MINISTER

JUSTICE AND CORRECTIONAL SERVICES

REPUBLIC OF SOUTH AFRICA

Reference: LSA 192739

APPEAL DECISION

APPEALS LODGED AGAINST THE ENVIRONMENTAL AUTHORISATION GRANTED FOR THE PROPOSED SEA BASED AQUACULTURE DEVELOPMENT ZONES IN ALGOA BAY, GQEBERHA, WITHIN THE NELSON MANDELA BAY METROPOLITAN MUNICIPALITY, IN EASTERN CAPE PROVINCE

Eduard Frans Drost	First Appellant
Adventure Swims ZA, Ralph West	Second Appellant
Cllr Tracy Weise	Third Appellant
E H Schumann	Fourth Appellant
Marguerite Smit	Fifth Appellant
Emil Hougaard	Sixth Appellant
Kevin Richards	Seventh Appellant
Dr Lorien Pichegru	Eighth Appellant

Charles Tregoning	Ninth Appellant
Lerryn Mew	Tenth Appellant
VIBERT Laëtitia	Eleventh Appellant
IRONMAN South Africa	Twelfth Appellant
Association for the Physically Disabled, Nelson Mandela Bay	Thirteenth Appellant
Zwartkops Conservancy	Fourteenth Appellant
Gill Uderstadt	Fifteenth Appellant
Lifesaving South Africa	Sixteenth Appellant
Nelson Mandela Bay Business Chamber	Seventeenth Appellant
Prof Ernie Heath	Eighteenth Appellant
Jill McLellan	Nineteenth Appellant
Adrian de Villiers	Twentieth Appellant
Chairperson of PEMBBA	Twenty-first Appellant
Wildlife and Environment Society of South Africa (WESSA)	Twenty-Second Appellant
Nelson Mandela Bay Tourism	Twenty-Third Appellant

Algoa Bay Conservation	Twenty-Fourth Appellant
Christopher Wade Dunderdale	Twenty-Fifth Appellant
Mieke Struwig	Twenty-sixth Appellant
BirdLife South Africa	Twenty-Seventh Appellant
Pro Dive – South Africa	Twenty-Eighth Appellant
Andrew Stewart	Twenty-Ninth Appellant
Natasha Haller	Thirtieth Appellant
South African Sailing Eastern Cape	Thirty-First Appellant
Gillian McAinsh	Thirty-Second Appellant
Dr Stephen van der Spuy	Thirty-Third Appellant
António Carlos Bastos	Thirty-Fourth Appellant
Department of Forestry, Fisheries and the Environment Chief Directorate: Aquaculture and Economic Development	Applicant
Department of Forestry, Fisheries and the Environment: Chief Directorate: Integrated Environmental Authorisations	Competent Authority

Appeals: These appeals were lodged by the abovementioned thirty-four appellants (the appellants), against the decision of the Chief Director: Integrated Environmental Authorisations (CD: IEA) of the Department of Forestry, Fisheries and the Environment (the Department) to grant an environmental authorization (EA) to the Chief Directorate: Aquaculture and Economic Development (CD: AED) (hereinafter referred to as the applicant) within the Department on 26 February 2020. This EA was granted in respect of the proposed sea based aquaculture development zones (ADZs) in Algoa Bay, within the Nelson Mandela Bay Metropolitan Municipality, in the Eastern Cape Province.

1. BACKGROUND AND APPEAL

1.1 In July 2019, the applicant lodged an application in terms of section 24 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), read with regulation 19 of the Environmental Impact Assessment Regulations, 2014, as amended (2014 EIA Regulations) for an EA for the proposed establishment of a sea-based ADZs in Algoa Bay. The proposed development falls within the jurisdiction of the Nelson Mandela Metropolitan Municipality, in the Eastern Cape Province.

1.2 The applicant commissioned an independent environmental consultancy, namely Anchor Research & Monitoring, to conduct a basic assessment for the abovementioned application. The CD: IEA commented on the draft Basic Assessment Report (BAR) on 16 August 2019. The final BAR was received by the CD: IEA on 21 October 2019 and after evaluating such, the CD: IEA approved the application and proceeded to grant the EA to the applicant on 26 February 2020.

1.3 The abovementioned EA authorises bivalve farming (oysters/mussels) at Algoa 1 Option 1 (Summerstrand site) and Algoa 6 (PE Harbour site) and finfish cage farming at Algoa 7 (Ngqura Harbour site).

1.4 Subsequent to the abovementioned decision of the CD: IEA, the Directorate: Appeals and Legal Review (Appeals Directorate) within the Department received appeals from the abovenamed thirty-four appellants. Considering the provisions of regulation 4 of the

National Appeal Regulations, 2014 (2014 Appeal Regulations), as well as the fact that interested and affected parties (I&APs) were notified of the aforesaid decision on 28 February 2020, the appeals against the granting of the EA were due to be lodged by 19 March 2020.

1.5 On 18 March 2020, the twenty-second appellant, namely WESSA, sent an email to the Appeals Directorate requesting an extension until end of April 2020 to lodge an appeal against the abovementioned EA. This extension request was approved by the Director of the Appeals Directorate on 19 March 2020. The twenty-second appellant was granted extension until 9 April 2020 to lodge their appeal. This appeal was thereafter lodged on 9 April 2020.

1.6 On 6 July 2020, the Appeals Directorate consolidated all the appeals and sent it to the applicant as well as the CD: IEA for responses and comments, respectively.

