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## **Barriers to Selective Fishing Gear Innovation in UK Waters**

Regulatory Constraints, Technical Conservation Measures and Innovation Challenges

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#### **Executive summary**

This report examines the barriers to adopting more selective and sustainable fishing gear in UK waters. Under the EU framework, regulatory change in fisheries was often slow and centralised, limiting the ability of Member States to tailor measures to local conditions. Despite the potential of post-Brexit regulatory flexibility, progress has been hindered by unclear approval processes, a lack of incentives to change, and inconsistent policies across devolved administrations (DAs). Interviews with industry stakeholders highlight the need for a more adaptive, transparent, and supportive regulatory framework to encourage innovation and reduce UK bycatch and discards.

Regulatory barriers remain a major obstacle, as legacy EU rules still dominate the technical framework, and no streamlined approval process has emerged post-Brexit. Regional disparities across DAs create confusion and duplication, preventing efficient cross-border gear adoption and causing frustration for fishers that operate in multiple jurisdictions. Economic and practical challenges — such as the financial risk of gear trials, the absence of appropriate compensatory mechanisms, and the lack of centralised information — deter innovation and limit uptake at scale. Unclear evidence thresholds and inconsistent guidance from regulatory bodies leave both innovators and fishers unsure of how to clearly move from concept to approval.

To overcome these challenges, the UK should consider updating its approach to gear regulation. Key recommendations include developing a streamlined, transparent gear approval process; harmonising regulatory practices across regions; incentivising fast-track trials; and improving access to clear, centralised information. UK fisheries regulators, including Defra and the other DAs, have an opportunity to take the lead in reforming the gear approval process, ensuring policies reflect practical realities, enable sustainable innovation, and align with the bycatch reduction goals of the Fisheries Act 2020 (FA 2020) and Joint Fisheries Statement (JFS).

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## Key Recommendations

- **Develop a clear, streamlined approval process** for new fishing gear that is accessible, consistent, and tailored to UK-specific needs.
- **Implement fast-track approval pathways** for Remote Electronic Monitoringequipped vessels, leveraging compliance data to support innovation.
- Create a centralised, user-friendly database of approved gears, trial procedures, and regulatory requirements to reduce confusion and improve transparency.
- Harmonise gear approval processes across DAs, allowing regional recognition of gear trials and reducing duplication of effort.
- **Explore alternative funding models** (e.g., industry-led or private investment) to support gear trials and offset financial risk to fishers.
- Strengthen structured engagement with fishers and Producer Organisations (POs), ensuring policies reflect practical realities and build industry trust.
- Increase the use of adaptive management tools to allow regulations to evolve in response to new evidence and changing conditions



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#### Introduction

UK fishers adopting new fishing gear designs in the UK are often hindered by cost, practicality, and concerns over reduced catch rates. These difficulties are also compounded in many instances by inconsistent regulation and unclear approval processes, as well as a certain rigidity in gear technical conservation regulations and processes. Post-Brexit, the FA 2020<sup>1</sup> prioritises bycatch reduction through the JFS.<sup>2</sup> To support this goal, it is critical to simplify the adoption process for fishing gears that reduce bycatch and discarding, while also providing regulatory and management flexibility for innovative gear use. The JFS sets out the policies for achieving the objectives of the FA 2020 and includes a bycatch objective that *"looks to avoid or reduce the catching of fish that are unwanted or below the minimum conservation reference size."*. The objective notes that:

- a) the catching of fish that are below minimum conservation reference size, and other bycatch, is avoided or reduced,
- b) catches are recorded and accounted for, and

c) bycatch that is fish is landed, but only where this is appropriate and (in particular) does not create an incentive to catch fish that are below minimum conservation reference size.

With clearly defined bycatch objectives under the FA 2020, streamlining the adoption of new gear is increasingly important if the UK government is to achieve Good Environmental Status (GES) as set out in the UK Marine Strategy.<sup>3</sup> Since leaving the European Union (EU), the UK is no longer bound by the Landing Obligation (LO)<sup>\*1</sup> under the Common Fisheries Policy<sup>4</sup> (CFP). However, through the FA 2020, the Secretary of State has the power to establish a scheme for charging English fishing licence holders that land fish more than their authorised quota. This is designed to support compliance with the LO, maintaining a focus on sustainability and discard reduction within UK waters. While the UK therefore now has greater flexibility to tailor discard policies to its specific fisheries, many industry stakeholders argue that UK management remains too rigid to respond effectively to seasonal and longer-term stock abundance changes. Discard prevention remains a priority, with bycatch quotas and technologies such as Remote Electronic Monitoring (REM) being implemented to reduce discards and improve monitoring and compliance.

