



**Final Recommendation Report –
Outlining the Key requirements for the
Panama Fisheries to gain acceptance on
to the IFFO RS Improver Programme.**

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1 - Foreword

The IFFO RS programme has developed an organised IFFO RS Improver Programme, which is aligned to the full IFFO RS certification programme. The rationale behind this initiative is to encourage marine ingredient factories that, at present, would be unable to meet the IFFO RS Standard, either because of a lack of fisheries management, or factory infrastructure and operational issues, to the implementation of improvements that would allow the marine ingredient manufacturer to eventually comply with the IFFO RS Standard. The agreed route decided by the IFFO RS Governance Board was to support these organizations through a structured IFFO RS Improvers Programme which will insist that all applicants once accepted on to this process will need to have a defined improvement journey, with agreed time frames and milestones that will eventually led them to meet the requirements of the IFFO RS Standard.

2 - Introduction

The Panama Marine Ingredient manufacturers do not wish their factories to be part of this IFFO RS improver programme, as they have spent time and resource already to achieve the good manufacturing practice certificate GMP+, which is a prerequisite requirement for full IFFO RS certification. In addition an assessment has been undertaken back in 2014 and RS Standards can verify that only the fisheries that are part of this improver programme will be utilised by the applicant' fish meal manufacturing unit.

The area which the applicant needs to spent time and effort will be on their supplier fisheries and this document will form part of their official application to IFFO RS to gain acceptance onto the IFFO RS IP programme for the continuing improvement and development of these fisheries.

The following document uses the results of the initial IFFO RS whole fish fishery assessment conducted on the Panama anchoveta and thread herring fisheries to produce an estimated fishery improvement timeline. The purpose of the actions described in the timeline is specifically to increase the compliance of this fishery with the requirements of the IFFO RS assessment, and ultimately to achieve approval against the IFFO RS Standard.

The summary table below indicates the estimated compliance rating against each of the 11 IFFO RS assessment sections, if the actions recommended in the main body of the document are achieved in the time frame suggested. Based on the information currently available (and some minor assumptions in relation to control and enforcement), the fishery may be able to achieve IFFO RS approval within 3 years, and be highly compliant within 5 years. The main limiting factor is the development of reference points or proxies which can be used to inform the management of the fishery – which in turn will require improved fishery-independent data collection and analysis. It may be possible to accelerate the process if conservative and precautionary technical measures are implemented in the interim.

Finally, this work is based on the initial IFFO RS assessment, which itself is based on the information available to the Certification Body (CB) - SAI Global's assessment team. If more information on the current management and scientific status of the fishery is forthcoming, it may change the timeline and/or recommended actions.

3 - Summary Table of Milestones to meet the IFFO RS Raw Material Approval Criteria

The following table summarises the estimated IFFO RS compliance rating of the Panama small pelagic fishery at specified durations after the acceptance of the fishery into the IFFO Fishery Improver scheme. This progress is examined in more detail along with a proposed surveillance schedule in section 6.

IFFP RS Section	Current Score	Immediate within 6 months	End of Year 1	End of Year 2	End of Year 3	End of Year 4	End of Year 5
A1	Yellow	Green	Green	Green	Green	Green	Green
A2	Yellow	Yellow	Yellow	Green	Green	Green	Green
A3	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Green
B1	Yellow	Yellow	Yellow	Green	Green	Green	Green
B2	Red	Red	Red	Red	Yellow	Yellow	Green
C1	Red	Red	Red	Red	Yellow	Yellow	Green
D1	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green
D2	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Green
D3	Red	Red	Yellow	Green	Green	Green	Green
E1	Red	*	Green	Green	Green	Green	Green
E2	Yellow	*	Green	Green	Green	Green	Green

*Scoring in these sections is dependent on the information provided – see the relevant sections below for details.

Rating key

Colour	IFFO RS Rating
Green	Highly Compliant to IFFO RS Raw Material Approval Criteria
Yellow	Medium Compliance to IFFO RS Raw Material Approval Criteria
Red	Low Compliance to IFFO RS Raw Material Approval Criteria

4 - Fishery Action Plan, October 2015

In response to an earlier draft of this document, a stakeholder meeting was held in Panama City on the 9th October 2015. The main result of this meeting was the production of a Memorandum of Understanding (MOU) between the Panama Authority of Aquatic Resources (ARAP), Animalfeeds, Inc., PROMARINA, S.A., Pesquera Taboguilla S.A., and CEDEPESCA. This MOU represents the Fishery Action Plan required by the IFFO RS Improvers Programme Acceptance Mechanism, as it sets out which organisation is to be responsible for meeting each of the progress requirements detailed below. Additionally, the signatories to the MOU represent a diverse group of stakeholders, representing government, industry and an NGO:

ARAP - The Aquatic Resources Authority of Panama is the primary governmental body with jurisdiction over fisheries management in Panama. ARAP's vision is "To be competitive in the sustainable development of aquatic resources at the national and international levels".

