostering international cooperation on sustainable ocean management and attracting both domestic and foreign investment in climate-resilient development.

Mexico provides an important example of how international partnerships can support large-scale sargassum solutions. The country has been at the forefront of responding to the growing sargassum crisis affecting the Caribbean, where massive blooms threaten coastal ecosystems, tourism, and local economies. Through partnerships with Dutch companies and international stakeholders, Mexico (particularly the state of Quintana Roo) has advanced initiatives to convert sargassum combined with wastewater sludge into biogas, supported by monitoring technologies and circular economy frameworks. The Dutch Embassy in Mexico has played a facilitative role by convening missions and networks of companies, researchers, and governments to strengthen collaboration on offshore collection, valorization, and sustainable processing. Complementing these efforts, the European Union is supporting the development of sustainable sargassum value chains under its Global Gateway Strategy and organizing forums such as *"Beyond the Tide: Practical Approaches to Sargassum Response"* to encourage strategic dialogue and regional cooperation.

While these initiatives demonstrate promise at the national and international levels, many smaller Caribbean states lack the financial and technical capacity to independently

implement high-capital solutions. To address this gap, CARICOM should leverage existing international partnerships by decentralizing forums like *"Beyond the Tide"* and hosting them within the Caribbean region to promote grassroots engagement, localized learning, and context-specific innovation. A CARICOM Heads of Government meeting focused specifically on sargassum response could facilitate the joint design and financing of regional processing centers, enabling shared infrastructure, pooled resources, coordinated offshore harvesting technologies, and the development of a circular bioeconomy across member states. Such an approach would ensure that sustainable sargassum management is more inclusive and aligned with the realities and capacities of Caribbean nations.

Finally, strengthened local governance is essential to ensure effective community-level responses. Local government offices in San Pedro and Dangriga should receive enhanced support through increased staffing, technical training, and improved communication tools. Strengthening these institutions would enable more timely, informed, and coordinated responses to environmental threats, ensure that community concerns are addressed efficiently, and help young people feel supported and protected during periods of environmental disruption.

Sustainability and Next Steps:

To maintain long-term impact, this initiative recommends establishing permanent Eco-Wellness Clubs in schools to promote ongoing environmental learning and emotional resilience. Regular follow-up sessions during peak sargassum seasons will reinforce coping strategies and provide updated scientific insights. Continued training for youth mentors in Mental Health First Aid will ensure ongoing emotional support for students. Incoming CARICOM Youth Ambassadors can use this pilot project as an initial starting point to expand and formalize activities, including the creation of a **Youth Resilience and Sargassum Awareness Guide** in both print and digital formats. This handbook could provide coping strategies, environmental knowledge, and examples of local and regional innovations, serving as a tool for replication and scaling. Regional networking opportunities will also give Belizean youth platforms to collaborate with peers across the Caribbean, fostering innovation in sustainable uses of sargassum and extending the program's influence beyond national borders. Additionally, the digitalization of surveys

can be implemented in future iterations, reducing the manual time spent on summarizing findings. Platforms like SurveyMonkey, combined with AI-assisted analysis, can streamline data collection and interpretation, allowing for more efficient feedback and evidence-based planning.

Belize has taken steps to manage the sargassum influx, including tax relief for coastal hotels, duty exemptions for cleaning equipment, $1.5 million in municipal support for beach clean-ups, and the formation of a Sargassum Task Force (STF) that coordinates government, private sector, NGOs, and local communities. The STF also runs awareness campaigns and a local forecasting system to track sargassum movements.

With these measures in place, Belize is positioned to move from reactive management to developing a sargassum-based industry. Financing, coordination, and policy guidance for this sector should be led by the New Growth Industries Unit (NGIU), using science-based evidence and industrial policy expertise. The next phase would focus on research and development, cross-sector partnerships, and innovation, transforming sargassum from a seasonal environmental issue into an economic opportunity that is sustainable, scalable, and Belizean. Immediate action is required to protect coasts, communities, and the economy.