<sup>&</sup>lt;sup>\*1</sup> The Landing Obligation applies to all fishing vessels, including those under 10 metres in length. It does not apply to recreational fisheries. All quota species must be landed and counted against quota unless exemptions apply.

Technical conservation measures (TCMs) are the rules that control fishing gear design, and fishing practices to help reduce the capture of juvenile fish and other unwanted species, whilst also minimising impacts on the wider marine ecosystem, like benthic impacts from fishing gears that contact the seabed. In the UK, many TCMs are still derived from former EU legislation, leading to guidance documents that in some cases are outdated<sup>\*2</sup>, lacking in the technical detail necessary to keep pace with changing fishing environments (stock shifts and fleet behaviour changes), and causing inconsistencies across the jurisdictional waters of the DAs. In the eyes of many in the UK fishing industry this is leading to difficulties in adjusting fishing practices to better align with the bycatch objective of the JFS and maintain economically viable operations. There are certain TCMs designed to reduce bycatch and protect juvenile fish that can inadvertently limit the capture of marketable fish above the Minimum Conservation Reference Size (MCRS), leading to economic challenges for fishers. For instance, in the Scottish demersal trawl fishery, implementing specific gear modifications intended to exclude undersized fish has also resulted in the unintended loss of commercially valuable species like haddock and whiting (Stakeholder, Pers. Comm.). Such reductions in target catch can discourage fishers from adopting new bycatch reduction technologies due to potential losses of income.<sup>5</sup>

This brief aims to examine the barriers to adopting selective fishing gear in UK waters, with a focus on technical conservation measures, regulations, and approval processes. It explores how current regulatory frameworks restrict geographic flexibility and innovation, ultimately hindering the uptake of more selective fishing gears. The aim is to develop evidence-based recommendations that promote selective gear adoption, modernise the UK's post-Brexit fisheries management framework, and reduce bycatch and discarding. The challenges and opportunities discussed are drawn from conversations with a range of UK fisheries stakeholders, including DAs, public bodies, and skippers. This report was developed using a qualitative approach combining targeted literature and policy review with insights drawn from informal discussions and correspondence with stakeholders across government, industry, and the research community. As a result, not all information presented is accompanied by a formal citation, particularly where observations reflect stakeholder perspectives or unpublished experience shared with the authors. The aim is to provide a grounded, practice-informed view of current gear innovation processes and challenges within the UK context.

<sup>&</sup>lt;sup>\*2</sup> For example, retained regulation  $\underline{1224/2009}$  regarding fisheries control, and EU  $\underline{2018/2034}$  which is referred to in current <u>MMO guidance</u> for the Irish Sea but has since been repealed by the EU.



#### **Regulatory Barriers**

Although the FA 2020 established a new domestic framework, many TCMs remain largely unchanged post-Brexit, having been carried over wholesale from EU legislation with limited review or adaptation. This has resulted in limited updates to gear and effort regulations, despite ecological and operational changes in UK fisheries post-Brexit, such as shifting species distributions and emerging bycatch concerns, that may warrant more adaptive management. In the area of TCMs, such as gear specifications and minimum conservation reference sizes (MCRS), EU regulations have tended to maintain the status quo. This is partly due to the shared nature of fish stocks between the UK and EU and a perception among some fisheries managers and policymakers that existing rules remain broadly effective.

There remains a sense of industry frustration regarding the pace of progress towards full fisheries independence since Brexit.<sup>7</sup> To date, limited progress has been made by the UK in reforming or replacing inherited TCMs, or in developing new regulations that are harmonised across UK jurisdictions. This is particularly relevant given concerns that many existing measures – such as those relating to gear types and MCRS-may lack the flexibility needed to accommodate fishery-specific contexts, address evolving bycatch challenges, or foster innovation in gear development.