Animalfeeds, Inc; PROMARINA S.A.; Pesquera Taboguilla - Fishmeal and fishoil producing companies representing the catch and processing industry.

CEDEPESCA - The Centre for Development and Sustainable Fisheries is a Latin American non-profit organisation founded in 1997 to promote good fisheries practices, research and exploitation. CEDEPESCA is the organisation currently responsible for the FIP plan initiated by the SFP in 2011.

The contents of the MOU in relation to each section of the IFFO RS assessment is summarised below, in a section of each table labelled "Improvement status". This section will continue to be updated as the fishery moves through the improvement process, and will eventually indicate changes in estimated compliance rating.

5 - Analysis of Initial IFFO RS Fishery Assessment Reports of the Panamanian Fisheries

A1	The management of the fishery must include a legal and administrative basis for the implementation of measures and controls to support the conservation of the fishery.
Determination from initial assessment	<i>There is a governmental body established with responsibility for the management of Panamanian fisheries, along with laws empowering it to do so. However, there was limited information available to the CB's assessment team with regards to the functions and responsibilities of the management authority in practice.</i>
Core improvements	<ul style="list-style-type: none"> Provide additional information on the roles, responsibilities, and structure of the management bodies identified by the initial assessment. It is very likely that providing a clear, detailed explanation of the management framework would improve the rating of this section.
Information Source	<ul style="list-style-type: none"> Animal Feeds to make information available
Proposed Timeline	Provide information – immediate within 6 months.
Improvement Status	9/10/15 - (MOU) An organisational chart of the Fishery Administration of Small Pelagics in Panama will be provided by Animalfeeds and Promarina S.A. within 6 months.

A2	Fisheries management should be concerned with the whole stock unit over its entire area of distribution and take into account fishery removals and the biology of the species.
Determination from initial assessment	<i>There is some limited evidence to suggest that Panamanian anchoveta represents a discrete biological stock, but there are no genetic studies. Landings data are collected but the CB's assessment team was unable to determine whether these include all removals.</i>
Core improvements	<ul style="list-style-type: none"> Estimate discard rates, and the level of bycatch of small pelagic species in other fisheries, and include these in the stock assessment process if they are significant. Conduct a study to determine whether there are two species of thread herring in the catch, and if so what the proportions are and whether they should be managed as separate stocks. Conduct an updated study to determine the extent of the biological stocks – particularly to confirm that no international coordination is required on management measures.
Information Source	<ul style="list-style-type: none"> ARAP(Panama) will seek to work with the FAO
Proposed Timelines	Estimate discarding and bycatch rates – 1 year Conduct a study on thread herring – 2 years

	Conduct a stock distribution study – 2 years
Improvement Status	9/10/15 - (MOU) CEDEPESCA and ARAP will continue throughout the Observers-On-Board programme to estimate discard and bycatch rates, and will generate a report using the collected data. CEDEPESCA will also produce a report examining whether or not there are two species of herring present in the catch. The stakeholder committee will coordinate with the FAO to encourage a study into the extent of the biological stocks.

A3	Management actions should be based on long-term conservation objectives
Determination from initial assessment	<i>A long-term Fishery Improvement Project plan is in place, but there is limited evidence of specific management objectives or technical measures based on those objectives.</i>
Core improvements	<ul style="list-style-type: none"> • Implement an official management plan for the fishery which includes objectives explicitly related to the long-term sustainability of the resource. This could be the plan as recommended an ARAP document. • Develop reference points or proxies for each species and use these as a basis for management. • Manage the fishery in line with the management plan and reference points to accumulate evidence that the plan is followed.
Information Source	<ul style="list-style-type: none"> • ARAP Document.
Proposed Timelines	Implement a management plan – 2 years
	Develop reference points or proxies – 3 years
	Manage the fishery in line with the plan and reference points – 5 years
Improvement Status	9/10/15 - (MOU) ARAP will provide a copy of the management plan.