Workshop Activity

Solution Sprint: Each group picks ONE challenge (example: sargassum buildup, heat stress, food security, beach loss, etc.) and designs:

1. One short-term solution youth can help with

2. One long-term change needed

3. One mental health support strategy (community or school based)

CONFIDENTIALITY AND CONSENT FORM

Youth Well-Being & Sargassum Awareness Survey

Location: ☐ San Pedro ☐ Dangriga Town School: _____

Age: _____ Gender: ☐ Male ☐ Female ☐ Prefer not to say

Ethnicity: ☐ Mestizo ☐ Garifuna ☐ Creole ☐ East Indian ☐ Maya ☐ Other _____

Purpose of the Study

You are invited to participate in a survey designed to understand how the influx of sargassum affects the emotional well-being, daily routines, learning environment, and environmental awareness of high school students in coastal communities. Your responses will help identify meaningful ways to improve youth mental-health support, create educational resources, and strengthen community resilience. The findings from this survey may be presented to CARICOM and shared with your school to support planning and youth-centered initiatives.

What Participation Involves

If you agree to participate, you will complete a questionnaire that includes three sections:

- Section A: Emotional and Social Well-Being
- Section B: Knowledge and Awareness of Sargassum
- Section C: Educational and Community Impacts

The survey contains questions about how sargassum affects your feelings, knowledge of environmental issues, school experiences, and thoughts on community solutions. It will take about 10–12 minutes to complete. You may skip any question you do not wish to answer.

Voluntary Participation

Participation is entirely voluntary. You may choose not to participate or may withdraw at any time without penalty. Your decision will not affect your grades, school standing, or relationship with teachers or school administration.

Confidentiality

All answers will be kept confidential. Your name is not required, and no personal information will be linked to your responses in any report or presentation. The results will only be presented in summary form so that no individual student can be identified. Data will be stored securely and accessed only by the research team.

Use of Information

Survey findings may be shared with CARICOM as part of a regional effort to better understand the effects of sargassum on youth in coastal areas. Summaries may also be shared with school administrators to guide mental-health workshops, awareness campaigns, and support programs for students affected by environmental changes.

Risks and Benefits

There are no expected risks to participating. Although you may not receive a direct personal benefit, your feedback will help shape youth-focused mental-health supports and community strategies for coping with sargassum.

Consent Statement

By signing below, you acknowledge that you understand the purpose of this survey and voluntarily agree to participate.

Student Signature: _____ Date: _____

SURVEY INSTRUMENT:

Youth Well-Being & Sargassum Awareness Survey

Section A – Emotional and Social Well-Being

1. On a scale of 1–5, how much has the presence of sargassum affected your mood or stress levels?
   (1 = Not at all, 5 = Extremely)
   ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
2. When you see or smell sargassum near your community, how do you usually feel? ☐ Calm ☐ Worried ☐ Frustrated ☐ Helpless ☐ Curious ☐Other: _____
3. How often do you talk with friends, teachers, or family about how the sargassum situation makes you feel? ☐ Often ☐ Sometimes ☐ Rarely ☐ Never
4. How comfortable are you discussing feelings of stress, sadness, or anxiety with someone? ☐ Very comfortable ☐ Somewhat comfortable ☐ Not comfortable
5. Have you noticed any changes in your daily routine or activities because of sargassum? ☐ Yes ☐ No
   If yes, explain:
   _____
   _____
   _____
   _____
6. What coping strategies do you use when stressed about environmental issues like sargassum? ☐ Talking to someone ☐ Listening to music ☐ Exercise ☐ Journaling ☐ I don't have one ☐ Other: _____
7. What support would help you or others manage stress caused by sargassum? *(Select up to 3)*
   ☐ Counseling or mental-health workshops
   ☐ Peer support groups

