



Fishery Improvement Project (FIP) Implementation Report - Action Item

1.4

Action Item 1.4 – Data Sufficiency & Reporting Quality
Brazil South Atlantic Swordfish Longline (Hilo) FIP

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1. Purpose and Scope

This report documents the implementation of Action Item 1.4 under the Brazil South Atlantic Swordfish Longline (Hilo) Fishery Improvement Project (FIP). The objective of this action item is to improve data sufficiency, accuracy, and reliability through the operational adoption of onboard digital weighing systems. This action directly supports improved national and regional fisheries management by strengthening catch and bycatch weight reporting provided to the Brazilian Ministry of Fisheries and Aquaculture (MPA) and the International Commission for the Conservation of Atlantic Tunas (ICCAT).

2. NOAA Fisheries Guidance on Observer Coverage and Data Quality

NOAA Fisheries, through its National Observer Program, identifies accurate catch accounting as a foundational requirement for science-based fisheries management. NOAA emphasizes that observer coverage targets are fishery-specific and that high-quality data can be achieved through a combination of human observers and electronic tools, particularly in fisheries where full observer coverage is logistically impractical.

NOAA guidance highlights that direct weight measurement provides more reliable biomass estimates than derived values obtained through length-weight conversions. In longline fisheries, where large individual fish are handled sequentially and bycatch may not be retained, electronic weighing systems are recognized as an effective tool to enhance data precision and reduce systematic bias.

3. Observer Coverage Constraints in Brazilian Pelagic Longline Fisheries

Pelagic longline fisheries operating in the South Atlantic face structural constraints that limit observer deployment, including long trip durations, dispersed landing sites, and vessel design limitations. NOAA acknowledges that under such conditions, improvements to self-reported data quality represent one of the most effective pathways to strengthen fisheries management outcomes.

By improving the accuracy of reported catch weights at the vessel level, fisheries can partially offset lower observer coverage while maintaining scientifically credible data streams.

4. Transition from Length-Weight Estimation to Direct Biomass Measurement

Historically, Brazilian swordfish catch reporting has relied heavily on length-weight conversion factors to estimate biomass. While scientifically valid, NOAA and ICCAT both recognize that such conversions introduce uncertainty due to variability in fish condition, processing methods, and seasonal factors.

Direct onboard weighing eliminates these sources of error, resulting in improved catch-per-unit-effort (CPUE) indices, more accurate total removals, and stronger inputs to ICCAT stock assessment models.

5. Implementation of Action Item 1.4

In accordance with the approved Implementation Plan for Action Item 1.4, Hilo Fish Company has installed a marine-grade digital crane scale onboard one participating Brazilian longline vessel in Itajai, SC, Brazil. Vessel captain and crew received training on proper use, calibration, and electronic recording of weights.

The system allows for direct weighing of retained swordfish as well as bycatch at the rail, minimizing handling stress and improving data integrity. This represents the first operational deployment of this technology under the FIP and establishes a scalable model for broader adoption.

Vessel Name: AUGUSTO C

Vessel Flag: Brazil

Brazilian RGP#: SC-0032555-7

Owner: Jose Augusto de Castro



Prix Tendam 200 Digital Scale



Digital Scale Installation



Photo of Installed Digital Scale



6. Benefits to Brazilian MPA and ICCAT

Improved catch weight accuracy enhances the quality of national fisheries statistics submitted by Brazil to ICCAT. More precise biomass data improves stock assessment performance, strengthens management advice, and supports precautionary, science-based decision-making.

This action directly supports ICCAT objectives related to improved data reporting, transparency, and continuous improvement among Contracting Parties.

7. Alignment with FisheryProgress FIP Expectations

FisheryProgress emphasizes measurable, on-the-water improvements and verifiable implementation of FIP actions. The installation and use of onboard digital scales constitutes a tangible operational change that improves data quality, supports management systems, and aligns with internationally recognized best practices.

This action demonstrates credible progress toward improved fisheries governance and data sufficiency, consistent with FisheryProgress guidance for progress ratings.

Additional Context: Status of Brazil’s Swordfish Fishery, ICCAT Reporting, and Data Gaps

Brazil plays a significant role in the South Atlantic swordfish (*Xiphias gladius*) fishery and is consistently identified as one of the major contributing nations to total removals from this ICCAT-managed stock. Scientific analyses of spatial catch patterns and fleet behavior confirm Brazil’s importance within the South Atlantic longline fishery, underscoring the country’s responsibility to provide accurate and comprehensive fisheries data to support international management efforts.

Despite this prominent role, the International Commission for the Conservation of Atlantic Tunas (ICCAT) has repeatedly identified limitations in the completeness and consistency of data submitted by Contracting Parties, including Brazil. Reports from ICCAT’s Standing Committee on Research and Statistics (SCRS) highlight persistent gaps in Task I (nominal catch) and Task II (effort, catch-per-unit-effort, and size-frequency) datasets, as well as limited information on discards and bycatch. These data limitations introduce uncertainty into stock assessments and reduce the precision of management advice.

Observer coverage remains a key challenge for pelagic longline fleets operating under ICCAT, particularly in tropical and subtropical regions. Available international summaries indicate that observer coverage levels for Brazilian longline fisheries are limited or not consistently reported, constraining the availability of independently verified catch, bycatch, and biological sampling data. While Brazil has made progress through the adoption of



electronic logbooks and improvements in reporting systems, monitoring coverage remains insufficient to fully address scientific and management data needs.

In this context, the adoption of fisheries monitoring and data-quality standards aligned with NOAA Fisheries guidance represents a practical pathway to strengthening Brazil's fisheries management framework. NOAA emphasizes that accurate catch accounting, direct weight measurement, and standardized reporting protocols are essential components of science-based fisheries management, particularly in fisheries where observer coverage is constrained. The implementation of onboard digital weighing systems directly addresses known sources of uncertainty associated with length-to-weight conversions and improves the reliability of catch and bycatch biomass estimates.

Improved data quality is especially important following ICCAT's recent adoption of a harvest strategy for Atlantic swordfish, which relies on robust catch, effort, and biological data to evaluate stock status and management performance. By strengthening weight accuracy and reporting consistency at the vessel level, Brazilian fisheries can enhance the quality of national submissions to ICCAT, support more reliable stock assessments, and contribute to more effective and precautionary management of the South Atlantic swordfish stock.

8. Conclusion

The implementation of Action Item 1.4 represents a meaningful advancement in fisheries data quality for the Brazil South Atlantic swordfish longline fishery. By adopting NOAA-aligned best practices for accurate weight reporting, the FIP strengthens national and regional management frameworks and contributes to the long-term sustainability of the resource. Hilo Fish Company and D'Ascola Seafoods are committed to installing more digital scales throughout the fleet in accordance with NOAA recommendations. It was decided that a pilot program should be established first to understand the installation and use challenges of digital scales.



References

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