While many TCMs were originally with UK involvement under the EU framework and are now retained under the FA 2020, this does not preclude opportunities for targeted reform. Whilst a full regulatory overhaul may not be necessary, there is clear scope for the UK to pursue strategic, evidence-based adjustments to specific measures where they are likely to deliver the greatest benefit. Additionally, there appears to be ongoing uncertainty within some DAs regarding which authority is responsible for approving new gear designs in the post-Brexit context. It should be acknowledged, however, that the limited UK-specific regulatory change may partly reflect a lack of demand for such reform. For instance, since Brexit, there appear to have been few formal requests to DAs to amend existing TCMs. As a result, there has been little regulatory movement in this area, and the UK continues to rely, at least for now, on measures inherited from the EU Common Fisheries Policy, including both broader CFP provisions and specific technical measures. Compounding current uncertainties is a lack of shared understanding across the DAs about how formal requests for gear changes should be developed and advanced. For example, in Northern

Ireland, there is a preference for industry-led gear development in collaboration with industry-based scientists, whereas in Scotland, gear trials are often conducted using government research vessels or charter vessels with government scientists onboard. Each of these approaches has potential benefits and drawbacks. For instance, industry-led initiatives may foster buy-in and practicality, while government-led trials can offer consistency and greater scientific resource. However, it is unclear to what extent DAs have fully assessed or understood these trade-offs, which may further affect the pace and quality of decision-making in this space.

In some instances, EU regulations retained by the UK have become outdated. For example, the assimilated Council Regulation on fisheries control for ensuring compliance with the rules of the common fisheries policy (1224/2009)<sup>9</sup> has since been updated by the EU,<sup>10</sup> while the UK has retained the older version. As a result, UK vessels operating in both UK and EU waters need to comply with both regulatory frameworks, neither of which has been specifically tailored to UK fishing contexts or waters. Additionally, the complexity of the UK regulatory system further slows adaptation. Some gear regulations may require formal legislative changes, while others can be modified through license conditions. This distinction creates potential inconsistencies in how updates are implemented, making it more difficult for regulations to keep pace with evolving fisheries management needs. This uncertainty was evident in speaking with those working in the DA fisheries divisions, as some expressed confusion about how to navigate and implement necessary changes. Another underlying barrier is the limited capacity and regulatory expertise within relevant authorities. This can slow decision-making and limit the ability to proactively revise technical measures or evaluate innovative approaches. Strengthening institutional capacity would not only support more responsive regulation but also help identify and remove unnecessary or outdated requirements.

#### **Gear Approval Processes**

The current lack of a clear, standardised approval process for new fishing gear in the UK may be contributing to stagnation in gear innovation and the ability of the UK industry to fish more sustainably. Since Brexit, no gear trials have advanced beyond the experimental stage. This may not be due to formal regulatory barriers, but due to uncertainty and complexity in the approval process. However, it also appears that there has been limited push from industry to formally propose new gear changes. Before Brexit, the EU provided a more structured pathway via the Scientific, Technical and Economic Committee for

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Fisheries (STECF).<sup>11</sup> The absence of newly approved gear designs is not unique to the UK. There also appears to have been little development of gear approval processes through STECF, suggesting that wider systemic factors may be at play.<sup>12</sup>

The UK now appears to take a case-by-case approach to gear trialling, development and adoption, aiming to remain flexible and responsive rather than imposing rigid criteria. However, this flexibility seems to have emerged more by default than by deliberate design, reflecting the absence of a clearly define regulatory pathway. While such an approach may support innovation, it can also create uncertainty among fishers and gear developers, who lack a transparent or repeatable process for gaining regulatory approval.

The absence of successful post-Brexit gear approvals (or even attempts) makes it difficult to assess whether the current system is functioning effectively. Anecdotal evidence suggests that the lack of applications may stem from an inability to navigate the system, rather than from a lack of interest in innovation. A clearer framework, supported by example pathways or guidance, could improve confidence and uptake. As such, clarifying and formalising the approval process should be a priority if the UK hopes to support more strategic, innovation-led bycatch reduction. There is, however, a risk that efforts to establish a standardised approval process for new gear designs may result in an overly rigid system that lacks the flexibility to accommodate diverse trial contexts. A more effective approach may therefore be to develop a bespoke framework offering multiple, clearly defined pathways to approval. These could also be tailored according to the nature of data collection involved in testing a gears efficacy. For example, whether the evidence derives from short-term formalised trials conducted on commercial vessels, longer-term derogated research vessels.

