

Global Sustainability Overview of Whitefish Fisheries

February 2013

Executive Summary

This briefing represents the first edition of the Sustainable Fisheries Partnership (SFP) global sustainability overview of whitefish fisheries and covers the most recent assessment period for which comparable data is available as of October 2012. The analysis covers 51 principal whitefish fisheries around the world and rates each according to the five scoring criteria included in the assessment methodology used by the public database FishSource (www.fishsource.com). FishSource covers over 95% of world catches of species generally considered as whitefish or groundfish by FAO (ISSCAP Group 32, which generally maps to the commodity group whitefish or groundfish, as reported by Globefish). This report focuses on the main fisheries for which SFP has developed improvement advice, and some others of interest to SFP's partners. The 51 fisheries discussed in this report account for approximately 80% of world supply (the main missing fisheries, by volume, are blue whiting, Pacific cod, Norway pout, European hake, and whiting.)

The analysis also includes catches, gear types, Marine Stewardship Council (MSC) certification, outstanding MSC conditions (where the fishery is certified), and fishery improvement projects in place. The data have also been separately analyzed for the 17 cod fisheries, given the particular interest in this species.

Apart from being assessed against the five FishSource criteria, the fisheries are also placed in categories defined within the context of FishSource's 10-point scoring scale:

Category A – very well managed fisheries that score above 8 across all FishSource criteria

Category B – reasonably well managed fisheries that score above 6 across all FishSource criteria

Category C – poorly managed fisheries where at least one criteria is scored below 6

In summary, the briefing concludes that for whitefish fisheries:

- 41.5% of the total volume of whitefish supplied to market comes from fisheries in a very good condition (Category A). 88.5% of the cod supplied to market is in Category A.
- 37.5% of the total volume of whitefish supplied to market comes from fisheries that are in good condition but would benefit from improvements in management regime (Category B). No cod stocks currently fall within Category B.



- 21% of the total volume of whitefish comes from fisheries that have not been effectively managed and significant improvements are required (Category C). 11.5% of the cod supplied to market is in Category C.
- Although a large volume of whitefish comes from fisheries in good condition, many currently depleted fisheries are supplying little or no fish because they cannot support significant catches. In fact, the majority of fisheries by number are actually in a poor state and need significant improvement. In terms of the number of whitefish fisheries, 11 (22%) fall in Category A, 13 (26%) in Category B, and 27 (52%) in Category C. The situation is particularly polarized for the 17 cod fisheries - 4 (24%) are in Category A and 13 (76%) in Category C.
- Many of the fisheries that need to improve do not have fishery improvement projects (FIPs) in place – this situation is particularly acute for cod. For the 27 whitefish fisheries that require significant improvements (Category C), only 13 have a FIP in place and of these at least 7 are deemed to have made insufficient progress as assessed by SFP. For cod, 13 cod fisheries are in Category C and only 3 have FIPs.
- The data for landings for all whitefish (as well as for cod separately) for 2010, 2011, and 2012 have been analyzed with regard to the volumes of catch generated by fisheries in each category. This analysis shows a generally positive trend, although there has been no significant increase in the percentage volume of fish taken from Category A fisheries in the past 2 years.
- The data for overall global biomass of whitefish have been analyzed. The trend for total whitefish biomass shows a significant increase and this may achieve a value of more than 22.6 million tonnes in 2020 if the trend continues. This represents an increase of 3 million tonnes (15%) over current levels (19.6 million tonnes) of biomass. This figure will only be achieved if fishery improvements take place.
- SFP calculates that if all whitefish fisheries were managed well, the likely catch in 2020 could be 6,788,400 tonnes. This would deliver almost a million additional tonnes of whitefish compared to most recent landings. Again, this benefit depends on fishery improvements being implemented in many fisheries.
- None of the fisheries have comprehensive ecosystem-based fisheries management in place, although some have made very significant steps forward in effectively managing environmental impacts.
- Of 11 fisheries in Category A, 10 contain at least one MSC-certified unit. For the 13 Category B fisheries, 9 contain at least one certified unit. In Category C, there are 27 fisheries, but only 2 contain an MSC-certified unit. The number of outstanding conditions for MSC Principle 2 (environment) varies from 1 to 8.



