Caribbean Regional Action Plan to Prevent Abandoned, Lost or Otherwise Discarded Fishing Gear

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Section One: Background and Rationale

Overview of Caribbean Fisheries

Fisheries in the Caribbean represent a way of life for tens of thousands of people, most of whom are involved in small-scale fisheries with millions in the region being supported by the wider fisheries industry. In the Western Central Atlantic, which includes the Caribbean, an estimated 64% of assessed commercially harvested fish stocks were found to be fished within biologically sustainability levels in 2017. Sustainability levels of the most important commercially landed species in the Caribbean are mostly stable, including three of the Caribbean's most harvested species in terms of landings[1]: Round Sardinella, Caribbean spiny lobster, and queen conch, though the latter two are categorized by FAO as being fished at maximum sustainability levels, and the FAO makes the distinction that Round Sardinella is overfished in the Eastern Caribbean, while being likely biologically sustainable in the Western Caribbean.[2] Additionally, Caribbean fisheries are under threat from several other climate change related factors, including changes to ocean currents, temperatures, salinity and pH, which is causing fish populations to change distribution and migration patterns and impacting critical habitats such as coral reefs. This is leading to further declines in fish populations and overall yield[3]. Alongside these critical challenges, most species in the region are being fished at or near maximum sustainable yields.

Across the region, fisheries, predominantly artisanal, are important exports and a primary contributor to income, employment, food security as well as social and economic stability, especially in coastal communities[4]. The significance of fisheries at a national and local level also varies. For example, Belize fisheries account for 3.5 % of their gross domestic product (GDP) with an estimated, 15,000 people directly dependent upon Belize's fisheries[5]. For Antigua and Barbuda, a twin island state, the primary importance of their fisheries is food security having one of the highest per capita consumption figures of fish in the world (per capita consumption of fish in 2013 was estimated at 55.1 kg which was one of the highest consumption levels in the world), indicating the importance of the sector for food security[6]. The fisheries sector is also an important security net for the population of Antigua and Barbuda, as is the case for many other Caribbean nations, especially in moments when other means of income vanish as seen in late 2017 when tourists were deserting the country due to the fear of hurricanes.

ALDFG in the Caribbean Region

Abandoned, lost or discarded fishing gear (ALDFG), also known as ghost gear, refers to any gear used for fish harvesting that is no longer under the control of the harvester, regardless of the circumstance leading to such loss. Gear may be lost due to a number of factors, one of which is lack of access to and/or high costs of shoreside collection facilities[7]. Other factors causing gear loss include inclement weather, sediment shifts due to underwater currents, interactions with untargeted and entangled fish/marine mammals, snagging on unknown or unrecorded coastal and bathymetric features, conflict/entanglement with other gear and intentional discard, often related to illegal, unregulated and unreported (IUU) fishing. Whilst weather, operational factors and gear conflicts are arguably the most significant factors causing gear to become lost, the reasons for its accumulation are not yet well understood on a global level, and will vary widely depending on region, gear type, fishery size (commercial/artisanal), species being harvested, and other local factors[7].

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[1] S.G. Smikle, V. Christensen et K.A. Aiken, « A Review of Caribbean Ecosystems and Fishery Resources Using ECOPATH Models », Études caribéennes [En ligne], 15 | Avril 2010, mis en ligne le 15 avril 2010, consulté le 05 août 2021. URL : http://journals.openedition.org/etudescaribeennes/4529 ; DOI : https://doi.org/10.4000/etudescaribeennes.4529

[2] FAO. 2020. The State of World Fisheries and Aquaculture 2020. Sustainability in action. Rome.
https://doi.org/10.4060/ca9229en

[3] CMEP (2021) Climate Change Adaptation for Caribbean Fisheries. (Eds. Bryony Townhill, Paul Buckley, Peter A. Murray, Keith Nichols, Iris Monnereau). Commonwealth Marine Economies Programme, 12pp.

[4] CRFM. 2020. CRFM Statistics and Information Report - 2018. Belize City84 pp. (also available at www.twitter.com/CaribFisheries).

[5] Martinez, V.I., Castañeda, A., Gongora, M., Wade, B. & Requena, N. 2018. Managed Access: A Rights-Based Approach to Managing Small Scale Fisheries in Belize. 24 pp. (also available at http://www.fao.org/3/CA2430EN/ca2430en.pdf)

[6] FAO. 2021a. *Fishery and Aquaculture Country Profiles - Antigua and Barbuda* [online]. [Cited 23 November 2021]. https://www.fao.org/fishery/facp/ATG/en

[7] Macfadyen, G.., Huntington, T.. & Cappell, R. 2009. Abandoned, lost or otherwise discarded fishing gear

The issue of ghost gear and its impacts on local commercially harvestable fish populations and the marine ecosystem in general can have considerable impact as well. Initial conversations with fishers in the region via two virtual workshops carried out by the Global Ghost Gear Initiative (GGGI) in July 2021 and a follow up virtual workshop in the margins of the Gulf and Caribbean Fisheries Institute (GCFI) conference in November 2021 indicate that the increased frequency and intensity of major storm systems passing through the region, undoubtedly an effect of climate change, is a major cause of gear loss in the region. It is therefore essential for coordinated action to prevent, mitigate and remediate the ghost gear issue in the Caribbean region to ensure the future sustainability of harvestable fish populations and the livelihoods of those who depend upon them, as well as the overall health of the ecosystem.

As is the case for estimating the global input of ALDFG into the ocean, the same is true for the Caribbean as very little information exists regarding the type, amount or sources of ALDFG in the wider Caribbean region[8]. Of the fishing gears known to be used in the Caribbean, gillnets, traps/pots and fish aggregation devices (FADs) are identified as the most harmful types of ALDFG due to their relatively high risk of loss and the negative impacts to both target and non-target species as well as benthic habitats once lost[9].

The detrimental impacts of ghost gear go beyond environmental impacts. ALDFG also has significant economic, social and food security ramifications which are of particular concern for a region like the Caribbean whose many coastal communities are reliant on productive and sustainable fisheries as a source of protein and also to support their livelihoods now and into the future. Surveys of fishers and other stakeholders have indicated that ALDFG is widespread in the Caribbean region, with traps and nets making up the bulk of the problem[8]. However, far more research needs to be done to accurately estimate the amount of gear lost in the region on an annual basis.

In March 2021, the GGGI worked with the Belize Fisheries Department to conduct surveys of fishers in Belize to gather information on fishing activities including causes and extent of gear loss as well as available reception facilities for end-of-life gear. Surveys were conducted by contractors under the supervision of the Belize Fisheries Department and were focused on the commercial Spiny lobster trap fishery. Forty-five fishers were surveyed in the region and reported an average of 21 traps/year lost. The median reported annual trap loss per fisher was 4 representing a 4%-8% annual loss rate based on the information collected from the fishers. Unfortunately, similar data on gear loss rates are not available for all Caribbean countries and as such, we recommend conducting dedicated surveys with fishers across the Caribbean in order to gain a better understanding and quantification of gear loss rates to inform the implementation of appropriate disposal opportunities.

Rationale for a Caribbean Regional Action Plan to Prevent ALDFG

Managing ALDFG is essential to ensuring the future sustainability of fisheries across the Caribbean region and safeguarding people's livelihoods and food security. The Caribbean Regional Action Plan to Prevent ALDFG (Caribbean RAP hereafter) provides strategic guidance for a coordinated approach to managing ALDFG across the region through a variety of relevant best practices across prevention, mitigation and remediation strategies. However, as the Caribbean is geopolitically highly complex encompassing 35 countries including 27 island states, some of which are politically independent states whilst others are overseas territories of France, the Netherlands, United Kingdom and United States of America – creating an action plan that addresses the local particularities of each individual State, which have come to light through our engagement in the Caribbean over the last few years, is not feasible. Accordingly, the GGGI is taking the approach that this regional action plan will set out the main considerations around the gear types used in the Caribbean region, using the GGGI's Best Practice Framework for the Management of Fishing Gear (C-BPF) as a guide. A series of recommendations are suggested that can then be adapted accordingly at the local or country level based on the local circumstances, and the recommendations in this first iteration of the regional action plan should be considered as such. The Caribbean Regional Fisheries Mechanism (CRFM) has indicated that there may be opportunity to develop this further beyond

[8] Matthews, T.R. & Glazer, R.A. 2009. Assessing Opinions on Abandoned, Lost, or Discarded Fishing Gear in the Caribbean. (also available at www.gcfi.org)
[9] GGGI. 2021. Best Practice Framework for the Management of Fishing Gear. (also available at http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=19422&section=text)

the scope of the grant, and potentially introduce the more general recommendations herein to a more binding version or versions directed at individual member states, perhaps delivered in partnership with the Caribbean Community (CARICOM) – a grouping of twenty Caribbean countries (fifteen Member States and five Associate Members).

The Caribbean RAP incorporates relevant guidelines and best practices defined in the GGGI's C-BPF and the United Nations Food and Agriculture Organisation (FAO)'s Voluntary Guidelines on the Marking of Fishing Gear (VGMFG). The VGMFG are organized by gear type and are specifically targeted to two key stakeholder groups: i) fisheries managers and regulators, and ii) fishers and vessel operators. The VGMFG are designed to improve fisheries management and can be used as a tool in the identification of IUU fishing activities. The VGMFG addresses the purpose and principles, the scope of application and the implementation of a gear marking system and its associated components, including reporting, recovery, and disposal of ALDFG or end-of-life fishing gear and commercial traceability of fishing gear. The marking of fishing gear encompasses two main aspects: (i) surface markers or other devices that indicate the position, nature and extent of the fishing gear; and, (ii) identifiers that allow the relevant authority to identify the party ultimately responsible for the deployment of the fishing gear. The Caribbean RAP aims to provide a series of relevant recommendations for the Caribbean region offering a coordinated approach to preventing ALDFG in the region, safeguarding the future of the regions' fisheries and the communities that depend upon them.