A key challenge in the adoption of new fishing gear is the lack of clarity on what constitutes sufficient evidence to justify full implementation. Stakeholders expressed uncertainty about the threshold of proof required to demonstrate that a gear modification is both effective and viable at scale. This ambiguity slows progress, as fishers and researchers struggle to determine when trials and pilot projects have generated enough data to be considered robust and trigger regulatory change by policymakers - if the results highlight change is necessary and reasonable within the bounds of the FA 2020 and the JFS. Accountability

mechanisms exist for government-funded trials, though in some cases, the data collected has not met the required standards for use (Stakeholder, Pers. Comm.).

Compounding the ambiguity issue is the aforementioned absence of clear guidance from the DAs regarding who has the authority to make these decisions. While the UK Fisheries Science and Advice Partnership (UKFSAP) was suggested by stakeholders interviewed as an option to take on this role, there appears to be no widely understood process for assessing evidence and approving new gear for broader use. This lack of transparency creates uncertainty for those seeking to drive innovation in the sector.

#### **Regional Disparities**

The issue of regional disparities in fisheries management is particularly evident when examining the approval processes for fishing gear across the UK. A notable case study includes dual cod-end trawls in the Irish Sea and North Sea. In the Irish Sea, fishers have the option to use dual cod-end trawl gear, which improves separation of nephrops and whitefish utilising two cod-ends. However, in the North Sea, the same gear is not permitted due to regional regulatory differences, despite this gear being better suited to this nephrops fishery. The reason that it is more suited to the North Sea nephrops fishery is that there are marketable sized whitefish caught and retained as bycatch. In the Irish Sea, however, the focus is on smaller nephrops, and whitefish bycatch is generally not marketable, therefore rendering the dual cod-end trawl less worthwhile compared to more standard gears. The regulatory differences in many cases stem primarily from variations in regional gear specifications under retained EU TCMs, as well as the lack of a streamlined UK-wide approval mechanisms that allow for cross-regional adoption. For example, technical regulations specific to the North Sea may not yet accommodate dual cod-end designs, and any deviation from established gear configurations often requires extensive justification and consultation across administrations.

This example highlights how conservation measures, rather than biological limitations, can restrict fishers' ability to adapt innovative gears across different waters, even when those gears reduce bycatch and discards. At the same time, outdated gear regulations in the Northern Irish sector of the Irish Sea present further barriers to innovation and sustainable fishing practices. Rules introduced to protect cod stocks mandate specific gear modifications to reduce cod bycatch, but as cod stocks have moved out of the region, these restrictions have become obsolete. Yet, fishers are prohibited from modifying their

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gear to better suit the current bycatch species portfolio, even when doing so would improve selectivity and reduce discards. This is largely due to rigid approval processes and inflexible technical conservation requirements that remain largely unchanged since becoming assimilated law. For instance, Schedule 1 of the Technical Conservation Regulation (EU) 2019/1241<sup>13</sup> contains prescriptive gear specifications by region and gear type, limiting the use of alternative gear designs unless formally amended. In practice, this means that even minor gear modifications often require new or amended regulations to be developed, which must be justified with evidence, undergo consultation, and gain agreement across relevant UK administrations. Without a defined UK-wide approval pathway, this process is slow and opaque.

Some existing systems in the UK do allow for regulatory adjustments to be made more easily based on emerging evidence. Existing systems in Wales allow for regulatory adjustments based on emerging evidence, but their application remains limited in the rest of the UK. For example, the Whelk Fishing Permit (Wales) Order<sup>14</sup> enables fishery managers to vary permit conditions to change catch limits and MPA feature-based spatial fishing restrictions without amendments to legislation. Additionally, Scotland has implemented Real-Time Closures and Real-Time Reporting in demersal fisheries to support the recovery of North Sea cod.<sup>15</sup> These adaptive tools allow authorities to temporarily close fishing areas based on catch data, reducing bycatch, helping meet conservation goals. Industry groups such as the Scottish Fishermen's Organisation have also developed realtime reporting studies to explore how timely information sharing between fishers can improve bycatch avoidance and facilitate more responsive management.<sup>16</sup> However, the application of these adaptive management systems remains limited across the UK, meaning that existing procedural constraints, combined with regulatory text that lacks builtin flexibility or exemption mechanisms, continue to hinder both the uptake of innovative gear and fishers' ability to respond adaptively to shifting stock dynamics.