The report concludes that the world's whitefish fisheries are on a positive trend in terms of improvement, but that the situation is highly polarized with a few well-managed fisheries producing a lot of fish while the majority are not well managed or remain in poor condition. This situation is far from being rectified and it is a matter of urgency that effective fishery improvement projects are put in place where required.

There may be some evidence that recent improvements will continue at the same rate only with additional efforts. The last 2 years of data show almost no increase in the percentage volume from Category A fisheries for both "all whitefish" and cod – this may be evidence that improvements have been achieved in a few high-volume fisheries, but that a hard core of poorly performing fisheries are proving resistant to change.

SFP is urging commercial buyers of whitefish to take the following actions:

- Do not source from fisheries where the current spawning stock biomass is below the lower limit reference point and where no credible FIP is in place. Companies that are currently buying from these fisheries should continue to do so, but give a clear timetable for withdrawal if improvements are not delivered in a timely fashion.
- Actively encourage all whitefish fisheries without an improvement project to form such an initiative and begin to make progress in developing better management. This is a particular priority for northwest Atlantic cod fisheries.
- Encourage those whitefish fisheries that already have FIPs to ensure that the momentum of improvement continues and that progress does not stall. This is a particular priority for South American fisheries.
- Encourage those fisheries that have MSC certifications with outstanding conditions to fulfill those conditions as soon as possible.
- Encourage fisheries to adopt elements of ecosystem-based fisheries management.

Introduction

This briefing represents the first edition of the Sustainable Fisheries Partnership global sustainability overview of whitefish fisheries and covers the most recent assessment period for which comparable data is available as of October 2012 – this means that most of the data is from 2011, although there are some entries for 2010 and 2012. The analysis covers 51 principal whitefish fisheries around the world and rates each according to the five scoring criteria included in the assessment methodology used by the public database FishSource (www.fishsource.com). The five FishSource criteria are each scored from 1 to 10 and can be defined as follows:

Score 1 - Is management precautionary?

Score 2 - Do fishery managers follow scientific advice?

Score 3 - Do fishers comply?

Score 4 - Is the stock biomass healthy?

Score 5 - Will the stock be healthy in the future?



The fisheries are also organized into categories:

Category A – very well managed fisheries that score above 8 across all FishSource criteria

Category B – well managed fisheries that score above 6 across all FishSource criteria

Category C – poorly managed fisheries where at least one criteria is scored below 6

The analysis also includes catches, gear types, MSC certification, outstanding MSC conditions (where the fishery is certified), and whether fishery improvement projects are in place. The data has also been separately analyzed for the 17 cod fisheries, given the particular interest in this species.

The fisheries have been ranked according to category. Where fisheries occupy the same category, they are ranked by the value of the score for criteria 4 (biomass), since this is the most direct indicator of the state of the stock. Where two fisheries occupy the same category and have identical biomass scores they are ranked according to the value for criteria 5 (fishing mortality), since this is a good indicator of the sustainability of current exploitation rates.

The data for landings for all whitefish (as well as for cod separately) for 2010, 2011, and 2012 have been analyzed with regard to the volumes of catch generated by fisheries in each category. The data for total global biomass of whitefish have also been analyzed for the period 2000–2011. SFP has also made an approximate estimate of the likely catch in 2020 if all whitefish fisheries were well managed.

Not all whitefish fisheries have been included in this analysis; blue whiting, Pacific cod, Norway pout, European hake, and whiting have all been omitted. However, the data presented here do represent genuine global trends and these other fisheries will be included in future analysis. Future reports will also consider fisheries used for providing the raw material for surimi.