The C-BPF is the only comprehensive guide focused on providing best practices for gear loss prevention, mitigation and remediation of ALDFG to stakeholders across the seafood supply chain including fishers and fishing companies, academia and research organizations, gear manufacturers, as well as fisheries managers and more. The C-BPF provides practical, comprehensive guidance for minimizing gear loss and its impacts across the entire seafood supply chain. The C-BPF was created with input and consultation from all actors in the seafood industry to ensure the recommendations are practical, applicable, and feasible. It recognizes the diverse roles and responsibilities of different stakeholders - such as gear manufacturers, fishers, port authorities, fisheries management authorities, seafood companies, retailers and other interested parties - in managing fishing gear, and provides examples of best practices relevant to each stakeholder group. It is designed to be globally applicable in broad strokes, with recognition that not all recommendations will be suitable in all contexts due to wide variations in fishing gear use and harvesting methods, species caught, local regulations/enforcement, small versus large scale fisheries, etc. As such, it is crucial to adapt the necessary sections of the C-BPF to further develop regional and local action plans to address ALDFG based on local conditions on the ground.

In 2019, the GGGI and UN FAO co-hosted 4 regional workshops on ALDFG which focused on adapting and applying the principles in both the GGGI C-BPF and the UN FAO VGMFG. The workshops were held in Vanuatu, Indonesia, Senegal, and Panama to address specific conditions in their respective surrounding regions and come up with recommendations to inform the creation of regional and national action plans on ghost gear. A similar model has been used in the Caribbean, with virtual workshops being hosted by the GGGI for fishers and fisheries managers in Jamaica and Belize in July 2021 and again for all Caribbean stakeholders in November 2021 in the margins of GCFI 74. One of the overall goals of these workshops was to learn from the fishers and fisheries managers what the key challenges were with regard to ghost gear in their respective regions, and to identify the most effective ways to prevent, mitigate and remediate the issue in a local context.

Although the reports for the three virtual workshops provided valuable insights into the complexities and peculiarities of Caribbean fisheries, it became immediately apparent from the discussions that arose during these workshops that the specific circumstances, challenges and opportunities surrounding ghost gear were in some ways very different, despite fishers in many cases harvesting the same species with similar methods/gear types.

For example, in Jamaica, trap fishers who attended the workshop identified severe weather as a major driver of gear loss in their fishery, but said retrieving traps prior to a severe storm/hurricane was not typically possible as many traps are deployed 40 miles or so offshore, which is quite a long trip for their small craft. On a typical trip, they might spend as many as 3 days at sea and the local storm warnings are typically given 48-72 hours out, so there's a high likelihood the fishers would be out on their vessels out of cellular/internet range when the storm warnings come in,

making gear retrieval impractical and potentially unsafe. Fishers indicated they could lose as many as 60 pots at a time in a severe weather event, which carries an economic cost to them of roughly JMD $1.2M (approx. USD $7,716) when taking into account the cost to buy new materials and the time and labor required to build new traps. Jamaican Antillean Z-traps are typically not an “off-the-shelf” product, but one constructed individually by fishers out of separate purchased components.

Conversely, in Belize, the water around the atolls where most fishing occurs is typically near shore and quite shallow (10-12m), and fishers tend not to leave the vicinity of their traps once they deploy them, so retrieving traps ahead of storms is common practice. However, though fishers can readily retrieve traps and bring them ashore ahead of major storms, there are typically no covered/storage facilities in which to keep the traps until the storm passes, so many are left on the beach but can be washed away by intense wave and wind action as storms pass through the Cayes. While gear does get lost from time to time, it is also generally easier to retrieve by fishers, given the relatively shallow depth at which they are deployed, unless wind and wave activity has outright destroyed the traps.

Interestingly, vandalism and theft were identified by fishers from both countries as being a primary concern for gear loss, though the reasons for and methods of such theft/vandalism varied significantly. In Jamaica, they use surface buoys to mark their traps, as is common practice in most trap fisheries around the world. The surface buoys make traps easy to detect and theft between fishers is relatively common. In Belize, however, they don’t use surface buoys at all, as the water they fish in is so shallow and they remain in the general area while the traps are deployed. However, there is significant conflict between trap fishers and dive fishers who collect spiny lobster and conch by hand. It is common for dive fishers to disable or destroy traps when they find them to increase their own catch. As the drivers and conditions surrounding the challenges around theft/vandalism are so different, distinct approaches will need to be taken to minimize this to the extent possible within the local context.

Given lessons learned from the regional and national workshops from 2019 and 2021, it is clear that in order for any regional ghost gear plan to be successful, as many local stakeholders as possible need to be consulted and involved in the development of such a plan. We anticipate the regional/national variations between Caribbean nations will have similar considerations, so the first draft of this action plan has been sent to colleagues from various Caribbean countries via the Caribbean Regional Fisheries Mechanism (CRFM) for feedback to be incorporated into the final version to ensure it is fit for purpose. We recognize that no action plan is likely to encompass every specific local peculiarity, but this process is essential to ensure that feedback and engagement is secured from as many stakeholders as possible to make the plan as practically applicable as possible.

Section Two: Gear Class Risk Assessment and Recommendations

Gear Class Risk Assessment

To develop best practices, it’s important to understand which types of gear are most likely to become ALDFG, and what their potential impacts are in the environment once they are ALDFG. In developing the C-BPF, the GGGI evaluated all the main gear types and assigned relative risk scores based on the best information currently available. The two attributes are:

1. Likelihood of loss: Considers the likelihood of each gear type being abandoned, lost or discarded during normal fishing operations.

2. Impact once lost: Considers the impact of each gear class on aquatic life and the environment more generally. This includes likelihood of ghost fishing, the risk of entanglement with aquatic mammals, reptiles and birds as well as possible habitat damage. It also considers where the disintegration and abrasion of plastic elements of the gear might lead to microplastic production.

The risk element is scored out of 5, and both likelihood and impact are color-coded as shown below. The ranking applied to each gear class indicates a sense of the relative risk (likelihood and impact) from these different gear classes.

Gear is categorized by class – gillnets; fish aggregating devices (FADs); traps and pots; longlines; bottom trawls; hooks and lines; mid-water trawls; and seine nets. Examples of gear types that fall under each gear class are included in the table below:

Gear class	Examples of gear types
Gillnets	Includes fixed, drifting and other tangling nets, including trammel nets
Fish aggregating devices	Anchored and drifting FADs
Traps and pots	All traps, pots and other static fish traps
Longlines	Includes drifting, bottom and pelagic set longlines
Bottom trawls	Single, pair, twin and beam trawls for finfish and shrimp; also includes Danish, Scottish and other fly seines
Hooks and lines	Includes hand lines, pole and line, trolling and jigging (both mechanized and by hand)
Mid-water trawls	Single or pair mid-water trawls, mainly targeting small pelagic species
Seine nets	Includes purse seines, ring nets and beach seines

Of the fishing gears used across the Caribbean region, gillnets, FADs, and traps and pots are the most harmful types of ALDFG due their combined likelihood of becoming lost and their potential impact should they become lost. It should be noted that the dominant gear types used across the Caribbean region are not homogenous and vary significantly even within each country. For example, according to the Belize Fisheries Department, the predominant gear type used in Belize is pots, specifically lobster pots, though the use of some gear types in Belize is currently unknown, even by the fisheries department. The dominant gear types used also vary based on fishery across the region – in Grenada for example, longlines represent the dominant gear type used in pelagic fisheries, though in demersal fisheries, traps and pots, gillnets, bottom longlines and handlines are used[10]. Data collected by the Government of Saint Lucia highlight that trolling lines are the predominant gear type used accounting for just under 50% of annual quantity of gears used by fishers in 2017 and 2018, though other gears are also used[11].

Key Stakeholder Groups

Whilst all stakeholders across the seafood supply chain play a role in the management of ALDFG across the Caribbean, this Caribbean RAP specifically highlights best practices directed towards *fishers and vessel operators, fisher organizations (such as fisher cooperatives)* and *fisheries managers and regulators*. Whilst preventative measures are always preferred, it is noted that this is not always feasible and best practices for the management of ALDFG must consider preventative, mitigative and remedial strategies as required.

It should be noted, across the Caribbean region, Fisherfolk Co-operatives, associations and networks as well as NGOs focused on fisheries improvement and Sustainable EAF (ecosystem approach to fisheries) play a pivotal role and are essential stakeholders to engage to help implement the recommendations put forward in this action plan. This is especially true of any fisheries participating in fisheries improvement projects (FIPs) steering towards MSC certification. These groups have a leading role to play in preventing gear loss as the first line of defense as well as being a fixed intermediary between fishers and regulators. Primarily private sector organizations provide the resources needed by fishers to apply their trade and will be key in regulating gear types sold to fishers. This can be as simple as gear procurement in relation to type, size, environmental impact, life-span and overall biodegradability. These organizations have the tools, mechanisms, technical capacity and human resources to develop, influence, adopt, guide, share and teach the varying sustainable fisheries guidelines to their memberships which are primarily fishers.

The development and implementation of fisheries training schools and technical institutions to teach and promote responsible fisheries practices is also a key consideration. Having infrastructure and educational opportunities for fishers in place will help ensure a ground-up approach to sustainable fisheries resource management which would be different to and work in step with the current top-down approach. This can help instill sustainable thinking into the minds of younger individuals interested in fishing as a livelihood option, and mitigate gear loss at the potential source, incorporating fishing best practices, information and communications technologies (ICT), scientific methods, economic models and sustainability concepts.

Fishers and vessel operators are the key stakeholders in these guidelines. No fisher wants to lose expensive fishing gear, but sea conditions, equipment failure, the actions of others and safety considerations can all lead to the loss or abandonment of gear. As with many aspects of life, fishers need to take a risk-based approach to gear loss, by both reducing the likelihood of initial loss as well as reduce the impact of gear losses should they occur, through a mixture of best practices in locating, rigging and setting fishing gear, investment in gear marking and a responsible approach to fishing and overall marine stewardship. In addition to being proportional to the risks and consequences of gear loss, it is recognized that the actions and best practices demanded of fishers should be simple, pragmatic and affordable.

[10] Antonelis, K., Drinkwin, J., Shipley, M., (2021). Predictive model identifying locations of fishing gear loss or accumulation in Jamaica and Grenada. Prepared for the Global Ghost Gear Initiative/Ocean Conservancy.
[11] World Bank. 2019. COAST Insurance: An Assessment of Saint Lucia's Fisheries Sector. © World Bank.