☐ Awareness campaigns in schools

☐ Recreational activities / stress-relief programs

☐ Environmental cleanup initiatives

☐ Other: _____

Section B – Knowledge and Awareness of Sargassum

8. How much do you know about sargassum and where it comes from?

   ☐ A lot ☐ Some ☐ A little ☐ Nothing at all

9. What do you think are the main causes of sargassum buildup in coastal areas like San Pedro and Dangriga?

   _____

   _____

   _____

   _____

10. How often do you notice sargassum in your area?

    ☐ Every day ☐ A few times per week ☐ Occasionally ☐ Rarely

11. How would you describe the smell and sight of sargassum in your area?

    ☐ Not disturbing ☐ Mildly disturbing ☐ Very unpleasant

    ☐ Overwhelming and hard to tolerate

12. How close is your school/home to areas affected by sargassum?

    ☐ Very close (walking distance) ☐ Nearby (within the community) ☐ Far (outside main affected area)

13. Have you ever learned about uses or solutions for sargassum?

    ☐ Yes ☐ No

    If yes, describe one:

    _____

    _____

    _____

    _____

14. Who should be most responsible for managing the sargassum problem?

    ☐ Government ☐ Local community ☐ Businesses ☐ Schools ☐ Everyone together

15. What are two things you would like to learn or do to help your community manage sargassum and protect mental health?

    _____

    _____

    _____

    _____

Section C – Educational and Community Impacts

16. During heavy sargassum buildup, has your school experienced disruptions (e.g., strong odors, class relocation, attendance issues)? ☐ Yes ☐ No
17. Do you believe sargassum affects your learning environment or motivation to attend school? ☐ Yes, greatly ☐ Somewhat ☐ Not really ☐ Not at all
18. In your opinion, has your community taken action to support youth affected by sargassum? ☐ Yes, many actions ☐ Some efforts ☐ Few or no efforts

FOCUS GROUP GUIDE: STUDENT PERCEPTIONS OF SARGASSUM

Group Size: ● 3–6 students per group

Participant Selection:

- Students selected through **voluntary sign-up** and/or **teacher recommendation**
- Aim for diversity in **gender**, **grade level**, and **academic performance**

I. INTRODUCTION (5 minutes)

Facilitator Script:

"Thank you for being here today. We want to learn what students like you already know, think, and experience about sargassum. There are no right or wrong answers. Your honest thoughts will help us improve learning materials and support our community. Everything you share will be kept confidential."

Ground Rules

1. Speak one at a time
2. Everyone's opinion matters
3. You can disagree respectfully
4. You may skip any question

II. WARM-UP (3 minutes)

Warm-up Prompt:

"Share your name, grade, and your favorite thing to do when you're by the sea."

III. MAIN DISCUSSION QUESTIONS (25–35 minutes)

Below are the core questions with suggested **probes** to deepen responses.

1. What have you heard or learned about sargassum?

(Explores baseline awareness and existing knowledge.)

Probes:

● Where did you hear this information (school, social media, family, news)?

● What parts do you feel confident about?

● Has anything you heard been surprising or confusing?

2. Where do you think the sargassum that reaches our shores comes from?

(Assesses understanding of origins, ocean currents, and contributing factors.)

Probes:

● Have you heard about the Sargasso Sea?

● Do you think weather or climate affects it?

● How do you think it travels long distances?

3. How does sargassum affect the beaches, marine life, or the environment in your community?

(Explores perceived environmental impacts.)

Probes:

● What have you seen with your own eyes?

● Do you think it affects animals or water quality?

● Are the beaches different at certain times of the year?

4. Have you or your family ever been personally affected by sargassum?

(Gather personal exposure and lived experiences.)

Probes:

● Beach access? Smell?

● Tourism-related jobs? Fishing or boating?

● Have you changed plans because of sargassum?

5. In what ways do you think sargassum affects local businesses or the economy?

(Understanding of tourism and economic impacts.)

Probes:

● Hotels? Restaurants? Tour guides?

● Do tourists react to it?

● Does cleaning it cost anything?

6. What are some things you find confusing or unclear about sargassum?

(Identifies misconceptions and knowledge gaps.)

Probes:

● Scientific questions?

● Health or safety concerns?

● Why do some years have more than others?

7. Do you think schools and communities provide enough information about sargassum? Why or why not?

(Assesses education effectiveness.)

Probes:

● Have you learned about it in science class?

● Would you like more updates during heavy sargassum months?