B1	Research in support of fisheries conservation and management should exist.
Determination from initial assessment	<i>Research in support of the conservation and management of the stock is conducted, but is exclusively fishery-dependent, and does not allow stock assessments to be conducted without a high level of uncertainty.</i>
Core improvements	<ul style="list-style-type: none"> • Increase the amount of data collected during fishery-dependent surveys, particularly otolith sampling to provide growth rate estimates. • Introduce fishery-independent surveys, primarily hydroacoustic surveys. • Utilise the results of these surveys in stock assessments, to produce estimates of stock sizes, and to generate reference points or proxies (see A3).

Information Source	<ul style="list-style-type: none"> ARAP working in collaboration with the FAO to conduct exploratory trips, use observers on board the fleet and documentation of findings
Proposed Timelines	Conduct otolith sampling – 1 year
	Introduce fishery-independent surveys – 2 years
	Utilise the results and develop estimates of stock sizes and reference points – 3 years
Improvement Status	9/10/15 - (MOU) ARAP will continue with the ‘exploratory trips programme’. The stakeholder committee will encourage the FAO to support additional research efforts.

B2	Best scientific evidence available should be taken into account when designing conservation and management measures.
Determination from initial assessment	<i>Historically there has been no scientific advice provided for the fishery. It is not yet known whether advice published by CeDePesca in 2015 will be implemented, and if so when. The available evidence suggests that specific management measures are limited.</i>
Core improvements	<ul style="list-style-type: none"> Implement the ARAP advice as rapidly as is feasible which is agreed with by CeDePesca. Ensure scientific recommendations are made regularly – preferably annually to enable the introduction of an annually-estimated Environmentally Advisable Catch. Manage the fishery in line with scientific recommendations to accumulate evidence that they are followed.
Information Source	<ul style="list-style-type: none"> ARAP Document.
Proposed Timelines	Implement CeDePesca advice – Varying, see all other sections.
	Ensure advice is regular, particularly total catch advice – 3 years (requires reference points/proxies)
	Accumulate evidence – 5 years
Improvement Status	9/10/15 - (MOU) This improvement is intended to be met via the management plan for section A3.

C1	The precautionary approach is applied in the formulation of management plans.
Determination from initial assessment	<i>Due primarily to limited information on the management process, the CB’s assessment team does not consider the precautionary approach to be applied in this fishery.</i>
Core improvements	<ul style="list-style-type: none"> Ensure the precautionary approach is followed in the development and implementation of all other fishery management aspects – particularly by ensuring technical measures are sufficiently conservative when information is limited.

Information Source	<ul style="list-style-type: none"> Currently an agreement by the Pelagic Committee which is made up with representatives from ARAP/CeDePesca/Panama Industry/ Other key stakeholders is in place which has limited the number of licensed vessel in this fishery to 20.
Proposed Timeline	General improvement in line with other sections – likely to become medium once all other sections are medium or higher. Progress could be made sooner with the implementation of highly conservative technical measures to reflect the poorly-understood stocks.
Improvement Status	9/10/15 - (MOU) The stakeholder committee will provide a copy of the “Executive Decree for the regulation of the fishery of small pelagics”, which forms the legal basis for the management of the fishery.

D1	The level of fishing permitted should be set according to management advice given by research organisations.
Determination from initial assessment	<i>There is limited evidence that fishing effort is regulated with the objective of achieving specific levels of fishery removals; however, the only stock assessment known to have been conducted on Panamanian Pacific anchoveta has tentatively concluded that the current level of fishing is sustainable.</i>
Core improvements	<ul style="list-style-type: none"> Develop estimates of stock size and reference points or proxies. Ensure a scientific organisation produces a regular recommendation of the appropriate level of fishing – ideally, an annual recommendation of the Ecologically Appropriate Catch, as recommended in the ARAP document. Ensure that fishery removals do not exceed this recommendation, and accumulate evidence that this is consistently the case.
Information Source	<ul style="list-style-type: none"> ARAP Document
Proposed Timelines	Develop stock size and reference point estimates – 3 years
	Ensure scientific advice is provided based on these estimates – 3 years onwards
	Accumulate evidence that fishery removals are in line with recommendations – 5 years
Improvement Status	9/10/15 - (MOU) This improvement is intended to be met via the management plan for section A3.

D2	Where excess fishing capacity exist, mechanisms should be in established to reduced capacity to allow for the recovery of the stock to sustainable levels.
Determination from initial assessment	<i>Although a licensing regime is in place, there was insufficient evidence to determine whether this is used to maintain fishing capacity at sustainable levels.</i>
Core improvements	<ul style="list-style-type: none"> Provide additional information on the process by which licenses are awarded, whether they are required for all vessels (industrial and artisanal), and whether there is any restriction on the total number. Develop reference points and establish evidence that the fishery is consistently within these – i.e. that there is not excess, unregulated capacity in the fishery.