Fisheries managers and regulators, and other statutory regulators have a distinct role to play in managing fishing practices across the Caribbean region as well leading coordinated efforts at national and local levels. This may be in terms of establishing minimum standards and requirements through legislative means, or in assisting fishers' organizations and other business groups in maintaining voluntary best practices. Other best practice areas can include the designation of spatio-temporal restrictions in high-risk areas; development of appropriate gear marking and identification regulations; development of technical regulations to reduce ghost fishing potential in high-risk areas; conducting impact assessments to gauge unintended consequences of management actions on gear loss and ghost fishing.
Fisheries organizations; While many actions can be effectively taken at the individual vessel level, fishing organizations that represent certain fisheries, fleets or geographic areas have the potential to both address common issues across their members, as well as leverage cooperation and assistance from other parts of the sector. In particular, fisheries organizations can work on behalf of their members to ensure that their knowledge and concerns are incorporated into both voluntary and mandatory management measures.
Improved Fisheries Management: There are elements of the wider fisheries management regime that might affect the risk of fishing gear being abandoned, lost or discarded and thus indirectly lead to ghost fishing. Some fisheries are managed on a limited effort basis, e.g., through restricting the timing and duration of the fishing season, the number of days at sea, or the number of licenses issued to fish a certain stock. However, these can have unintended consequences, such as encouraging a race to fish, which in turn may lead to spatial conflicts, shortcuts in gear rigging and deployment, and possibly higher rates of gear abandonment when time pressures are involved. The use of an alternate output control management system, e.g., the allocation of quotas that can be fished at leisure, may solve some of these issues but can also lead to other problems such as discarding (especially in mixed fisheries) and high grading (especially in small pelagic fisheries). In summary, fisheries policy, management and regulatory authorities should be encouraged to consider the implications of fisheries management strategies on fishing gear use and loss, possibly through inclusion in any ex-ante evaluation or impact assessment that might be undertaken.

Recommended Best Practices By Gear Class

The below tables identify the recommended best practices for the management of each gear class, categorizing measures that *fisheries managers and regulators*, *fishers and vessel operators*, and *fisheries organizations* can implement across the Caribbean region in order to:

- ***prevent*** (avoiding the occurrence of ALDFG in the environment);
- ***mitigate*** (reducing the impact of ALDFG in the environment); and
- ***remediate*** (removing ALDFG from the environment) ALDFG in the Caribbean.

Gear classes are ranked in terms of likelihood of loss (1-5) multiplied by impact if lost (1-5) to come up with a rudimentary risk assessment number relative to one another. Bear in mind that 1) these numbers are global guides and local circumstances may alter the numbers slightly; and 2) the numbers are not absolute and instead represent risks of each gear class *relative* to other gear classes.

1. Gillnets

Gear Class	Likelihood of Loss	Impact if Lost	Total Relative Risk
Gillnets	5	5	25
Susceptibility to loss: Gillnets can have high rates of loss, particularly in mixed fisheries areas where gear conflicts (especially with mobile gear) are more likely. In Northern Australia's EEZ, Indonesian and Australian fishers identified the snagging of nets (78%) and gear conflicts (19%) as the main causes of gear loss (Richardson et al, 2018). Many gillnets are set in areas with strong tidal or other currents and are thus susceptible to accidental loss. As gillnet panels are relatively cheap, there is less incentive to recover lost or abandoned gear, and their deliberate discarding at sea (either due to lack of storage space or heavy damage) is not infrequent.			
Impact of ALDFG: Abandoned, lost or discarded gillnets can continue to fish before the net breaks down and buoyancy is lost. As they are often made of light material, e.g., monofilament netting, they are not easily seen by fish and other aquatic animals and will often re-suspend in different current conditions. With a wide range of mesh sizes and structures, the risk of entanglement with aquatic animals and seabirds is high. Gillnets will eventually accrete to the substrate. While this may reduce entanglement and subsequent mortality of aquatic life, it does not eliminate species impacts. Nets on the seafloor can continue to ghost fish for the life of the material's structural viability; however, the species that are impacted may be different than those that were impacted when the net was buoyant and suspended in the water column (i.e., a shift from impacts on pelagic to benthic species).			

Theme (Prevention/Mitigation/Remediation)	General Approach and Principle	Best Practices	Other Stakeholders
Fisheries Managers and Regulators			
Prevention	Policy, management and regulatory authorities should consider the need, scope, implementation and coordination procedures for a fishing gear marking system in waters under their jurisdiction including coordination between national and regional bodies across the Caribbean.	Implementation and enforcement of a gear-marking system adhering to the FAO VGMFG whereby gillnets must be marked with port letters and numbers (PLN) of the fishers' vessel and/or labels and marker buoys on set gillnets, both surface and demersal.	
Prevention	Ensure appropriate inspection and enforcement of various regulations.	Consider inspection regimes for gear to ensure fishers are complying with regulations on mesh size, and gear length/depth requirements, etc. and that there is appropriate storage of gear on board vessels. This could perhaps be tied to licensing systems.	
Mitigation	Develop a gear loss reporting system where fishers must report gear lost during the season to local fisheries managers.	Develop regulations where fishers must report gear loss to fisheries managers as a condition of licensing. Develop a database to track this data over time to feed into possible fisheries management	• Fishers and vessel operators

		decisions and national removal plans. Generally, “no-fault” reporting systems tend to get the most buy-in, where fishers must report gear loss but are not penalized for losing gear for legitimate reasons (snags, weather, etc.). Some regulations do have penalties in place if fishers’ gear is found later but not reported lost, but this is contingent upon adequate mandatory gear marking, which does not occur in all areas of the Caribbean.	

Mitigation	Establishment of a coordinated no-fault reporting regime across the Caribbean region whereby fishers can report gear loss immediately within 24 hours of loss.	• Policy, management and regulatory authorities should ensure that there is a practical and robust lost and abandoned fishing gear reporting system in place that is consistent with the context of different fisheries under their jurisdiction.
		• Reporting protocols should be developed and implemented in cooperation with gear manufacturers, vessel operators, fishing companies and fishing organizations, as well as with other fisheries administrations.
		• A record/register of fishing gear reported as being found, lost, abandoned, or disposed of should be maintained by the relevant authority. This record/register should include details of:
		  ○ Type and characteristics of the fishing gear;
		  ○ Any mark(s) and other identifiers;
		  ○ Date, time, position of loss or retrieval, depth of water, etc.;
		  ○ Reason for loss (if known);
		  ○ Weather conditions;
		  ○ Any other relevant information including entrapment of endangered, threatened or protected species.
		• Registers of gear loss should be harmonized and connected where possible with other registers at regional, RFMO and other levels. Overtime, such registers could be merged where appropriate. Data collected should be shared with the GGGI global data portal where possible.
			• Fishers and vessel operators
			• Fisher organizations

Mitigation	Establish appropriate restrictions on gear use/design to minimize potential for gear to be lost.	• Introduce limits on gillnet depth (i.e. 60 meshes, 90 meshes, etc.) to reduce likelihood of snags on underwater obstructions. • Introduce limits on mesh sizes according to species targeted. • Limit the amount of gill nets that can be set by one fisher at any given time. • Introduce limits on soak times to minimize chances of loss due to snagging, inclement weather, etc. • Though the above measures are in place in some Caribbean countries, there may be an opportunity to harmonize these requirement sand make them universal across the region.	• Gear manufacturers • Fishers and vessel operators
Remediation	Development of clear guidelines for the safe retrieval of lost/damaged gillnets with coordinated support among local authorities and fishers/vessel operators.	• Local, national and regional authorities should encourage fishers and vessel operators to have adequate equipment on board to retrieve gear should it become lost as well as ensuring crew are trained in the safe operation of gear retrieval equipment (such as grapnels). Fisheries managers and regulators should assist in gear recovery wherever possible and practical to do so.	• Fishers and vessel operators • Fisher organizations
Fishers and Vessel Operators		•	
Prevention	Training and awareness-building of crew in good practice and responsible fishing.	• Only set the amount of gear that can be handled regularly and efficiently; • Mark gear properly and include the identity of the vessel and any other information required by local regulations; • Pay attention to weather patterns and do not set gear when poor weather is forecast; • Ensure gear is set to avoid conflict with other users and take appropriate precautions (such as bright surface buoys) if gear must be set in areas of high marine traffic; • Always attempt to retrieve lost gear if safe to do so and report loss where possible to the appropriate authority.	
Prevention	Adjust fishing methods to prevailing conditions to reduce the risk of gear loss.	Limiting the length of gillnet deployed and/or reduce soak time in order to increase control of fishing gear and reduce the risk of damage or loss.	

