

Benguela Current Forage Fish Workshop

2 - 4 November 2020 – Online via GoToMeeting

Date: 4 November 2020

RECOMMENDATIONS

Recognising that several of the endemic seabird populations of the Benguela Current Large Marine Ecosystem are currently classified as globally threatened by the IUCN and are listed on Table 1 Column A of the African-Eurasian Migratory Waterbird Agreement¹ (AEWA) affording them the highest level of protection,

Further recognising that a number of these seabird populations continue to decrease and are in dire need of urgent conservation action,

Recalling AEWA Article II paragraph 1 according to which “Parties shall take co-ordinated measures to maintain migratory waterbird species in a favourable conservation status or to restore them to such a status.”,

Further recalling the AEWA International Multi-species Action Plan for the Conservation of Benguela Current Upwelling System Coastal Seabirds adopted by the 6th Meeting of the AEWA Parties in 2015, as well as AEWA Resolution 7.6: Priorities for the Conservation of Seabirds in the African-Eurasian Flyways which requests Parties, *inter alia* “...to also treat as priority a pilot assessment of the implications of reduced prey availability for seabirds within the Benguela region, including the impact of prey scarcity on the conservation status of seabirds as well as the feasibility of introducing mitigation measures and thresholds to improve the availability of food for seabirds as appropriate”,

Aware that the recovery of the threatened endemic Benguela seabird populations is dependent on many factors and *noting* that these are simultaneously being addressed both nationally in the respective Range States as well as under the auspices of the inter-governmental AEWA Benguela Coastal Seabirds International Working Group;

Conscious that several of the forage fish² stocks in the Benguela Current Large Marine Ecosystem are currently also in an unfavourable status due to a multitude of factors and some are undergoing shifts in distribution which are not yet fully understood, and *noting* in this regard the three-year moratorium on commercial sardine fishing in Namibia ending in 2020,

Further conscious that the operation of commercial forage fisheries is a vital economic activity for all countries within the region, providing food resources for people, valuable foreign currency gains from exports to the international agri- and aquaculture industry (fishmeal), as well as direct employment within the fishing industry and indirect financial benefits to numerous communities,

Noting the mandates and processes adopted under the Benguela Current Convention³ to enhance sustainable fisheries within the region, including the actions laid out in the Benguela Current Commission

¹ The Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) is an intergovernmental treaty dedicated to the conservation of migratory waterbirds and their habitats across Africa, Europe, the Middle East, Central Asia, Greenland and the Canadian Archipelago. Of the three Benguela Current Large Marine Ecosystem Range States, South Africa is a Contracting Party to AEWA.

² Forage fish in the context of these recommendations include, but are not limited to Sardine, Anchovy, Rock Lobster, Krill, Bearded Goby etc.

³ The Benguela Current Convention is a formal treaty between the Governments of Angola, Namibia and South Africa that sets out the countries' intention to promote a coordinated regional approach to the long-term conservation, protection,

Strategic Action Programme 2015-2019 with respect to the sustainable harvest of living marine resources and the recovery of depleted stocks,

Noting also the following ecological and socio-economic context presented at the workshop with regard to the inter-linkages between forage fish and endemic seabirds within the Benguela Current Large Marine Ecosystem:

- Forage fish respond markedly to environmental variability and show large changes in abundance and distribution, and many factors limit their availability to seabird predators. Of these, the management of fishing pressure is the principal direct mitigation measure that can be applied, but fisheries are not the only consumers utilizing these resources;
- Low forage fish biomass caused by overexploitation and other stressors may alter ecosystem functioning and hold seabirds at low levels of abundance over a long period of time;
- Decreased forage fish availability due to changes in spatial distribution or other factors may also delay seabird population recoveries;
- The nutritional quality of forage fish varies between and within species due to environmental and other factors, and reductions in this can, in addition to the overall abundance or availability of fish, negatively impact seabird demographics;
- Densities of prey species around seabird colonies may be decreased by fisheries that are not regulated at appropriate spatial scales;
- Even for highly migratory forage fish, such as sardine and anchovy, local closures to fishing may enhance prey availability, and decrease energy expenditure and increase productivity of seabirds;
- Seabirds showing high fidelity to breeding sites, having short foraging ranges when breeding and little flexibility to adapt their diet are less able to cope with distributional changes of preferred forage species than those that are able to change their breeding locality or have extended foraging ranges, or are able to switch their diet to different prey items;
- Extinction probabilities of flock- or group-foraging seabird species may increase substantially as colony sizes decrease, highlighting the importance of maintaining colonies of sufficient size;
- Ecological thresholds (e.g. required forage fish biomass estimated from predator-prey relationships, forage availability indices, accounting for natural fish mortality from predation pressure, seabird by-catch during fishing operations) can be a useful tool in achieving an ecosystem-based approach to fisheries management;
- Seabirds provide substantial socio-economic and ecosystem benefits within the Benguela Current Large Marine Ecosystem,

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Highlighting both the long- and short-term goals agreed by the participants of the inter-governmental Benguela Current Forage Fish workshop:

rehabilitation, enhancement and sustainable use of the Benguela Current Large Marine Ecosystem, to provide economic, environmental and social benefits.