● What format works best (videos, posters, lessons, social media)?

8. Have you heard about any ways sargassum can be used—like compost, building materials, or fuel? What do you think of these ideas?

(Awareness of potential beneficial uses.)

Probes:

● Do these solutions sound realistic?

● Which uses seem most helpful for your community?

● Any concerns about safety or smell?

9. If you could design a project or solution to help your community deal with sargassum, what would it be?

(Encourages creative, solution-oriented thinking.)

Probes:

● Would your idea involve technology?

● Could students help with this project?

● Who would benefit the most?

10. What questions do you still have about sargassum that you think should be answered through this program?

(Captures student curiosity and informs future educational content.)

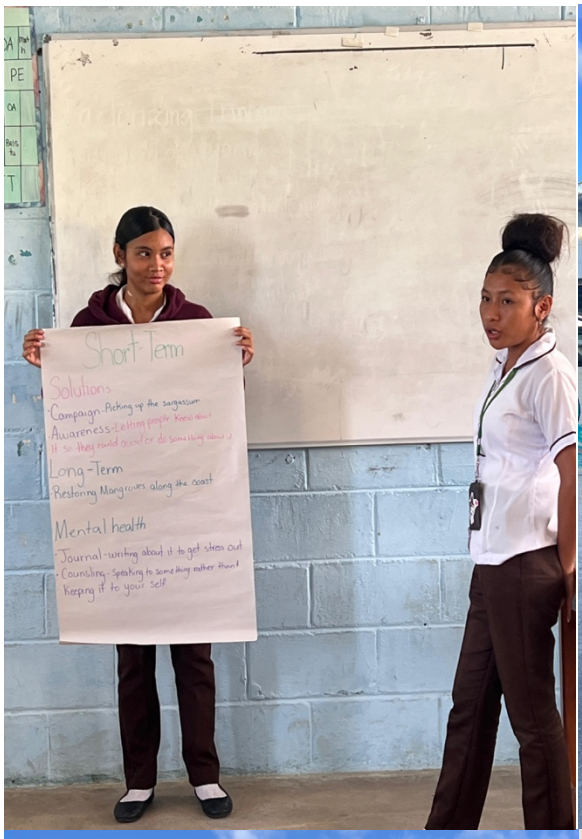
Probes:

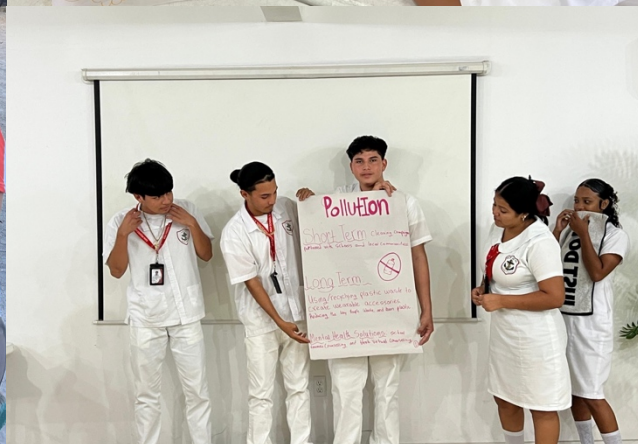
- Scientific questions? Environmental questions?
- Questions about what the government or community should do?
- Anything you wish adults explained better?