Prevention	Clear gear marking and identification of set gillnets (fixed and anchored).	Attach visible surface markers to the headrope to ensure set gear is visible to other ocean users in order to reduce the risk of interaction with other vessels.	
Prevention	Training and awareness-building of crew in good practice and responsible fishing.	• Repair or replace worn fishing gear or parts; • Training of crew on gear handling and operation; • Securely stow fishing gear on board to withstand bad weather / sea conditions; • Instruct crew members not to discard fishing gear overboard; • Make sure all equipment used with fishing gears is in good condition.	• Fisher organizations
Remediation	Retrieval of lost gear.	• Ensure vessels are equipped with the necessary tools (such as grapnels and rope) to safely retrieve gear. Additionally, ensure there is adequate stowage space to store damaged/retrieved gear to bring back to shore for disposal. • Implement a retrieval program at the end of the fishing season in collaboration with local fisheries management authorities to do targeted removals of any gear lost over the season, paying particular attention to critically sensitive habitat.	• Fisher organizations • Fisheries managers and regulators
Fisher Organizations			
Prevention	Development of codes of practice/good conduct on behalf of their members to facilitate and encourage responsible fishing.	• Identification of common issues and management needs across the membership (and with other similar organizations where appropriate) and decide whether a Code of Practice might provide a set of standards and best practices to address these. • Participatory development of a Code of Practice, identifying minimum, good and best practice levels. • Agree how these might be implemented, e.g., voluntary, self-certification by the fisheries organization, or third party certified.	• Fishers and vessel operators
Prevention	Development of means and mechanisms to comply with MARPOL Annex V.	Fisher organizations should encourage their members to comply with MARPOL Annex V regulations on waste management at sea. If necessary (and as recognized by Art 6.4.1 in Annex V), assistance might be sought from government in “developing resolutions, bylaws and other internal mechanisms” (IMO, 2012).	• Fishers and vessel operators • Fisheries managers and regulators

Prevention	Work on behalf of their members to liaise with the fishing and other competent authorities in establishing marine spatial planning tools to minimize gear conflict.	• Work with members to review the advantages, disadvantages and mitigatory options of marine spatial planning approaches (e.g., gear zoning) to the membership. • Work with the statutory authorities involved in marine spatial planning to develop optimal working solutions that minimize potential gear conflict.	• Fishers and vessel operators • Fisheries managers and regulators
Prevention	Where fishing organizations procure goods or services on behalf of their members, they should require their suppliers to conform with Best Practice where applicable.	Fisher organizations involved in procurement on behalf of their members consider developing a responsible procurement strategy that requires suppliers to conform to certain standards in terms of design, quality and traceability. This strategy could be aimed at fulfilling this gear management best practice framework, but could also be expanded to include other considerations, such as social and ethical procurement.	• Fishers and vessel operators • Gear manufacturers • Certification bodies
Prevention	Liaise with third party seafood certification bodies to address management and information requirements for reducing ghost fishing and the impacts of ALDFG on aquatic fauna, flora and habitats.	• Related to the other preventative measures mentioned above, fisher organizations might work with Fisheries Improvement Project (FIPs) and third-party certification bodies to ensure their members adhere to benchmarks and standards to which they are party. • A key focus will be the operational management and information requirements for best practice in ecosystem management, e.g., bycatch, endangered, threatened and protected (ETP) interactions and habitat impacts.	• Fishers and vessel operators • Certification bodies
Mitigation	Development of lost and abandoned fishing gear reporting protocols, procedures and avenues on behalf of their members.	Through liaison with the relevant fisheries management and control authorities, development of protocols and procedures for the reporting of the loss or abandonment of fishing gear. The nature and scope of this reporting system would reflect both the scale of fishing involved, as well as the specific circumstances of the member vessel operations, e.g., the gear used, etc.	• Fishers and vessel operators • Fisheries managers and regulators
Remediation	Identification and clearance of lost gear hotspots that represent (i) an operation or navigation hazard to their members, (ii) a significant economic loss through the ghost fishing and subsequent mortality of their members' target species, or (iii) a risk of	• Fisher organizations should periodically consult their members to understand whether ALDFG represents either an operational or safety hazard to their members, or alternately might be affecting their target stocks through ghost fishing.	• Fishers and vessel operators

	entangling aquatic mammals, birds or turtles occupying the region.	• If yes, fisher organizations would engage with the public, private and NGO sectors to investigate cost-effective methods of recovering ALDFG (and other aquatic litter, if appropriate).	

2. Fish Aggregating Devices (FADs)

Gear Class	Likelihood of Loss	Impact if Lost	Total Risk
Fish Aggregating Devices (FADs)	5	4	20

Susceptibility to loss:
FAD loss has become an increasingly important issue. While drifting FADs represent a considerable investment, losses can occur due to dFADs sinking, locator beacon failure or deliberate abandonment when they drift beyond a cost-effective distance from main fishing areas (Richardson et al, 2017). Anchored FADs are also prone to loss, mainly due to mooring failure, and are less easy to recover as they are not generally equipped with location equipment.

Impact of ALDFG:
The main impact for abandoned, lost or discarded FADs (and indeed some FADs still under the control of fishers) is from entanglement with FAD netting, with sharks and, to a lesser extent, aquatic turtles which are particularly vulnerable (Filmalter et al, 2013). Non-entangling netting under dFADs has been proposed as a solution, but this netting can become entangling when it is damaged during beaching or colliding with a reef. Until 100% biodegradable and non-entangling designs are available (ISSF, 2019) and broadly applied by purse seine fisheries, abandoned, lost or discarded FADs will continue to pose a large ghost fishing risk, significantly contribute to aquatic pollution, and continue to cause significant damage to sensitive aquatic environments such as coral reefs when they drift ashore. It should be noted that many tuna purse seine fleets are now being required by RFMOs to switch to non-entangling FADs. aFADs typically pose a reduced risk of entanglement and pollution than dFADs. This is largely because the lengths of purse seine netting that are typically attached to dFADs would cause too much drag in currents and strain the mooring lines used by aFADs. As a result, aFADs typically use “streamers” made of rope and strips or relatively small panels of small mesh shade cloth as aggregators.

Theme (Prevention/Mitigation/Remediation)	General Approach and Principle	Best Practices	Other stakeholders
Fisheries Managers and Regulators			
Prevention	Develop and apply regulations for FAD use based on local conditions	• Develop regulations governing FAD use and provide limits on FAD deployments (particularly dFADs). • Where FADs must be used, and where possible, encourage the use of aFADs rather than dFADs.	

Prevention	Trial and subsequent implementation of tracking technology for both anchored and drifting FADs.	Work with companies that develop transponder technology whereby active satellite/GPS tracking devices can be deployed on both anchored and drifting FADs to monitor their position. Where possible, this tracking data should be shared with local fisheries management authorities. Should a FAD become detached from their tether or drift off course, an appropriate plan should be in place to quickly and efficiently retrieve it. Retrieved FADs should be stored in a central location (or locations) and where possible, returned or otherwise made available to the owner to encourage participation in marking and tracking practices.	• Fishers and vessel operators • Recreational and tour vessel operators
Mitigation	Develop a gear loss reporting system where fishers must report gear lost during the season to local fisheries managers.	Develop regulations where fishers must report gear loss to fisheries managers as a condition of licensing. Develop a database to track this data over time to feed into possible fisheries management decisions and national removal plans. Generally, “no-fault” reporting systems tend to get the most buy-in, where fishers must report gear loss but are not penalized for losing gear for legitimate reasons (snags, weather, etc.). Some regulations do have penalties in place if fishers’ gear is found later but not reported lost, but this is contingent upon adequate mandatory gear marking, which does not occur in all areas of the Caribbean.	• Fishers and vessel operators • Fisher organizations
Fishers and Vessel Operators			
Prevention	Clear marking and identification of FADs (drifting and anchored).	FADs should be marked and identified appropriately and where possible retrieved at the end of their useful life. Drifting FADs should have some means of providing real-time information on the location of the FAD and an electronic transponder, where practicable, should be affixed. Location information should be provided in near real-time to the relevant authority for monitoring purposes.	• Fisheries managers and regulators

Prevention	Training and awareness-building of crew in good practice and responsible fishing.	• Repair or replace worn fishing gear or parts; • Training of crew on gear handling and operation; • Securely stow fishing gear on board to withstand bad weather / sea conditions; • Instruct crew members not to discard fishing gear overboard; • Make sure all equipment used with fishing gears is in good condition.	• Fisheries managers and regulators • Fisher organizations
Mitigation	Construct biodegradable FADs out of local natural materials wherever possible.	Raft: Rafts should be constructed using bamboo, balsa wood or other natural materials that degrade without polluting the aquatic environment. For FAD flotation, the use of plastic buoys and containers should be reduced as much as possible (e.g., reducing the weight and volume of the FAD structure would require less flotation). Tail: Only natural and/or biodegradable materials (cotton ropes and canvas, manila hemp, sisal, coconut fiber, etc.) should be used, so they do not pose an entanglement risk to marine life and that they degrade without causing harm to the ecosystem.	
Remediation	Retrieval of lost gear.	Implement a retrieval program at the end of the fishing season in collaboration with local fisheries management authorities to do targeted removals of any gear lost over the season, paying particular attention to critically sensitive habitat.	• Fisheries managers and regulators • Fisher organizations
Fisher Organizations			
Prevention	Development of codes of practice/good conduct on behalf of their members to facilitate and encourage responsible fishing and FAD use.	• Identification of common issues and management needs across the membership (and with other similar organizations where appropriate) and decide whether a Code of Practice might provide a set of standards and best practices to address these. • Participatory development of a Code of Practice, identifying minimum, good and best practice levels. • Agree how these might be implemented, e.g., voluntary, self-certification by the fisheries organization, or third party certified.	• Fishers and vessel operators

Prevention	Development of means and mechanisms to comply with MARPOL Annex V.	Fisher organizations should encourage their members to comply with MARPOL Annex V regulations on waste management at sea. If necessary (and as recognized by Art 6.4.1 in Annex V), assistance might be sought from government in "developing resolutions, bylaws and other internal mechanisms" (IMO, 2012). There is a strong international push to have FADs formally recognized under MAPROL Annex V.	• Fishers and vessel operators • Fisheries managers and regulators
Prevention	Work on behalf of their members to liaise with the fishing and other competent authorities in establishing marine spatial planning tools to minimize gear conflict.	• Work with members to review the advantages, disadvantages and mitigatory options of marine spatial planning approaches (e.g., gear zoning) to the membership. • Work with the statutory authorities involved in marine spatial planning to develop optimal working solutions that minimize potential gear conflict.	• Fishers and vessel operators • Fisheries managers and regulators
Prevention	Where fishing organizations procure goods or services on behalf of their members, they should require their suppliers to conform with Best Practice where applicable	• Fisher organizations involved in procurement on behalf of their members consider developing a responsible procurement strategy that requires suppliers to conform to certain standards in terms of design, quality and traceability of FADs. This strategy could be aimed at fulfilling this gear management best practice framework, but could also be expanded to include other considerations, such as social and ethical procurement. • Similar standards should be created for design, construction and use of artisanal FADs.	• Fishers and vessel operators • Gear manufacturers • Certification bodies
Prevention	Liaise with third party seafood certification bodies to address management and information requirements for reducing ghost fishing and the impacts of ALDFG on aquatic fauna, flora and habitats.	• Related to the other preventative measures mentioned above, fisher organizations might work with Fisheries Improvement Project (FIPs) and third-party certification bodies to ensure their members adhere to benchmarks and standards to which they are party. • A key focus will be the operational management and information requirements for best practice in ecosystem management, e.g., bycatch, endangered, threatened and protected (ETP) interactions and habitat impacts.	• Fishers and vessel operators • Certification bodies