The impact of these regional disparities is somewhat compounded by the varying approaches taken by the DAs regarding gear tech regulations in the UK. Each DA operates under its own regulatory framework (bar reserved matters), leading to different requirements for gear approval and testing. While some level of regional specificity is necessary to account for differences in fish populations and ecosystems, this creates challenges for the adoption of innovative and effective fishing gears, as fishers who operate across regions incur additional costs and delays through needing to navigate multiple approval processes. A more consistent approach across the UK could help mitigate these challenges. If a gear is

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approved in one region after extensive testing, other regions could consider a shorter validation trial, rather than restarting the approval process from scratch. This would streamline the regulatory process, reduce duplication of effort, and be more cost effective. It may also encourage faster adoption of innovative, sustainable gear solutions across the UK. By creating a more cohesive regulatory framework, the UK could foster greater efficiency in gear development and ensure that all regions benefit from the most effective and sustainable fishing practices.

#### **Economic and Practical Challenges**

There are several key challenges in adapting to regulatory and technological changes. Implementing innovative fishing gear technologies often requires a trial period during which fishers may experience reduced earnings whilst the gear is adjusted to operate optimally which in some cases may take longer than a chartered trial period. Additionally, the cost of the gear itself is often a large financial burden. Securing financial support to offset these potential losses is challenging, as state aid regulations, influenced by World Trade Organization (WTO) rules,<sup>17</sup> can restrict compensatory payments for loss of income during periods of adoption and uptake.

Historically, when fish stocks were more abundant and profit margins higher, fishers had greater flexibility to experiment with new methods without jeopardising their livelihoods. However, reductions in whitefish quotas and shifts from share-based crew payments<sup>18</sup> to higher fixed salaries<sup>19</sup> have tightened financial margins, making fishers more risk-averse and less inclined to adopt unproven technologies that may take time to learn how to use optimally. Another financial consideration is the potential pressure from market-based drivers, such as eco-labelling requirements, which may compel fishers to adopt specific gear practices to meet sustainability standards.

Addressing these barriers is crucial for fostering innovation within the UK fishing industry. Exploring alternative funding mechanisms, such as industry-led initiatives, private investments, or tailored financial instruments, could provide the necessary support for fishers to trial and adopt new technologies without bearing undue financial risk. For instance, the UK Seafood Fund's Science and Innovation pillar included two distinct funding streams: the Seafood Innovation Fund (SIF) and the Fisheries Industry Science Partnerships (FISP) scheme. These have supported numerous projects focused on gear innovation and bycatch reduction by offering grants to collaborative partnerships between industry, academia, and technology developers.<sup>20</sup>

Currently, there is no single, accessible resource listing all approved fishing gears and their permitted locations around the UK. The absence of such a resource has been noted by stakeholders to create significant uncertainty, particularly among fishers, making it difficult to determine which gear configurations are approved (and legal) in different areas. Similarly, information around obtaining dispensation<sup>\*3</sup>, additional quota during trials and gear derogations remains largely opaque and a common complaint in the industry that puts added pressure on POs to navigate such information. A standardised, publicly available database and information centre would likely help reduce confusion and ultimately streamline compliance. This may be a task that a non-departmental public body such as Seafish could undertake. Additionally, fishers may struggle to access and understand the current regulations due to their complexity and fragmented presentation. A clear, user-friendly approach to policy communication is needed to ensure fishers can easily navigate the rules governing their operations.

The process for requesting dispensation and conducting gear trials is often unclear and inconsistent. Establishing a more structured and well-publicised framework for these processes would enhance accessibility and transparency, enabling fishers to adopt more effective and sustainable fishing practices. However, any efforts to streamline regulatory processes must be carefully balanced against the need for checks and balances to maintain regulatory robustness. While simplifying procedures could reduce administrative burdens, excessive streamlining could weaken oversight and enforcement. A cautious, measured approach is necessary to ensure that regulatory reforms improve efficiency without compromising the effectiveness of fisheries management.