IV. CLOSING (2 minutes)

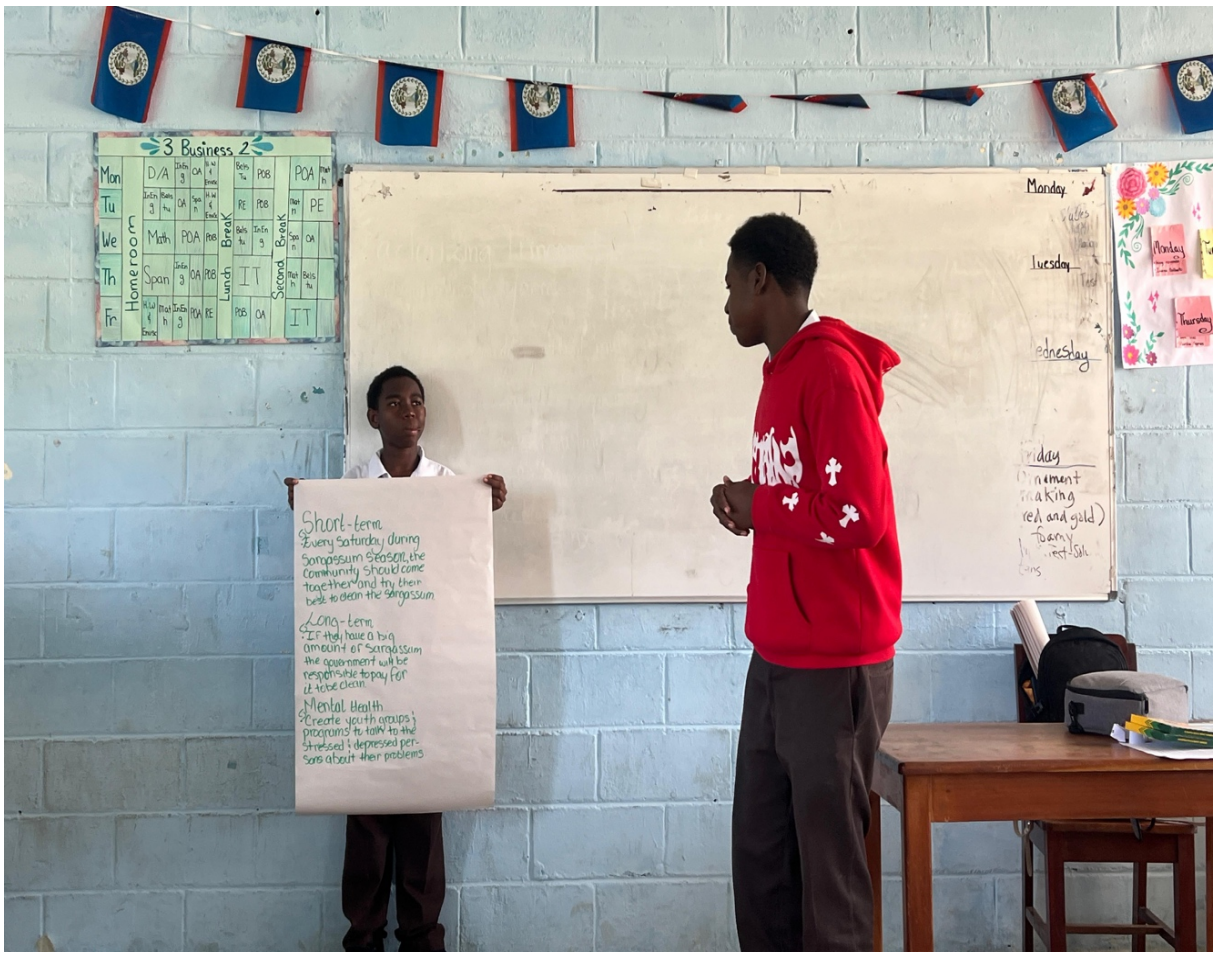
Facilitator Script:

"Thank you for sharing your ideas today. Your input will help shape educational materials and community efforts around sargassum. Before we end, is there anything else you would like to add that we didn't ask about?"


Short Term
Solutions
Campaign- Picking up the sargassum
Awareness- Letting people know about it so they could assist or do something about it
Long-Term
Restoring Mangroves along the coast
Mental health
Journal- writing about it to get stress out
Counsling- Speaking to something rather than keeping it to your self


Pollution
Short term
Long term


WHAT IS SARGASSUM?
DUTIES CHART


3 Business 2
Homeroom
Break
Lunch
Second Break
Short-term
Every Saturday during Sargassum Season, the community should come together and try their best to clean the Sargassum
Long-term
If they have a big amount of Sargassum the government will be responsible to pay for it to be clean
Mental Health
Create youth groups / programs to talk to the stressed / depressed persons about their problems
Monday
Tuesday


SCEC

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