Results

Overall Status of Whitefish Fisheries

The ranking results are presented in Table 1 (included here as the attachment Annex A) with the following category definitions:

“All whitefish” – Provides the full ranking of all whitefish and provides data on FishSource scores, category, latest catch volume, year of catch, gear type, and how many stocks within the fishery are MSC certified. The table also shows the number of outstanding MSC conditions that need to be fulfilled (presented as an average of the number of outstanding conditions along with the minimum and maximum values in brackets).

“Cod” – Provides the same ranking as for “All whitefish” but analyzes only cod fisheries.



“Volume & category analysis” – This data is presented as pie charts and shows the volumes of fish (all whitefish, as well as cod, separately) landed per category over the last 3 years for which data are available.

“Data for volumes & categories” – This is the source data used for the volume and category analysis.

Examination of Table 1 allows the following conclusions to be drawn:

41.5% of the total volume of whitefish supplied to market comes from fisheries in very good condition (Category A). 88.5% of the cod supplied to market is in Category A.

37.5% of the total volume of whitefish supplied to market comes from fisheries that are in good condition but would benefit from improvements in management regime (Category B). No cod stocks currently fall within Category B.

21% of the total volume of whitefish comes from fisheries that have not been effectively managed and significant improvements are required (Category C). 11.5% of the cod supplied to market is in Category C.

Although a large volume of whitefish comes from fisheries in good condition, the majority of fisheries are actually in a poor state and need significant improvement. In terms of the number of whitefish fisheries, 11 (22%) fall in Category A, 13 (26%) in Category B, and 27 (52%) in Category C. The situation is particularly polarized for the 17 cod fisheries: 4 (24%) are in Category A and 13 (76%) in Category C. It therefore seems evident that the current supply of whitefish is supported by a minority of fisheries that are performing extremely well, while a majority of whitefish fisheries, and particularly cod fisheries, require help.

The data for landings for all whitefish (as well as for cod separately) for 2010, 2011, and 2012 have also been analyzed with regard to the volumes of catch generated by fisheries in each category. This analysis shows a generally positive trend in terms of the management of whitefish fisheries.

The proportion of whitefish supplied to market from Category A fisheries increased from 35% to 42% in the last 3 years for which data is available. The proportion of whitefish landed from fisheries in Category C decreased from 25% to 21% over the same period.

There may be some evidence that the rate of improvement is slowing down. The last 2 years of data shows almost no change in the reduction of volume from Category C fisheries for both “all whitefish” and cod – this may be evidence that improvements may have been achieved in a few high-volume fisheries but that a hard core of poorly performing fisheries are proving resistant to change.

Fishery Improvement Projects

Table 2 (included here as two sheets in attachment Annex B) shows the number of fishery improvement projects (FIPs) in place for those fisheries in categories B and C with the following category definitions:

“FIPs – all whitefish” – This shows all whitefish fisheries in categories B and C, whether a FIP is in place, and the status of the FIP.

“FIPs – cod” – This shows all cod fisheries in Category C (there are no cod fisheries in Category B) along with whether a FIP is in place and the status of the FIP.

The most striking conclusion to be drawn is that many of the fisheries that need to improve do not have fishery improvement projects in place. This situation is particularly acute for cod. For the 27 whitefish fisheries that require significant improvements (Category C), only 13 have a FIP in place. For cod, 13 cod fisheries are in Category C and only 3 of those have FIPs.

In terms of FIP status, the FIPs in Category C can be assessed as follows in Table 3:

Table 3. Category C FIPs assessment

Category C FIPs	All whitefish (total = 13)	Cod (total = 3)
Making good progress	2	0
Insufficient progress	7	0
Public information not available	3	2
New	1	1

This analysis does not provide grounds for optimism when considering the chances of improvement among many poorly performing fisheries. Only a minority of the whitefish fisheries in Category C have FIPs and at least 7 of the 13 are deemed to have made insufficient progress as assessed by SFP. Only 3 FIPs operate for cod, one of which is new and the other 2 are not public.

