SAPFIA comments on the socio-economic implications of spatial management and the development of OMP-17 in the Small Pelagics fishery

The Small Pelagics fisheries sector is the largest sector in terms of catches (sometimes exceeding 500 000 tons for all species) and the second largest sector in terms of value in the South African fishing industry (the 2014 wholesale value of landings was estimated by DAFF at R2,642 billion, or 26,4% of all sectors). Some 5 200 people are employed in the industry. The 2013 total wholesale value of processed small pelagic fish (canned and frozen sardines, fishmeal and fish oil was estimated to be approximately R1.55 billion, thus adding about 50% to the estimated landed fish value. This gives an indication of the relative volatility in the industry which in itself creates economic challenges.

The transformation of the industry has been a dominant driver of socio-economic change since 1994, with some 50% of rights being given to new right holders. Some of the new entrants have struggled to survive, given the high barriers to entry in the catching and processing industry due to the high capital investments required, and have been forced to enter into catching and processing agreements with traditional right holders.

Peak catches of small pelagic species occurred in 2004, when 104 vessels were active, and of this 19 were reported to be sardine only directed vessels. This had already declined to only 74 vessels in 2014.

The current low biomass levels of sardine stocks and efforts to manage components or sub-populations of the stock spatially are placing increasing strain on the Small Pelagics sector. Some background to this situation and the implications of this to the Industry are discussed below.

A record of the allocated directed sardine TACs declared following the November biomass surveys for the last 4 years reveals the following:

2013 - Directed Sardine TAC 90 000 tons determined from Interim OMP-13 and based on a Sardine 1+ biomass of 345 054 tons.

2014 – Directed Sardine TAC 90 000 tons determined from Interim OMP-13 vs3 and based on a Sardine biomass of 851 553 tons. This interim version allowed for a conservative initial directed sardine TAC in the event that the biomass was in the range 300 000 to 600 000 tons. The rule for the top-up had not been decided at that time.

2015 – Initial directed Sardine TAC 75 443 tons determined from OMP-14 and based on a sardine biomass of 444 500 tons and the proposed proportion to be caught west of 20^{o}E to lie between 50,2 and 70,2%.

2016 – Initial directed Sardine TAC 64 563 tons determined from OMP-14 and based on a sardine biomass of 363 230 tons and the proposed proportion to be caught west to lie between 25,6 and 45,6%.

The 2016 proposed proportion of the sardine TAC to be caught west decreased substantially from 2015 directly as a result of the decreased 1+ biomass found west of Cape Agulhas during the 2014 and 2015 November surveys. Ultimately the increase required to be caught east proved to be a bridge too far, for several reasons, but mainly because the fish was not available for long enough on the South Coast, was not catchable at times and because some companies could not secure landing facilities in Mossel Bay on time.

Before this initial directed sardine TAC and spatial management approach was applied, the OMP had assured, in the interests of Industry stability, a TAC of at least 90 000 tons, provided the spawner biomass estimate was above 300 000 tons. Although the spawner biomass had not declined below 300 000 tons in 2015, the precautionary approach associated with spatial management had reduced the initial directed TAC to only 64 653 tons. During the various reviews of the OMP mentioned above, the Industry was so concerned about mooted reductions in the minimum TAC that SAPFIA appointed consultants (Anchor Environmental Consultants) to conduct a socio-economic assessment of the potential impacts of a reduction in the minimum sardine TAC from 90 000 tons to a theoretical scenario of 75 000 tons.

The main potential implications of such a reduction are detailed in the report and can be summarised as follows:

- A reduction in value of sardine landings from R347 to R289 million (at 2013 prices).
- Loss from reduced usage fees on 15 000 tons equated to R29,4 million.
- In terms of vessels, it was estimated that at least 4 x Type 1 (small) vessels would be lost over the long term. This equated to a loss of 36 sea-going jobs, or 6% of seagoing jobs. For Type 4 (large steel) vessels it had the implication of a reduction of annual crew wages of R11,5 million and to vessel owners of R17,25 million (2012 values). Crew are paid commission per ton of fish caught and would lose R11,5 million on a reduction of 15 000 tons. There is a minimum viable catch per vessel required to break even - this varies from 1 700 tons to 8 000 tons, depending on the type of vessel, without capital depreciation being taken into account. If the latter is taken into account these estimates increase by 40-50%.
- Processors at the six canning factories are severely affected when the TAC is reduced, and especially when the catch has to be taken outside of the normal areas of operation. In the past the eastward shift of sardine biomass and catch had socio-economic impacts due to the mismatch between processing capacity on the West Coast and the area where sardine was predominantly available. Smaller vessels had to be used to catch sardine in the Mossel Bay area and the fish had to be trucked at significant additional cost to West Coast processors. If the processing capacity of all sardine processors including for fish meal is combined, they can theoretically process a TAC of some 450 000 tons (roughly 5 times the previous minimum TAC of 90 000 tons), so are clearly severely challenged at a TAC of about 65 000 tons. Analyses of the economic data collected indicated that, on average, overall revenues (from all products) are reduced by 10,4% and costs by just 6,6% for canneries and revenues by 14,6% and costs by 6,8% for frozen sardine processors under a reduced minimum TAC

of 75 000 tons. The greatest loss results from lower canning production of 600 000 cartons, which is worth some R147,18 million.