Information Source	<ul style="list-style-type: none"> Current legislation is in place and more legislation relating to this area is pending (need reference document)
Proposed Timelines	Provide additional information – Immediate within 6 months – Possible medium at this stage.
	Develop reference points and stay within them – 5 years
Improvement Status	9/10/15 - (MOU) Additional information for the scoring of this section will be provided in the form of the Executive Decree described under C1.

D3	Management measures should ensure that fishing gear and fishing practices do not have a significant impact on non-target species and the physical environment.
Determination from initial assessment	<i>The CeDePesca stock assessment of 2015 appears to be the first significant examination of the impacts of the fishery on non-target species, a fact which is also reflected in the limited evidence of any technical measures in place to mitigate potential impacts. Of particular concern is the absence of any information on the potential impacts of the fishery on ETP species.</i>
Core improvements	<ul style="list-style-type: none"> Continue the monitoring of bycatch, periodically conduct a PSA, and implement management measures to protect any at-risk species found to be caught in significant quantities. Continue and develop the monitoring of the potential impacts of the fishery on the ecosystem, and factor the results into the management process. Require the reporting of interactions with ETP species by any vessel, including the outcome (returned alive / dead etc.). Conduct a study to determine the potential interactions of the fishery with ETP species. This may utilise the results of the reports above. Implement technical measures to minimise any detected impacts of the fishery on ETP species. Continue monitoring the compliance of vessels in relation to the no-take zones. Introduce a habitat monitoring component to future stock assessments and ensure this is taken into consideration in management decisions.
Information Sources	<ul style="list-style-type: none"> Plan is to document sanctions and fines that have taken place in the past and to record future information Plan is to document all protective legislation to protect banned species and enforce no fining activities in banned areas
Proposed Timelines	Continue bycatch monitoring and introduce technical measures as required – Ongoing
	Continue ecosystem monitoring and introduce technical measures as required – Ongoing
	Continue monitoring compliance with no-take zones – Ongoing
	Require the reporting of interactions with ETP species – 1 year

	Introduce a habitat monitoring component to future stock assessments – 1 year
	Conduct a study to indicate potential ETP interactions – 2 years
	Implement technical measures to protect ETP species as required – 2 years+
Improvement Status	9/10/15 - (MOU) The stakeholder committee agrees to provide additional information, including statistics from the on-board observers programme and incidental bycatch; a report of interactions with ETP species; documentation indicating in which areas fishing is not permitted, and which species are prohibited or protected; and the current law for transgressions against the Aquatic Resources Policy.

E1	There should be a framework for sanctions of violation of Laws and regulations.
Determination from initial assessment	<i>Insufficient information available to fully assess this section.</i>
Core improvements	<ul style="list-style-type: none"> • Provide information on the laws in place which allow the application of sanctions where violations are detected. • Any further actions will depend on the extent to which sanctions are already in place.
Information Source	<ul style="list-style-type: none"> • ARAP
Proposed Timeline	Provide additional information – Immediate within 6 months – Possible medium or high at this stage.
Improvement Status	9/10/15 - (MOU) The stakeholder committee will provide a copy of Executive Decree No. 160, which details the penalty system, and also records of fines and inspections.

E2	A management system for fisheries control and enforcement should be established.
Determination from initial assessment	<i>A management system for control and enforcement is established, but there is limited information available to the CB's assessment team as to its likely efficacy.</i>
Core improvements	<ul style="list-style-type: none"> • Provide additional information on the activities and successes of the department of National Inspection, Monitoring and Control. • Any further actions will depend on the extent to which the enforcement regime is currently adequate.
Information Source	<ul style="list-style-type: none"> • ARAP currently enforce that vessel have satellite monitoring systems in place and they must complete accurate catch reports
Proposed Timeline	Provide additional information – Immediate within 6 months – Possible high at this stage.
Improvement Status	9/10/15 - (MOU) The stakeholder committee will provide information about the Satellite Monitoring System, the fishing boat clearance procedure, and Resolution No. 3.

6 - Proposed Surveillance Timeline

In order to monitor the progress of fishery science and management against the improvement timeline described above, a periodic review of the status of each IFFO RS assessment clause must be conducted. Initially, a review should be conducted after six months, to incorporate the additional information which should have been provided by that time. This includes the documentation which has now been committed to under the Stakeholder Committee MOU. This information can be used to update the timelines and re-estimate the compliance ratings. Subsequent surveillances should be conducted at the end of every 12 month period after acceptance of the fishery into the improver programme, and should focus particularly on the extent to which the fishery has met the deadlines for that year. A summary of these deadlines is provided below. In addition, the annual surveillance should examine whether progress has been made towards longer-term improvements (i.e. those to be examined in detail in subsequent years), and should also update the estimated compliance rating of the fishery under each clause.