Future Trends in Biomass and Landings

Globally, whitefish stocks are increasing and this is illustrated by the values for spawning stock biomass (SSB) in Table 4 below. Overall, the total whitefish biomass worldwide has increased by 24.5% in 12 years. This growth has undoubtedly been due to improvements in fishery management and those who manage the stocks that have experienced sustained recovery deserve congratulation.

Table 4. Total spawning stock biomass for all whitefish, total catch for last 4 years (of public data) and ratio of SSB to catch

Year data recorded	Spawning stock biomass ('000s tonnes)	Total catch ('000s tonnes)	SSB vs catch ratio
2000	15770	-	-
2001	16266	-	-
2002	16679	-	-
2003	17131	-	-
2004	17662	-	-
2005	18111	-	-
2006	18352	-	-
2007	18072	-	-
2008	17126	5412	31.6%
2009	17620	5336	30.3%
2010	18691	5342	28.6%
2011	19635	5809	29.6%

Given this rising trend, SFP has attempted to calculate the total whitefish spawning stock biomass in 2020 if all whitefish fisheries were well managed (i.e., qualified for Category A). This is not an easy process given the high degree of uncertainty in fisheries, so two assumptions have been made:

1. Stocks that are already well managed will remain at their current levels until 2020. This is a rather conservative estimate given the rising stock size in these fisheries.
2. Stocks that are currently below target biomass will recover to meet those targets by 2020. This is a rather optimistic estimate given the current situation, but it could be achieved if the necessary improvements were put in place.

For the second assumption to be effective, proxies to target reference points had to be derived for those stocks where a formal target is not in place. This includes stocks such as Navarinski (Russian) pollock, Newfoundland cod, Japanese pollock, and Icelandic haddock. These four stocks currently represent about 11% of the total whitefish biomass. The first of these four stocks has neither a lower limit nor target reference points in place and so a rough biomass target has been set of about 50% of the highest biomass observed historically. The other three stocks in this group have a lower biomass limit, but not a target, and so a proxy for a target has been set at twice the limit value. Further information on the methodology behind these calculations is available by contacting SFP.

Under the assumptions above, SFP has estimated a likely 2020 global whitefish biomass at about 22.6 million tonnes, representing a 3-million-tonne (15%) increase from current levels (19.6 million tonnes).



What Does Rising Biomass Mean for Landings?

An analysis of the figures for total global spawning stock biomass, total catch, and the ratio of stock to catch for the past 4 years from Table 3 allows the following calculations:

$$\text{Average SSB vs catch ratio} = (31.6 + 30.3 + 28.6 + 29.6) / 4 = 30\%$$

With a working assumption of a global SSB of 22,628,000 tonnes in 2020, this allows the following catch estimates to be produced:

$$\text{Potential whitefish catch in 2020} = 22,628,000 \times 0.30 = 6,788,400$$

$$\text{Catch recorded in 2012} = 5,809,000$$

$$\begin{aligned} \text{Potential maximum increase in whitefish catch in 2020 compared to 2012:} \\ 6,788,400 - 5,809,000 = 979,400 \text{ tonnes} \end{aligned}$$

These calculations demonstrate that if all whitefish fisheries were well managed, they would yield an additional catch volume of almost one million tonnes.

This data is illustrated in the graph “Global whitefish: 2020 projected biomass and catch,” included here as the attachment Annex C.

Marine Stewardship Council (MSC) Certification

Of 11 fisheries in Category A, 10 contain at least one MSC-certified unit. For the 13 Category B fisheries, 9 contain at least one certified unit. In Category C, there are 27 fisheries but only 2 contain an MSC-certified fishery. The number of outstanding conditions for MSC Principle 2 (environment) varies from 1 through 8. Two fisheries – eastern and western New Zealand hoki – have fulfilled all MSC conditions.