Mitigation	Development of lost and abandoned fishing gear reporting protocols, procedures and avenues on behalf of their members.	• Through liaison with the relevant fisheries management and control authorities, development of protocols and procedures for the reporting of the loss or abandonment of FADs. The nature and scope of this reporting system would reflect both the scale of fishing involved, as well as the specific circumstances of the member vessel operations, e.g., the number of FADs used, etc. • Develop with members a FAD Watch or similar program whereby derelict or abandoned FADs are retrieved and brought back to a central location to be re-used or disposed of appropriately.	• Fishers and vessel operators • Fisheries managers and regulators

3. Traps/pots

Gear Class	Likelihood of Loss	Impact if Lost	Total Risk
Traps/Pots	**4**	**4**	**16**
Susceptibility to loss: Like gillnets, the loss of traps and pots is often linked to conflict with towed gears, as well as with other inshore water vessels and even large aquatic mammals. They are also particularly susceptible to theft and accidental loss through storms and other events. The increased use of GPS and other navigational devices, even by smaller vessels, has reduced the incidence of accidental trap loss. Longer pot strings may be easier to recover, while individual pots may be less so.			
Impact of ALDFG: Pots and traps also tend to pass through a progressive process of ghost fishing. As they are usually baited when they are set, if the pot is lost, over time the bait or lost catch attracts scavengers. These scavengers may become entrapped and subsequently die, forming new bait for other scavengers. Entrapped animals may escape over time. Animals captured in abandoned, lost or discarded traps die from starvation, cannibalism, infection, disease, or prolonged exposure to poor water quality (i.e., low dissolved oxygen). A key point is that catching efficiency depends on gear design, species behavior and seasonality. A second key risk of this gear is entanglement of large aquatic mammals with connecting ropes and lines, which can occur both when the gear is under control or is abandoned, lost or discarded.			

Theme (Prevention/Mitigation/Remediation)	General Approach and Principle	Best Practices	Other stakeholders
Fisheries Managers and Regulators			
Prevention	Marine spatial and/or temporal restrictions on setting traps and pots in order to reduce gear, conflicts and to ensure that fishers reduce the risk of their gear interacting with vulnerable aquatic habitats or species.	Restrict or limit the areas in which multiple gear types are used concurrently to harvest multiple species. This reduces the potential for gear conflict, especially between mobile and static fishing gear, which can lead to increased gear loss. This can also lead to less mortality of harvestable populations and maximize the economic potential of individual fisheries.	• Fishers and vessel operators • Fisher organizations
Prevention	Subsidies for fishers and vessel operators to facilitate investment new technology to monitor and retrieve gear.	Where practical, providing subsidies to fishers and vessel operators for the inclusion of GPS technology will allow gear to be tracked and facilitate the quick recovery of gear should it become lost.	
Prevention	Ensure appropriate inspection and enforcement of various regulations.	Consider inspection regimes for gear to ensure fishers are complying with regulations on mesh size, escape hatches, number of traps/pots on a string, etc. and that there is appropriate storage of gear on board vessels. This could perhaps be tied to licensing systems.	
Prevention / Mitigation	Policy, management and regulatory authorities should consider the need, scope, implementation and coordination procedures for a fishing gear marking system in waters under their jurisdiction including coordination between national and regional bodies across the Caribbean.	Enforcement of a gear-marking system adhering to the FAO VGMFG whereby traps and pots must be marked with port letters and numbers (PLN) of the fishers' vessel.	• Fishers and Vessel Operators • Fisher Organizations • Gear manufacturers • Fisheries control authorities • NGOs
Mitigation	Implement requirements for escape hatches for traps and pots to minimize their potential to ghost fish.	Develop and enforce regulations to ensure technical specifications for traps include the use of biodegradable panels and escape hatches to disable traps if lost.	• Fishers and Vessel Operators • Fisher Organizations
Mitigation	Develop a gear loss reporting system where fishers must report gear lost during the season to local fisheries managers.	Develop regulations where fishers must report gear loss to fisheries managers as a condition of licensing. Develop a database to track this data over time to feed into possible fisheries management decisions and national removal plans. Generally, "no-fault" reporting systems tend to get the most buy-in, where fishers must report gear loss but are not penalized for losing gear for legitimate	• Fishers and Vessel Operators • Fisher Organizations

		reasons (snags, weather, etc.). Some regulations do have penalties in place if fishers' gear is found later but not reported lost, but this is contingent upon adequate mandatory gear marking, which does not occur in all areas of the Caribbean.	
Fishers and Vessel Operators			
Prevention	Improved gear marking of deployed traps and pots so that set gear is visible to other ocean users.	Addition of easily visible surface marker buoys attached to either individual pots or at end of pots deployed in strings in order to reduce the incidence of conflict with towed gears and/or interactions with other vessels.	• Fisher organizations
Prevention	Ensure the responsible deployment of gear to avoid interactions with other vessels.	Avoid deploying traps and pots in areas of high vessel traffic / shipping lanes. Communicate with local ports and recreational vessels to establish local codes of conduct with respect to limiting the overlap between fishing areas and common traffic routes for other ocean traffic.	• Fisher organizations
Prevention	Training and awareness-building of crew in good practice and responsible fishing.	● Repair or replace worn fishing gear or parts; ● Training of crew on gear handling and operation; ● Securely stow fishing gear on board to withstand bad weather / sea conditions; ● Instruct crew members not to discard fishing gear overboard; Make sure all equipment used with fishing gears is in good condition.	• Fisher organizations
Mitigation	As many traps and pots used across the Caribbean region are made by fishers themselves, materials used and design should reduce the risk of ghost fishing should gear become lost.	Wherever possible use natural, biodegradable materials that will cause minimal impact to the environment should gear become lost. Additionally, escape hatches should be incorporated into the design so that species are not caught incidentally should gear become lost. Escape hatches should be attached to the pot with biodegradable natural material (i.e. cotton cord) and placed on the side of the trap/pot (not the top) to allow species to escape if the pot is lost.	• Fisher organizations • Fisheries managers and regulators
Remediation	Retrieval of lost gear.	Implement a retrieval program at the end of the fishing season in collaboration with local fisheries management authorities to do targeted removals of any gear lost over the season, paying particular attention to critically sensitive habitat.	• Fisher organizations • Fisheries managers and regulators • NGOs
Fisher Organizations			

Prevention	Development of codes of practice/good conduct on behalf of their members to facilitate and encourage responsible fishing.	• Identification of common issues and management needs across the membership (and with other similar organizations where appropriate) and decide whether a Code of Practice might provide a set of standards and best practices to address these. • Participatory development of a Code of Practice, identifying minimum, good and best practice levels. • Agree how these might be implemented, e.g., voluntary, self-certification by the fisheries organization, or third party certified.	• Fishers and vessel operators
Prevention	Development of means and mechanisms to comply with MARPOL Annex V.	Fisher organizations should encourage their members to comply with MARPOL Annex V regulations on waste management at sea. If necessary (and as recognized by Art 6.4.1 in Annex V), assistance might be sought from government in "developing resolutions, bylaws and other internal mechanisms" (IMO, 2012).	• Fishers and vessel operators • Fisheries managers and regulators
Prevention	Work on behalf of their members to liaise with the fishing and other competent authorities in establishing marine spatial planning tools to minimize gear conflict.	• Work with members to review the advantages, disadvantages and mitigatory options of marine spatial planning approaches (e.g., gear zoning) to the membership to minimize conflict with other gear types. • Work with the statutory authorities involved in marine spatial planning to develop optimal working solutions that minimize potential gear conflict.	• Fishers and vessel operators • Fisheries managers and regulators
Prevention	Where fishing organizations procure goods or services on behalf of their members, they should require their suppliers to conform with Best Practice where applicable	• Fisher organizations involved in procurement on behalf of their members consider developing a responsible procurement strategy that requires suppliers to conform to certain standards in terms of design, quality and traceability. This strategy could be aimed at fulfilling this gear management best practice framework, but could also be expanded to include other considerations, such as social and ethical procurement. • It is noted that in some countries (i.e. Jamaica), traps/pots are created by fishers using a variety of materials. In such cases, creating and encouraging use of a standardized design that includes escape hatches if a trap is lost may be appropriate.	• Fishers and vessel operators • Gear manufacturers • Certification bodies
Prevention	Liaise with third party seafood certification bodies to address management and	• Related to the other preventative measures mentioned above, fisher organizations might work with Fisheries Improvement	• Fishers and vessel operators

	information requirements for reducing ghost fishing and the impacts of ALDFG on aquatic fauna, flora and habitats.	Project (FIPs) and third-party certification bodies to ensure their members adhere to benchmarks and standards to which they are party. • A key focus will be the operational management and information requirements for best practice in ecosystem management, e.g., bycatch, endangered, threatened and protected (ETP) interactions and habitat impacts.	• Certification bodies
Mitigation	Development of lost and abandoned fishing gear reporting protocols, procedures and avenues on behalf of their members.	Through liaison with the relevant fisheries management and control authorities, development of protocols and procedures for the reporting of the loss or abandonment of fishing gear. The nature and scope of this reporting system would reflect both the scale of fishing involved, as well as the specific circumstances of the member vessel operations, e.g., the gear used, etc.	• Fishers and vessel operators • Fisheries managers and regulators

4. Longlines

Gear Class	Likelihood of Loss	Impact if Lost	Total Risk
Longlines	**3**	**3**	**9**
Susceptibility to loss: One of the main problems with longlines is how easily they can snag on the seabed and break away from the vessel. The extensive use of longlines, their often extremely long-set configuration, and relatively low cost means that the overall quantity of longlines lost is likely to be high. But figures to substantiate this are few and far between. There could be some deliberate gear discarding when tangled or damaged, particularly if there is not adequate space on the vessel to return the damaged gear for disposal.			
Impact of ALDFG: The mortality rate from lost demersal longlines is usually low, as is associated habitat damage (Pham et al, 2014). Such lost gear may persist in the environment, however, when it is constructed of monofilament. Ghost fishing mortality is a function of the gear type, the operation and the location in regard to active ocean features and elements. Lost longline gear may continue to catch fish as long as bait exists on the hooks. Fish caught on the hooks may themselves become a form of bait for subsequent fish, both target and non-target, and longlines will not stop fishing until all of the hooks are bare. Baited hooks may also pose an ingestion risk to aquatic mammals, birds, turtles and other animals and the lines themselves pose an entanglement risk.			