- The impacts of a TAC reduction were considered to be most severe on the estimated 3 500 seasonal workers in the sardine processing industry who would experience a proportional reduction in working hours and earnings (an estimated loss of R16,5 million), placing them under increased economic stress.
- The total loss in operating profits and earnings (excluding processors revenue) were estimated at R135,5 million.

Given that the above figures were calculated on a TAC of 75 000 tons (a 17% reduction) the current TAC of 64 928 tons (representing a 27% reduction) is already having a correspondingly greater, not necessarily linear, effect and may be pushing some operations closer to the edge of unprofitability. This has been compounded by the difficulties of having to catch a large percentage of the catch on the South Coast under difficult conditions.

Although they cannot immediately be quantified, the following impacts are already apparent:

- A reduction in the number of sardine only vessels to 18 in 2015 and 15 in 2016. The total number of vessels in the small pelagic fishery in 2015 was 73 and this increased to 74 in 2016 mainly because of the good anchovy landings.
- Further losses of quota usage fees to right holders, on TAC reduction from 90 000 tons to 64 928 tons.
- Loss of catching fees less crew commission to vessel owners.
- Loss of commission on 25 000 t to vessel crew.
- Additional cost to offload and truck fish from Mossel Bay to the west coast factories of about R1 250 per ton.
- 6 freezing factories ceased operations.
- Loss on revenue from almost 1 million cartons of canned sardine and 7 000 tons of frozen sardine to processors.
- Loss of operating profits from almost 1 million cartons of canned sardines and 7 000 tons of whole frozen sardine.
- Loss on revenue from 9000t of offcuts lost to fishmeal and oil production, worth approximately R40 million.
- Further reduced shifts resulting in reduced earnings for 3 500 seasonal workers of at least R25 million.
- It should be noted that impacts will vary amongst right holders, e.g. whether these are focussed mainly on canning or on packing fresh sardine as bait.

Although it is unlikely that the increased losses would be linear, if one assumes (in the absence of new economic data) that they are roughly linear, one could estimate that losses incurred this year under a TAC reduced to about 65 000 tons equates to roughly R225 million at 2014 prices. This does not take into account inflation, additional costs of shifting operations to the South Coast, or increased international prices for canned fish and for fishmeal and fish oil. Further reductions, either directly or as a result of spatial management considerations or both, could therefore have even greater impacts.

SAPFIA is fully aware that the sustainability of the sardine stock should not be compromised, and as such we have been prepared to accept lower TACs as a consequence of the new OMP being developed in spite of the length of time it has taken so far. However, the above information, while not definitive, is provided in order to give the International Stock Assessment Panel a flavour of the prevailing economic situation in the small pelagic industry and to illustrate that when major decisions are made that affect the TAC or areas of operation that there are significant economic consequences. There should, therefore, be some caution applied when changes to the OMP are considered – there should at least be an acceptable level of certainty about the hypotheses that are taken into account when such changes are being proposed.

Reference:

Hutchings, K, Clark BM and JK Turpie 2015. Assessment of the socio-economic implications of a reduced minimum sardine TAC for the small pelagic purse-seine fishery. Final report submitted to SAPFIA. 102 pp.

Appendix

Summary of anticipated socio-economic impacts of a 17% reduction (from 90 000 to 75 000t) in the sardine TAC on the small pelagic industry

Industry Component	Rands (Millions
Rights holders	
Loss of quota usage fee on 15 000t	R29.42
Vessel owners	
Loss of catching fee less crew commission on 15 000t	R17.25
Loss of four type 1 (small sardine specialist) vessels in long term	36 seagoing jobs
Vessel crew	
Loss of commission on 15 000t	R11.5
Processors revenue (excluded from TOTAL)	
Loss of 660 000 cartons locally caught and canned sardine (12 000t raw fish)	R147.18
Loss of 3000t whole frozen sardine	R30.00
Processors Operating profits (included in TOTAL)	
Loss of 660 000 cartons locally caught and canned sardine (12 000t raw fish)	R45.84
Loss of 3000t whole frozen sardine	R15.00
Seasonal workers	
Reduced shifts resulting in reduced earnings for 3 500 seasonal workers	R16.5
TOTAL LOSS (operating profits and earnings, excluding processors revenue)	**R135.51**

From: Hutchings, K, Clark BM and JK Turpie 2015. Assessment of the socio-economic implications of a reduced minimum sardine TAC for the small pelagic purse-seine fishery. Final report submitted to SAPFIA. 102 pp.