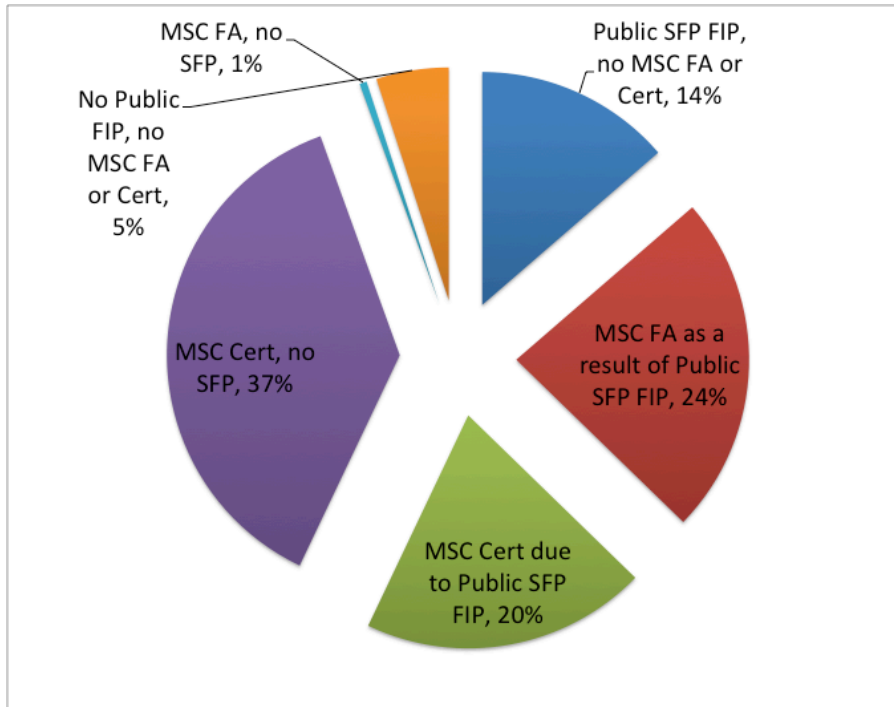
Two observations could be made:

1. MSC certification does not mean an end to improvement activity in a fishery – Table 1 clearly shows that there are opportunities for MSC fisheries to continue to increase performance.
2. There is a synergistic relationship between FIPs and MSC certification. FIPs can use the MSC pre-assessment methodology when creating a baseline assessment prior to improvement activities (even if they make no plans for actual certification). MSC certification can also be a milestone for a FIP in terms of a pathway to sustainability.

SFP has performed an analysis of whitefish fisheries to establish those with MSC certification and those in fishery improvement projects. The results can be seen in Figure 1, below.



Figure 1



The categories are defined as:

MSC FA, no SFP: Fisheries in MSC “Full Assessment,” but without any relation to SFP FIPs

MSC Cert due to Public SFP FIP: Fisheries MSC “Certified” as a result of a public SFP FIP

MSC Cert, no SFP: Fisheries MSC “Certified,” but without any relation to SFP FIPs

MSC FA as a result of Public SFP FIP: Fisheries in MSC “Full Assessment” as a result of a public SFP FIP

No Public FIP, no MSC FA or Cert: Fisheries that are neither under MSC “Full Assessment” nor “Certified” nor have any public FIP

Public SFP FIP, no MSC FA or Cert: Fisheries that have a public SFP FIP, but are not under MSC “Full Assessment” or “Certified”

Ecosystem-based fisheries management (EBFM)

EBFM represents an approach that goes beyond a focus on single stocks of target species and includes other elements of the ecosystem in the management framework. The United Nations Food and Agriculture Organization Code of Conduct for Responsible Fisheries states that: “Management measures should not only ensure the conservation of target species but also of species belonging to the same ecosystem or associated with or dependent upon the target species.”