Theme (Prevention/Mitigation/Remediation)	General Approach and Principle	Best Practices	Other stakeholders
Fisheries Managers and Regulators			
Prevention	Policy, management and regulatory authorities should consider the need, scope, implementation and coordination procedures for a fishing gear marking system in waters under their jurisdiction including coordination between national and regional bodies across the Caribbean.	Enforcement of a gear-marking system adhering to the FAO VGMFG whereby long lines buoys must be marked with port letters and numbers (PLN) of the fishers' vessel.	• Fisher organizations
Mitigation	Develop a gear loss reporting system where fishers must report gear lost during the season to local fisheries managers.	Develop regulations where fishers must report gear loss to fisheries managers as a condition of licensing. Develop a database to track this data over time to feed into possible fisheries management decisions and national removal plans. Generally, "no-fault" reporting systems tend to get the most buy-in, where fishers must report gear loss but are not penalized for losing gear for legitimate reasons (snags, weather, etc.). Some regulations do have penalties in place if fishers' gear is found later but not reported lost, but this is contingent upon adequate mandatory gear marking, which does not occur in all areas of the Caribbean.	• Fishers and vessel operators • Fisher organizations
Fishers and Vessel Operators			
Prevention	Adjusting fishing methods to prevailing conditions to reduce the risk of gear loss.	Limiting the length of longline deployed and/or reduce soak time in order to increase control of fishing gear and reduce the risk of damage or loss.	• Fisher organizations
Prevention	Improved gear marking of deployed longlines so that set gear is visible to other ocean users.	Affix surface marker buoys attached to either end of the main line in order to reduce the incidence of conflict with towed gears and/or interactions with other vessels which may lead to gear loss.	• Fisher organizations • Fisheries managers and regulators
Prevention	Responsible deployment of gear.	Where possible/practical, employ the use of improved navigational technologies aboard vessels in order to reduce the incident of gear conflict and/or contact with seafloor habitats where branch lines can become snagged and break away.	• Fisher organizations
Prevention	Training and awareness-building of crew in good practice and responsible fishing.	• Repair or replace worn fishing gear or parts; • Training of crew on gear handling and operation;	• Fisher organizations

		• Securely stow fishing gear on board to withstand bad weather / sea conditions; • Instruct crew members not to discard fishing gear overboard; Make sure all equipment used with fishing gears is in good condition.	
Remediation	Retrieval of lost gear.	Implement a retrieval program at the end of the fishing season in collaboration with local fisheries management authorities to do targeted removals of any gear lost over the season, paying particular attention to critically sensitive habitat.	• Fisher organizations • Fisheries managers and regulators • NGOs
Fisher Organizations			
Prevention	Development of codes of practice/good conduct on behalf of their members to facilitate and encourage responsible fishing.	• Identification of common issues and management needs across the membership (and with other similar organizations where appropriate) and decide whether a Code of Practice might provide a set of standards and best practices to address these. • Participatory development of a Code of Practice, identifying minimum, good and best practice levels. • Agree how these might be implemented, e.g., voluntary, self-certification by the fisheries organization, or third party certified.	• Fishers and vessel operators
Prevention	Development of means and mechanisms to comply with MARPOL Annex V.	Fisher organizations should encourage their members to comply with MARPOL Annex V regulations on waste management at sea. If necessary (and as recognized by Art 6.4.1 in Annex V), assistance might be sought from government in “developing resolutions, bylaws and other internal mechanisms” (IMO, 2012).	• Fishers and vessel operators • Fisheries managers and regulators
Prevention	Work on behalf of their members to liaise with the fishing and other competent authorities in establishing marine spatial planning tools to minimize gear conflict.	• Work with members to review the advantages, disadvantages and mitigatory options of marine spatial planning approaches (e.g., gear zoning) to the membership to minimize conflict with other gear types. • Work with the statutory authorities involved in marine spatial planning to develop optimal working solutions that minimize potential gear conflict.	• Fishers and vessel operators • Fisheries managers and regulators
Prevention	Where fishing organizations procure goods or services on behalf of their members, they	• Fisher organizations involved in procurement on behalf of their members consider developing a responsible procurement strategy that requires suppliers to conform to certain standards	• Fishers and vessel operators • Gear manufacturers

	should require their suppliers to conform with Best Practice where applicable	in terms of design, quality and traceability. This strategy could be aimed at fulfilling this gear management best practice framework, but could also be expanded to include other considerations, such as social and ethical procurement.	• Certification bodies
Prevention	Liaise with third party seafood certification bodies to address management and information requirements for reducing ghost fishing and the impacts of ALDFG on aquatic fauna, flora and habitats.	• Related to the other preventative measures mentioned above, fisher organizations might work with Fisheries Improvement Project (FIPs) and third-party certification bodies to ensure their members adhere to benchmarks and standards to which they are party. • A key focus will be the operational management and information requirements for best practice in ecosystem management, e.g., bycatch, endangered, threatened and protected (ETP) interactions and habitat impacts.	• Fishers and vessel operators • Certification bodies
Mitigation	Development of lost and abandoned fishing gear reporting protocols, procedures and avenues on behalf of their members.	Through liaison with the relevant fisheries management and control authorities, development of protocols and procedures for the reporting of the loss or abandonment of fishing gear. The nature and scope of this reporting system would reflect both the scale of fishing involved, as well as the specific circumstances of the member vessel operations, e.g., the gear used, etc.	• Fishers and vessel operators • Fisheries managers and regulators

5. Bottom Trawls

Gear Class	Likelihood of Loss	Impact if Lost	Total Risk
Bottom Trawls	**2**	**3**	**6**
Susceptibility to loss: Apart from the Norwegian, FANTARED and some Irish and United Kingdom surveys, there is little other reference in literature to the levels of loss of trawl nets and other mobile gear. Anecdotal information suggests that considerable effort is put into the immediate recovery of lost gears due to their high value, combined with improvements in navigation and gear marking technologies. However, it is apparent that some trawl nets are lost, possibly even in considerable volume. For example, three-quarters of fishing debris found on beaches on Cape York, Australia consists of trawl nets, and the majority (around 79%) of fishing debris is of southeast Asian manufacture. It is also likely that trawl warps are sometimes discarded at sea (Macfadyen et al, 2009).			
Impact of ALDFG: The larger diameter synthetic multifilament twine common to trawl nets is the key factor that reduces ghost fishing mortality in lost trawl gear as it tends to weigh the net down, speeding the substrate aggregation process. However, this can increase the likelihood of entanglement with aquatic mammals, reptiles or birds. In dynamic areas such as tidal streams or even oceanic current			

gyres, abandoned, lost or discarded trawl nets may not accrete to the seabed and may cause more damage as they move around. In this case they may represent a potential navigation hazard or cause physical abrasion to the benthic substrate.

Theme (Prevention/Mitigation/Remediation)	General Approach and Principle	Best Practices	Other stakeholders
Fisheries Managers and Regulators			
Prevention	Policy, management and regulatory authorities should consider the need, scope, implementation and coordination procedures for a fishing gear marking system in waters under their jurisdiction including coordination between national and regional bodies across the Caribbean.	Enforcement of a gear-marking system adhering to the FAO VGMFG whereby trawl nets must be marked with port letters and numbers (PLN) of the fishers' vessel.	• Fisher organizations
Mitigation	Develop a gear loss reporting system where fishers must report gear lost during the season to local fisheries managers.	Develop regulations where fishers must report gear loss to fisheries managers as a condition of licensing. Develop a database to track this data over time to feed into possible fisheries management decisions and national removal plans. Generally, "no-fault" reporting systems tend to get the most buy-in, where fishers must report gear loss but are not penalized for losing gear for legitimate reasons (snags, weather, etc.). Some regulations do have penalties in place if fishers' gear is found later but not reported lost, but this is contingent upon adequate mandatory gear marking, which does not occur in all areas of the Caribbean.	• Fishers and vessel operators • Fisher organizations
Fishers and Vessel Operators			
Prevention	Avoid conflict with other gear classes/deployments.	Where practical/feasible, employ improved navigational technologies aboard vessels in order to reduce the incident of gear conflict and/or contact with seafloor habitats.	• Fisher organizations • Fisheries managers and regulators
Prevention	Adjust fishing methods to prevailing conditions to reduce the risk of damaging and/or losing bottom trawl gear.	• Use and sharing of seabed and local current mapping data; • Awareness of weather forecasts; • Reduce tow duration; • Avoid setting gear in areas known for snagging.	• Fisher organizations • Fisheries managers and regulators
Prevention	Training and awareness-building of crew in good practice and responsible fishing.	• Repair or replace worn fishing gear or parts; • Training of crew on gear handling and operation;	• Fisher organizations • Fisheries managers and regulators