The current drive towards the implementation of REM to improve monitoring and surveillance of UK vessels may be an opportunity to streamline the rollout of technical measures from gear innovation through to implementation and industry-wide use. By positioning REM as a tool that provides verifiable evidence to enable faster approvals and facilitate industry-driven problem-solving, regulators could create incentives for voluntary uptake. However, it is important to acknowledge the varying approaches to REM implementation across the UK's DAs, each of which presents its own set of challenges. Insights from the recent consultation on REM in English waters<sup>21</sup> highlight both the potential benefits and barriers to adoption, which should be carefully considered in policy development. While there is broad support from non-industry actors that REM can be a tool

<sup>\*&</sup>lt;sup>3</sup> An official exception granted by authorities so someone can legally use a different or experimental fishing gear, often for trials, innovation testing, or under specific conditions.



to improve sustainable fisheries management, others prefer an initial voluntary phase or even a pause to REM roll-out altogether.<sup>22</sup> Additionally, concerns were raised about the potential for unjustified targeting of certain fisheries and the need for incentives, such as additional quota, to support industry uptake.

#### **Recommendations and Conclusions**

A more effective regulatory framework could be achieved through fast-track approval processes under specific conditions, ensuring that efficiency gains do not come at the expense of robustness. For instance, vessels already equipped with REM could be prioritised for expedited approvals for gear trials or regulated new gear use, as their monitoring capabilities can provide added assurance of compliance. Encouraging industry-led adoption of REM could therefore serve as a key mechanism for improving regulatory efficiency. By implementing clear conditions for streamlined approvals, regulators could reduce administrative delays while maintaining oversight.

Structured and meaningful engagement with the fishing industry is also critical to ensuring that regulations reflect practical realities. Strengthening collaboration between regulators and fishers would help align policy decisions with on-the-ground operational challenges, fostering greater compliance and industry buy-in. Additionally, increasing regulatory expertise and staffing would enhance the ability to assess and challenge unnecessary regulatory burdens. Regulatory and policy staff should be supported by individuals who have technical expertise in fishing gear so that the nuances of gear technology are understood as regulatory guidance is being drafted.

Strengthening the role of POs in regulatory engagement could also help build industry-wide consensus and support for new initiatives. By working through POs, regulators can better communicate policy changes, gather industry input, and foster a more coordinated approach to fisheries management. This structured engagement could improve regulatory outcomes while ensuring that policy decisions are informed by industry expertise and practical experience.

A key opportunity for the UK's fisheries management system is the development of an approval process tailored specifically to domestic needs. The current system still retains elements of EU regulations that are no longer relevant or effective in the UK context. While the process of reviewing outdated EU regulations is lengthy, it presents a chance to



establish a regulatory framework that better aligns with the operational realities of UK fisheries.

Expanding the use of adaptive management tools is another critical area for improvement. Existing systems in Wales and Scotland allow for regulatory adjustments based on emerging evidence, but their application remains limited in the rest of the UK. Strengthening the role of evidence-based policy adjustments can support more effective, flexible regulations that evolve alongside industry needs.

Cross-jurisdictional coordination also plays a vital role in ensuring effective fisheries management, particularly for shared stocks. While the UK's DAs already engage in regular discussions, there is an opportunity to formalise cooperation around a structured pipeline for gear innovation through to regulatory adaptation. By establishing a clearer, more coordinated framework for developing and approving new fishing gear, policymakers can ensure that innovative solutions are tested, refined, and implemented consistently across jurisdictions. This approach would help streamline regulatory processes while promoting the adoption of more sustainable and effective fishing practices.

The regulatory landscape for gear innovation in the UK presents both opportunities and challenges. Addressing the issues noted herein require a cohesive, flexible approach that balances the need for robust oversight with the desire for streamlined processes. This approach could be instigated through adaptive management tools, the development of tailored and clearly defined approval processes, and increased and consistent industry engagement. By improving policy transparency, creating more structured frameworks for gear trials and derogations, and fostering cross-jurisdictional cooperation, the UK can improve the gear approval process, allowing for greater flexibility to address bycatch and discarding and better align with the requirements of the FA 2020, including the bycatch objective.



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