Examples of an EBFM approach could include:

- Protecting habitats of importance to fisheries and other marine life (e.g., defining areas that are off limits to bottom trawling)
- Using “no take” zones to maintain prey abundance in areas of importance to predators (e.g., the intent of Steller sea lion protection measures in Alaska)
- Adjusting the seasonal pattern of fishing to prevent any seasonal depletions of prey abundance (e.g., seasonal measures used in the North Sea sandeel fishery to maintain prey for seabirds)
- Defining and monitoring thresholds and limits for impacts on marine life other than target stocks and implementing measures, such as bycatch reduction techniques/technologies, that ensure such limits are respected
- Avoiding the negative effects of fishing gear on protected, endangered, and threatened (PET) species.

Developing a robust EBFM regime is not easy and there are reasons why this approach has yet to be widely adopted. EBFM requires significant amounts of ecological data to be effective and cannot always be easily integrated into existing management regimes, so progress has inevitably been slow. SFP is helping promote EBFM globally by:

1. Documenting and communicating EBFM best practices that have already been applied with success and encouraging adoption worldwide
 - a. *Benthic Protected Areas* – best practices and recommended actions published on the SFP website
 - b. *PET species bycatch* – best practices and recommended actions available in 2013
 - c. *Food web dynamics* – best practices and recommended actions available in 2013
 - d. Other EBFM best practices reports may also be available in the future.
2. Engaging the seafood supply chain to encourage priority fisheries to adopt best practices in EBFM and enhance fisheries performance.

Discussion

Clearly there have been very significant improvements in the management of some whitefish fisheries and this has resulted in a substantial increase in the volume of fish coming from well-managed sources. All of the fisheries featured in Category A deserve to be congratulated, particularly those that fulfilled all conditions required by MSC certification.

However, although whitefish is a success story, there is no room for complacency. The situation is highly polarized, with a few large fisheries showing significant improvement while the majority of fisheries are still poorly managed or remain in poor condition. The rate of improvement may also be slowing. This situation is not being effectively addressed; an analysis of the fisheries



shows that few in Category C have fishery improvement projects in place and many of these initiatives are not delivering consistent progress.

Rough estimates of the potential gains for the seafood industry from further sustained improvement show that there is a large financial incentive for greater exertions in terms of extra fish. However, these incentives do not yet seem to be stimulating the kind of actions required and there is an urgent need for new FIPs in the northwest Atlantic and the reinvigoration of stalled FIPs in South America.

The seafood industry has a crucial role to play in stimulating the required improvements. It has the power to make change happen and also stands to be a major beneficiary of future progress.

How Should Buyers Respond?

Given the wide variation in performance between fisheries, buyers will inevitably be concerned to promote further improvement in the management of whitefish and ensure that supplies either come from sustainable fisheries or those that are actively working towards sustainability. SFP recommends the following actions to buyers of whitefish:

- Do not source from fisheries where the current spawning stock biomass is below the lower limit reference point and where no credible FIP is in place. Companies that are currently buying from these fisheries should continue to do so but give a clear timetable for withdrawal if improvements are not delivered in a timely fashion.
- Actively encourage all whitefish fisheries without an improvement project to form such an initiative and begin to make progress in developing better management. This is a particular priority for northwest Atlantic cod fisheries.
- Encourage those whitefish fisheries that already have FIPs to ensure that the momentum of improvement continues and that progress does not stall. This is a particular priority for South American fisheries.
- Encourage those fisheries that have MSC certifications with outstanding conditions to fulfill those conditions as soon as possible.
- Encourage fisheries to adopt elements of ecosystem-based fisheries management

SFP always encourages buyers to purchase from those fisheries that are taking active steps to improve performance, even if the current state of the fishery is less than ideal. SFP has identified a set of improvement actions for each individual fishery in this report that can be provided to enquirers. SFP encourages buyers to look at the improvement “asks” for each fishery they source from and communicate these to the other parts of the supply chain.

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