6 months after acceptance

- (A1) Provide information on the roles, responsibilities and structures of the management bodies.
- (D2) Provide information on the process by which fishing licences are awarded.
- (E1, E2) Provide additional information on the control, enforcement and sanctions in place in the fishery.
- (General) Provide the fishery management plan.
- (General) Provide the other documentation and legislation listed in the MOU.

1 year after acceptance

- (A2) Estimate discarding and bycatch rates.
- (B1) Conduct otolith sampling to provide age data.
- (D3) Introduce a legal requirement for the reporting of interactions with ETP species.
- (D3) Introduce a habitat-monitoring component to fishery assessments.

2 years after acceptance

- (A2) Publish the results of a study into whether there is more than one species of herring in the catch.
- (A2) Publish the results of a study into the distribution of the biological stocks in the fishery.
- (A3) Implement a fishery management plan with explicit long-term sustainability objectives.
- (B1) Introduce regular fishery-independent surveys.
- (D3) Publish the results of a study into potential ETP interactions.
- (D3) Implement measures to protect ETP species if required.

3 years after acceptance

- (A3, D1) Define reference points or proxies.
- (B1, D1) Estimate stock size and regularly update this estimate.
- (B2, D1) Ensure scientific advice provided in support of fishery management is regular and reliable.

Note that if the fishery has successfully implemented all improvements up to this point, it may be in a position to meet the requirements of IFFO RS approval. As such, improvement programme

surveillance assessments may no longer be necessary. Improvements listed below represent moving towards high compliance ratings.

4 years after acceptance

- No additional areas, but all previous improvements should be maintained.

5 years after acceptance

- (A3) Provide evidence that the fishery has been managed according to the management plan and reference points.
- (B2) Provide evidence that the fishery has been managed in line with the regular scientific advice.
- (D1) Provide evidence that the level of fishery removals are in line with the scientific advice.
- (D2) Provide evidence that the fishery has remained within the defined reference points.

7 - Additional Comments

The Panama small pelagic fishery is at a promising stage. The recent meeting held between the main processors and government agencies demonstrates significant enthusiasm for improvement towards IFFO RS approval, and the signing of a Memorandum of Understanding indicates genuine commitment. The timeline described above is a product of a number of months of negotiation between all the key stakeholders and represents a realistic period over which such improvement could take place, not just to a level where the fishery can be approved under the IFFO RS programme, but to where it can achieve high compliance ratings.

The surveillance timeline represents a key component of the improvement process, as it will ensure all stakeholders are aware of the progress of the fishery towards the goal of achieving approval. By monitoring progress and highlighting the continuing strengths and weaknesses of fishery management in relation to the IFFO RS requirements, the surveillance reports will provide managers with a key insight into their next steps and priorities, but will also give a tangible sense of progress.

8 - References

IFFO RS fishery assessment, Panama Pacific anchoveta, June 2015.

IFFO RS fishery assessment, Panama Herring, June 2015

ARAP Mission and Vision: <http://www.arap.gob.pa/transparencia/mision.pdf>

CeDePesca, "About": <http://cedepesca.net/quienes-somos/>

CeDePesca FIP page, Panamanian small pelagics: <http://cedepesca.net/promes/small-pelagics/panamanian-small-pelagics/>

"Small Pelagic Fishery in Panama, Stock Assessment and Recommendations for a Management Plan", CeDePesca report, March 2015 (via email)

Small Pelagics: SFP Fisheries Sustainability Overview 2014:
http://cmsdevelopment.sustainablefish.org.s3.amazonaws.com/2014/06/24/Small_Pelagics_Sector_Report_2014_-_FINAL-1ef7b045.pdf

International Coral Reef Initiative member page – Panama:
<http://www.icriforum.org/about-icri/members-networks/panama>

Panama fishing production statistics 1983 – 2014 (via email)

Example Panama fishing licences, 2015 (via email)

FishSource stock page, Panamanian Pacific anchoveta:
<http://www.fishsource.com/fishery/summary?fishery=Pacific+anchoveta+-+Gulf+of+Panama+%5BFIP%3A+Panama+small+pelagics%2C+CeDePesca%5D>

SFP Fisheries Improvement Project page, Panamanian Small Pelagics:
<https://www.sustainablefish.org/fisheries-improvement/small-pelagics/panama-small-pelagics>