- In 20 years, depleted forage fish stocks in the Benguela Current have recovered to sustainable levels, affording sufficient resources for both humans and seabirds as well as the wider Benguela ecosystem;
- By 2025, the management of the Benguela Current's forage fish resources will aim to maintain healthy ecosystem functioning and, in particular, contribute towards halting the population declines of endangered endemic seabirds particularly dependent on these resources,

The Benguela Current Forage Fish workshop *recommends* the following actions to be undertaken as a matter of urgency under the auspices of the Benguela Current Convention, the African-Eurasian Migratory Waterbird Agreement (AEWA), the AEWA Benguela Coastal Seabirds International Working Group as well as by the national governments of Angola, Namibia and South Africa, as appropriate:

1. *Develop* a toolbox for the flexible and spatially appropriate management of forage fish in relation to threatened endemic Benguela seabird species in an effort to increase the availability of sufficient forage fish in key foraging areas throughout the annual cycle, including consideration of applicable management and conservation options, such as:
 - Setting ecosystem thresholds (i.e. sizes of forage resource populations below which a range of precautionary measures relating to fishing would be implemented at various spatial scales);
 - Closing of key foraging areas to fishing adjacent to major seabird colonies during the critical stages of their life cycle;
 - Implementing spatial management of fishing pressure in important foraging areas for non-breeding seabirds;
2. *Solicit* best practice guidance⁴ from forage fisheries stakeholders in other regions with regards to management - in particular in relation to spatio-temporal areal closures and coping mechanisms implemented by affected fisheries;
3. *Research* the interactions between the different commercial fisheries in the Benguela Current to better understand and manage inter-linkages and possible crossover effects of management actions on ecosystem functioning and stocks of other fish species;
4. *Review and promote* sustainable alternative uses (e.g. for human consumption) of harvested forage fish currently used for fishmeal, as well as sustainable alternatives to fishmeal production in collaboration with relevant international and local stakeholders;
5. *Contribute to* processes and programmes that identify, promote and develop alternative economic opportunities (alternative livelihoods) for people and communities to compensate for potential (additional) decreases in income from the fisheries industry;
6. *Develop* a predictive framework on the distribution, abundance and behaviour of forage fish species in the short- to medium-term to inform conservation and management decision-making;
7. *Investigate and take into consideration* other anthropogenic influences that could affect both forage fish and their seabird predators (e.g. plastics, pollutants, noise pollution etc.);
8. *Enhance* resilience to climate change for forage fish, fisheries and seabirds through management actions;

⁴ In particular, the stakeholders involved in the research and management of sand eels in the North Sea and forage resources in the California system, both of which were presented at the workshop.

9. *Negotiate* the co-management of shared sardine and other forage fish stocks between Angola and Namibia by adopting a bilateral management agreement;
10. *Ensure* the existence or creation of suitable seabird breeding habitat within the contracted or altered distributions of forage fish species to partially alleviate the impact of an altered distribution of prey on affected seabird species;
11. *Facilitate and prioritise* the recovery of seabird colonies to sufficient size to minimise known and potential Allee effects thus reducing the probability of colony extinction⁵;
12. *Implement* a regional standardised seabird monitoring protocol (both species which compete with fisheries for prey as well as those which do not), in order to obtain useful insights into the relative impacts of fishing and environmental forcing on seabirds;
13. Furthermore, the workshop *encourages* all Range States and relevant stakeholders to implement the forage fish related actions outlined in the AEWA International Multi-species Action Plan for the Conservation of Benguela Current Upwelling System Coastal Seabirds⁶.

⁵ Based on extinction probabilities associated with different colony sizes (e.g. foraging flocks that are too small, reduced shared information on forage fish locations, relative increase in exposure to predation at colonies and at sea, skewed sex ratios in small colonies).

⁶ The workshop to negotiate the AEWA International Multi-species Action Plan for the Conservation of Benguela Current Upwelling System Coastal Seabirds was held on 9-12 September 2014 in Namibia and was attended by government representatives and national experts from Angola, Namibia and South Africa.