		• Securely stow fishing gear on board to withstand bad weather / sea conditions, including net cuttings from trawl repairs; • Instruct crew members not to discard fishing gear overboard; • Make sure all equipment used with fishing gears is in good condition.	
Remediation	Retrieval of lost gear.	Implement a retrieval program at the end of the season in collaboration with local fisheries management authorities to do targeted removals of any gear lost over the season paying particular attention to critically sensitive habitat.	
Fisher Organizations			
Prevention	Development of codes of practice/good conduct on behalf of their members to facilitate and encourage responsible fishing.	• Identification of common issues and management needs across the membership (and with other similar organizations where appropriate) and decide whether a Code of Practice might provide a set of standards and best practices to address these. • Participatory development of a Code of Practice, identifying minimum, good and best practice levels. • Agree how these might be implemented, e.g., voluntary, self-certification by the fisheries organization, or third party certified.	• Fishers and vessel operators
Prevention	Development of means and mechanisms to comply with MARPOL Annex V.	Fisher organizations should encourage their members to comply with MARPOL Annex V regulations on waste management at sea. If necessary (and as recognized by Art 6.4.1 in Annex V), assistance might be sought from government in “developing resolutions, bylaws and other internal mechanisms” (IMO, 2012).	• Fishers and vessel operators • Fisheries managers and regulators
Prevention	Work on behalf of their members to liaise with the fishing and other competent authorities in establishing marine spatial planning tools to minimize gear conflict.	• Work with members to review the advantages, disadvantages and mitigatory options of marine spatial planning approaches (e.g., gear zoning) to the membership to minimize conflict with other gear types. • Work with the statutory authorities involved in marine spatial planning to develop optimal working solutions that minimize potential gear conflict.	• Fishers and vessel operators • Fisheries managers and regulators
Prevention	Where fishing organizations procure goods or services on behalf of their members, they	Fisher organizations involved in procurement on behalf of their members consider developing a responsible procurement strategy that requires suppliers to conform to certain standards in terms of	• Fishers and vessel operators • Gear manufacturers

	should require their suppliers to conform with Best Practice where applicable	design, quality and traceability. This strategy could be aimed at fulfilling this gear management best practice framework, but could also be expanded to include other considerations, such as social and ethical procurement.	• Certification bodies
Prevention	Liaise with third party seafood certification bodies to address management and information requirements for reducing ghost fishing and the impacts of ALDFG on aquatic fauna, flora and habitats.	• Related to the other preventative measures mentioned above, fisher organizations might work with Fisheries Improvement Project (FIPs) and third-party certification bodies to ensure their members adhere to benchmarks and standards to which they are party. • A key focus will be the operational management and information requirements for best practice in ecosystem management, e.g., bycatch, endangered, threatened and protected (ETP) interactions and habitat impacts.	• Fishers and vessel operators • Certification bodies
Mitigation	Development of lost and abandoned fishing gear reporting protocols, procedures and avenues on behalf of their members.	Through liaison with the relevant fisheries management and control authorities, development of protocols and procedures for the reporting of the loss or abandonment of fishing gear. The nature and scope of this reporting system would reflect both the scale of fishing involved, as well as the specific circumstances of the member vessel operations, e.g., the gear used, etc.	• Fishers and vessel operators • Fisheries managers and regulators

6. Hooks and Lines

Gear Class	Likelihood of Loss	Impact if Lost	Total Risk
Hooks and Lines	3	2	6
Susceptibility to loss: Hooks and sections of line can be lost through snagging with the bottom, the age-related brittleness of monofilament line, and when they are broken by large fish or other animals. Although abandoned, lost or discarded hooks and lines are generally small in size, their extensive use by both commercial and ,recreational fishers in often rocky and complex benthic environments means that the cumulative volume is likely to be considerable. A recent analysis found that 29% of fishing lines used globally are lost (Richardson et al, 2019).			
Impact of ALDFG: Hooks can become embedded in fish or other animal jaws, inhibiting feeding and causing local trauma that can lead to eventual mortality. Lines can become wrapped around both aquatic flora and fauna with subsequent entanglement. Both baited and unbaited hooks may also pose an ingestion risk to aquatic mammals, birds, turtles and other animals. Foraging birds—both seabirds			

and water birds such as swans—are at particular risk from both engorging hooks and becoming entangled in line. This said, the potential for ghost fishing from lost hooks and lines is usually low. Such lost gear may persist in the environment as it usually consists of a monofilament line that will gradually break up and contribute to the microplastic load (Lusher et al, 2017).

Theme (Prevention/Mitigation/Remediation)	General Approach and Principle	Best Practices	Other stakeholders
Fisheries Managers and Regulators			
Mitigation	Develop a gear loss reporting system where fishers must report gear lost during the season to local fisheries managers.	Develop regulations where fishers must report gear loss to fisheries managers as a condition of licensing. Develop a database to track this data over time to feed into possible fisheries management decisions and national removal plans. Generally, "no-fault" reporting systems tend to get the most buy-in, where fishers must report gear loss but are not penalized for losing gear for legitimate reasons (snags, weather, etc.). Some regulations do have penalties in place if fishers' gear is found later but not reported lost, but this is contingent upon adequate mandatory gear marking, which does not occur in all areas of the Caribbean and is very difficult with hook and line gear.	• Fishers and vessel operators • Fisher organizations
Fishers and Vessel Operators			
Prevention	Limit soak times for gear deployment.	Reduce the length of set configuration and/or soak time.	• Fisher organizations
Prevention	Use materials less likely to cause injury to marine life if lost.	Material type/shape – hooks; jigs; lures Use circle hooks (not J hooks) to avoid serious injury to species hooked in cases where lines may break and gear may be lost.	• Fisheries managers and regulators • Fisher organizations
Prevention	Training and awareness-building of crew in good practice and responsible fishing.	• Use gear only in areas where potential for snagging is low; • Repair or replace worn fishing gear or parts; • Training of crew on gear handling and operation; • Securely stow fishing gear on board to withstand bad weather / sea conditions; • Instruct crew members not to discard fishing gear overboard; • Make sure all equipment used with fishing gears is in good condition.	• Fisher organizations
Remediation	Retrieval of lost gear.	• Implement a retrieval program at the end of the fishing season in collaboration with local fisheries management authorities to do targeted removals of any gear lost over the season, paying particular attention to critically sensitive habitat.	• Fisheries managers and regulators • Fisher organizations

			• NGOs
Fisher Organizations			
Prevention	Development of codes of practice/good conduct on behalf of their members to facilitate and encourage responsible fishing.	• Identification of common issues and management needs across the membership (and with other similar organizations where appropriate) and decide whether a Code of Practice might provide a set of standards and best practices to address these. • Participatory development of a Code of Practice, identifying minimum, good and best practice levels. • Agree how these might be implemented, e.g., voluntary, self-certification by the fisheries organization, or third party certified.	• Fishers and vessel operators
Prevention	Development of means and mechanisms to comply with MARPOL Annex V.	Fisher organizations should encourage their members to comply with MARPOL Annex V regulations on waste management at sea. If necessary (and as recognized by Art 6.4.1 in Annex V), assistance might be sought from government in “developing resolutions, bylaws and other internal mechanisms” (IMO, 2012).	• Fishers and vessel operators • Fisheries managers and regulators
Prevention	Work on behalf of their members to liaise with the fishing and other competent authorities in establishing marine spatial planning tools to minimize gear conflict.	• Work with members to review the advantages, disadvantages and mitigatory options of marine spatial planning approaches (e.g., gear zoning) to the membership to minimize conflict with other gear types. • Work with the statutory authorities involved in marine spatial planning to develop optimal working solutions that minimize potential gear conflict.	• Fishers and vessel operators • Fisheries managers and regulators
Prevention	Where fishing organizations procure goods or services on behalf of their members, they should require their suppliers to conform with Best Practice where applicable	Fisher organizations involved in procurement on behalf of their members consider developing a responsible procurement strategy that requires suppliers to conform to certain standards in terms of design, quality and traceability. This strategy could be aimed at fulfilling this gear management best practice framework, but could also be expanded to include other considerations, such as social and ethical procurement.	• Fishers and vessel operators • Gear manufacturers • Certification bodies
Prevention	Liaise with third party seafood certification bodies to address management and information requirements for reducing ghost	• Related to the other preventative measures mentioned above, fisher organizations might work with Fisheries Improvement Project (FIPs) and third-party certification bodies to ensure	• Fishers and vessel operators • Certification bodies

	fishing and the impacts of ALDFG on aquatic fauna, flora and habitats.	their members adhere to benchmarks and standards to which they are party. • A key focus will be the operational management and information requirements for best practice in ecosystem management, e.g., bycatch, endangered, threatened and protected (ETP) interactions and habitat impacts.	
Mitigation	Development of lost and abandoned fishing gear reporting protocols, procedures and avenues on behalf of their members.	Through liaison with the relevant fisheries management and control authorities, development of protocols and procedures for the reporting of the loss or abandonment of fishing gear. The nature and scope of this reporting system would reflect both the scale of fishing involved, as well as the specific circumstances of the member vessel operations, e.g., the gear used, etc.	• Fishers and vessel operators • Fisheries managers and regulators

7. Midwater Trawls

Gear Class	Likelihood of Loss	Impact if Lost	Total Risk
Midwater Trawls	**1**	**2**	**2**

Susceptibility to loss:
As they are fished mid-water they seldom have contact with the bottom and thus gear loss is relatively infrequent. Usually being large and expensive sets of equipment, if lost, attempts will be made to recover the gear. Given the size of the gear, and the sophistication of the vessels involved, this is usually successful.

Impact of ALDFG:
With a smaller mesh size than bottom trawls, these small pelagic fish targeting nets may capture fish, but being large and heavy are more likely to quickly accrete to the seabed. With a small mesh they are less likely to entangle aquatic animals, although other elements of the gear such as the warps and head/foot ropes may be problematic. They may cause damage to sensitive habitats if moved by currents, although will tend to be lost in deeper, possibly less biodiverse seabed areas.

Theme (Prevention/Mitigation/Remediation)	General Approach and Principle	Best Practices	Other stakeholders
Fisheries Managers and Regulators			
Mitigation	Develop a gear loss reporting system where fishers must report gear lost during the season to local fisheries managers.	Develop regulations where fishers must report gear loss to fisheries managers as a condition of licensing. Develop a database to track this data over time to feed into possible fisheries management decisions and national removal plans. Generally, “no-fault” reporting systems tend to get the most buy-in, where fishers must	• Fishers and vessel operators • Fisher organizations

		report gear loss but are not penalized for losing gear for legitimate reasons (snags, weather, etc.). Some regulations do have penalties in place if fishers' gear is found later but not reported lost, but this is contingent upon adequate mandatory gear marking, which does not occur in all areas of the Caribbean.	
Fishers and Vessel Operators			
Prevention	Ensure the responsible deployment of gear to avoid interactions with other vessels.	Avoid deploying and towing midwater trawls in areas of high vessel traffic / shipping lanes.	• Fisher organizations
Prevention	Training and awareness-building of crew in good practice and responsible fishing.	• Repair or replace worn fishing gear or parts; • Training of crew on gear handling and operation, including for net cuttings for repairs done on board; • Securely stow fishing gear on board to withstand bad weather / sea conditions; • Instruct crew members not to discard fishing gear overboard; • Make sure all equipment used with fishing gears is in good condition.	• Fisher organizations
Remediation	Retrieval of lost gear.	Implement a retrieval program at the end of the fishing season in collaboration with local fisheries management authorities to do targeted removals of any gear lost over the season, paying particular attention to critically sensitive habitat.	• Fisheries managers and regulators • Fisher organizations • NGOs
Fisher Organizations			
Prevention	Development of codes of practice/good conduct on behalf of their members to facilitate and encourage responsible fishing.	• Identification of common issues and management needs across the membership (and with other similar organizations where appropriate) and decide whether a Code of Practice might provide a set of standards and best practices to address these. • Participatory development of a Code of Practice, identifying minimum, good and best practice levels. • Agree how these might be implemented, e.g., voluntary, self-certification by the fisheries organization, or third party certified.	• Fishers and vessel operators
Prevention	Development of means and mechanisms to comply with MARPOL Annex V.	Fisher organizations should encourage their members to comply with MARPOL Annex V regulations on waste management at sea. If necessary (and as recognized by Art 6.4.1 in Annex V), assistance	• Fishers and vessel operators

		might be sought from government in “developing resolutions, bylaws and other internal mechanisms” (IMO, 2012).	• Fisheries managers and regulators
Prevention	Work on behalf of their members to liaise with the fishing and other competent authorities in establishing marine spatial planning tools to minimize gear conflict.	• Work with members to review the advantages, disadvantages and mitigatory options of marine spatial planning approaches (e.g., gear zoning) to the membership to minimize conflict with other gear types. • Work with the statutory authorities involved in marine spatial planning to develop optimal working solutions that minimize potential gear conflict.	• Fishers and vessel operators • Fisheries managers and regulators
Prevention	Where fishing organizations procure goods or services on behalf of their members, they should require their suppliers to conform with Best Practice where applicable	Fisher organizations involved in procurement on behalf of their members consider developing a responsible procurement strategy that requires suppliers to conform to certain standards in terms of design, quality and traceability. This strategy could be aimed at fulfilling this gear management best practice framework, but could also be expanded to include other considerations, such as social and ethical procurement.	• Fishers and vessel operators • Gear manufacturers • Certification bodies
Prevention	Liaise with third party seafood certification bodies to address management and information requirements for reducing ghost fishing and the impacts of ALDFG on aquatic fauna, flora and habitats.	• Related to the other preventative measures mentioned above, fisher organizations might work with Fisheries Improvement Project (FIPs) and third-party certification bodies to ensure their members adhere to benchmarks and standards to which they are party. • A key focus will be the operational management and information requirements for best practice in ecosystem management, e.g., bycatch, endangered, threatened and protected (ETP) interactions and habitat impacts.	• Fishers and vessel operators • Certification bodies
Mitigation	Development of lost and abandoned fishing gear reporting protocols, procedures and avenues on behalf of their members.	Through liaison with the relevant fisheries management and control authorities, development of protocols and procedures for the reporting of the loss or abandonment of fishing gear. The nature and scope of this reporting system would reflect both the scale of fishing involved, as well as the specific circumstances of the member vessel operations, e.g., the gear used, etc.	• Fishers and vessel operators • Fisheries managers and regulators

8. Seine Nets

Gear Class	Likelihood of Loss	Impact if Lost	Total Risk
Seine Nets	1	2	2

Susceptibility to loss:
As they are fished on the surface, purse seines and ring nets seldom have impact with the bottom and thus complete gear loss is highly unusual. Usually being large and expensive sets of equipment, if lost, attempts will be made to recover the gear. Given the size of the gear, the fact that it is floating, and the sophistication of the vessels involved, this is usually successful. There is potential for the loss of floats from purse seines, and while these are normally retrieved or washed up, their breakup may contribute to the microplastic load. For FADs, see above.

Impact of ALDFG:
With a smaller mesh size than bottom trawls, those purses seines targeting small pelagic fish may capture fish but being large and heavy are more likely to quickly accrete to the seabed. With a small mesh they are less likely to entangle aquatic animals. They may cause damage to sensitive habitats if moved by currents, although will tend to be lost in deeper, possibly less biodiverse seabed areas. However, as mentioned above, abandoned, lost or discarded purse seines are very rare.

Theme (Prevention/Mitigation/Remediation)	General Approach and Principle	Best Practices	Other stakeholders
Fisheries Managers and Regulators			
Mitigation	Develop a gear loss reporting system where fishers must report gear lost during the season to local fisheries managers.	Develop regulations where fishers must report gear loss to fisheries managers as a condition of licensing. Develop a database to track this data over time to feed into possible fisheries management decisions and national removal plans. Generally, “no-fault” reporting systems tend to get the most buy-in, where fishers must report gear loss but are not penalized for losing gear for legitimate reasons (snags, weather, etc.). Some regulations do have penalties in place if fishers’ gear is found later but not reported lost, but this is contingent upon adequate mandatory gear marking, which does not occur in all areas of the Caribbean.	• Fishers and vessel operators • Fisher organizations
Fishers and Vessel Operators			
Prevention	Training and awareness-building of crew in good practice and responsible fishing.	• Repair or replace worn fishing gear or parts; • Training of crew on gear handling and operation; • Securely stow fishing gear on board to withstand bad weather / sea conditions; • Instruct crew members not to discard fishing gear overboard; • Make sure all equipment used with fishing gears is in good condition.	• Fisher organizations

Remediation	Retrieval of lost gear.	Implement a retrieval program at the end of the fishing season in collaboration with local fisheries management authorities to do targeted removals of any gear lost over the season, paying particular attention to critically sensitive habitat.	• Fisheries managers and regulators • Fisher organizations
Fisher Organizations			
Prevention	Development of codes of practice/good conduct on behalf of their members to facilitate and encourage responsible fishing.	• Identification of common issues and management needs across the membership (and with other similar organizations where appropriate) and decide whether a Code of Practice might provide a set of standards and best practices to address these. • Participatory development of a Code of Practice, identifying minimum, good and best practice levels. • Agree how these might be implemented, e.g., voluntary, self-certification by the fisheries organization, or third party certified.	• Fishers and vessel operators
Prevention	Development of means and mechanisms to comply with MARPOL Annex V.	Fisher organizations should encourage their members to comply with MARPOL Annex V regulations on waste management at sea. If necessary (and as recognized by Art 6.4.1 in Annex V), assistance might be sought from government in “developing resolutions, bylaws and other internal mechanisms” (IMO, 2012).	• Fishers and vessel operators • Fisheries managers and regulators
Prevention	Work on behalf of their members to liaise with the fishing and other competent authorities in establishing marine spatial planning tools to minimize gear conflict.	• Work with members to review the advantages, disadvantages and mitigatory options of marine spatial planning approaches (e.g., gear zoning) to the membership to minimize conflict with other gear types. • Work with the statutory authorities involved in marine spatial planning to develop optimal working solutions that minimize potential gear conflict.	• Fishers and vessel operators • Fisheries managers and regulators
Prevention	Where fishing organizations procure goods or services on behalf of their members, they should require their suppliers to conform with Best Practice where applicable	Fisher organizations involved in procurement on behalf of their members consider developing a responsible procurement strategy that requires suppliers to conform to certain standards in terms of design, quality and traceability. This strategy could be aimed at fulfilling this gear management best practice framework, but could also be expanded to include other considerations, such as social and ethical procurement.	• Fishers and vessel operators • Gear manufacturers • Certification bodies

Prevention	Liaise with third party seafood certification bodies to address management and information requirements for reducing ghost fishing and the impacts of ALDFG on aquatic fauna, flora and habitats.	• Related to the other preventative measures mentioned above, fisher organizations might work with Fisheries Improvement Project (FIPs) and third-party certification bodies to ensure their members adhere to benchmarks and standards to which they are party. • A key focus will be the operational management and information requirements for best practice in ecosystem management, e.g., bycatch, endangered, threatened and protected (ETP) interactions and habitat impacts.	• Fishers and vessel operators • Certification bodies
Mitigation	Development of lost and abandoned fishing gear reporting protocols, procedures and avenues on behalf of their members.	Through liaison with the relevant fisheries management and control authorities, development of protocols and procedures for the reporting of the loss or abandonment of fishing gear. The nature and scope of this reporting system would reflect both the scale of fishing involved, as well as the specific circumstances of the member vessel operations, e.g., the gear used, etc.	• Fishers and vessel operators • Fisheries managers and regulators

Section Three: Conclusion

Fisheries in the Caribbean represent a way of life for tens of thousands of people, most of whom are involved in small-scale fisheries with millions in the region being supported by the wider fisheries industry. ALDFG poses a significant threat to the future of fish stocks as lost gear can continue to ghost fish indiscriminately, which could pose significant socio-economic ramifications for those that rely on fishing for their livelihood and wellbeing across the region. This document acknowledges the importance of the future sustainability of fisheries across the Caribbean region in safeguarding people's livelihoods and food security and provides strategic guidance for a coordinated approach to managing ALDFG across the region through a variety of practical best practices across prevention, mitigation and remediation strategies. This document has been compiled by GGGI in consultation with GCFI and CRFM, to provide a set of recommendations, based on the C-BPF, that are tailored to the unique conditions experienced across the Caribbean region to help manage ALDFG.

While the intention of this document is to provide best practice recommendations for the management of ALDFG across the Caribbean region, it is important to acknowledge that ALDFG contributes to the broader marine litter issue. As such, this document compliments existing frameworks that currently exist for managing marine litter such as the Regional Marine Litter Action Plan, the Regional Marine Litter Strategy and the Cartagena Convention in general. As ALDFG is such an important contributor to the broader marine debris issue, its management also has ramifications for solid waste management more broadly. While solid waste management is not directly in scope of this document, it is an area that requires more work and highlights an opportunity, and need, for the inclusion of ALDFG under solid waste management practices.

Education and awareness, capacity build and sound data reporting will be important cross-cutting themes to inform the future evolution of this document and the recommended best practices for the region. As technology, gear design, and innovation continues to improve, so too will the ways in which we manage ALDFG.