1.7 As per regulation 5 of the 2014 Appeal Regulations, read with the Directions issued on 5 June 2020 in terms of the Regulations issued in terms of section 27 (2) of the Disaster Management Act, 2002 (Act No. 57 of 2002), the applicant's responses to the appeals were timeously submitted on 18 August 2020.

1.8 On 17 August 2020, the CD: IEA provided comments on the grounds of appeals.

1.9 On 1 December 2020, the Appeals Directorate conducted a site visit so as to gain a better understanding of the site characteristics, in particular the Algoa 1, 6 and 7 precincts.

1.10 The appeals are premised on the following grounds:

1.10.1 Authorised sites for the proposed development;
1.10.2 Impacts unto penguins;
1.10.3 Risk of pollution;
1.10.4 Impacts unto tourism and water sport
1.10.5 Risk of shark attraction;
1.10.6 Impacts associated with alien species and impacts unto wild fauna and flora;

1.10.7 Significant wave heights and extreme weather;

1.10.8 The conditions of the previous appeal decision were not met; and

1.10.9 Ineffective mitigation measures and failure to consider I&APs' comments.

2. GROUNDS OF APPEALS, RESPONSES AND EVALUATION

2.1 Authorised sites for the proposed development

2.1.1 Many of the appellants contend that the proposed activity, particularly the proposed finfish ADZ at the Algoa 7 precinct, is in close proximity to a marine protected area, namely the Addo Elephant National Park Marine Protected Area (MPA) and therefore argue that the proposed ADZ will impact the functionality of the MPA. The tenth appellant contends that the very sensitive biodiversity of the area has not been taken into account and both the short and long term impact of the proposed fish farms has not been fully accounted for. The twelfth appellant argues that there will be destruction and degradation of the natural habitat. The twenty-third appellant contends that there is no buffer zone that has been afforded between the proposed ADZ and the MPA.

2.1.2 The twenty-fourth appellant contends that it is clear that the development at Algoa 7 will most definitely result in significant impacts on the marine environment. On this note the twenty-fourth appellant states that the Marine Specialist Impact Assessment by Anchor Research & Monitoring dated October 2019 (Marine Specialist Impact Assessment) provides that *"finfish farming at Algoa 7 could have residual high and medium marine ecological impacts after the implementation of mitigation measures as this site is situated adjacent to the recently promulgated Addo Marine Protected Area and St Croix Island Group"*. It is thus argued that the Algoa 7 precinct should have been excluded from the EA.

2.1.3 The third appellant argues that the Marine Spatial Plan (MSP) has not been finalised and thus the proposed development should be put on hold until the MSP has been tabled. The twenty-second appellant contends that the applicant and the CD: IEA did not consider in full the impact of designating fixed aquaculture zones prior to establishing the MSP. On

this note it is argued that implementing the proposed ADZ prior to the completion of the MSP will have the effect of predetermining future activities in a large extent of the Bay.

2.1.4 The twenty-seventh appellant contends that there is a lack of adequate consideration of the MSP. This appellant states that the MSP for Algoa Bay is currently being developed by a research group at the Nelson Mandela University and contends that approving and implementing ADZs prior to this plan being finalised pre-empts and undermines the MSP and affects all other marine process in the Bay.

2.1.5 Arguments pertaining to the inadequate assessment of alternatives are also raised by some appellants. The ninth and eighteenth appellants contend that the rehabilitation of Swartkops Estuary was not considered as an alternative option. The eighteenth appellant contends that the rehabilitation of the Swartkops Estuary could add value, enhance the economic base and has no major negative perceptual and real impacts on other sectors.

2.1.6 The twenty-second appellant also contends that rehabilitating the Swartkops Estuary meets the general need of the proposed development and should have been considered as an alternative. In addition, this appellant explains that the intention would be to restore its natural fish and other nursery functionality within the broader eco-system. In addition, it is contended that the assessment of pursuing bivalves at Algoa 7 meets the need of the proposed development and should have been considered as an alternative to finfish farming at the Algoa 7 precinct. It is argued that alternatives be given due and full scientific and socio-economic consideration.

2.1.7 In response to this ground of appeal, the applicant states that the Marine Specialist Impact Assessment describes the conservation status and biodiversity importance of Algoa Bay and takes cognisance of sensitive habitats in the assessment of impacts. The applicant acknowledges that marine ecological impacts are high for Algoa 7 precinct due to its position, which is adjacent to the MPA. The applicant states that the Marine Specialist Impact Assessment considered the impact of chemical pollution arising from finfish cages as well as the impact of organic waste discharge from finfish cages. The applicant explains that the proximity of the Algoa 7 precinct to the adjacent MPA was duly considered. In

addition to this the applicant states that the following mitigation measures are proposed, so as to limit the risks associated with the proposed ADZ:

2.1.7.1 Maintain genetic compatibility (similar levels of variation) between wild and cultured stock by implementing the "Genetic Best Practice Management Guidelines for Marine Finfish Hatcheries" and ensure adequate genetic monitoring of brood stock rotation.

2.1.7.2 Reduce the number of escapees by maintaining cage integrity through regular maintenance and replacement and training of staff.

2.1.7.3 Develop and implement recovery procedures should escapes occur.

2.1.7.4 Potential impacts should be monitored annually (genetic monitoring) between indigenous wild caught indigenous and farmed fish to monitor for any significant differences.

2.1.8 In response to the contentions pertaining to the MSP, the applicant states that Algoa Bay was identified as one of the few sites where sea-based aquaculture is possible along the very exposed shoreline of South Africa. The applicant explains that over the last 10 years, seven sites have been considered within Algoa Bay and the site selection process is explained in more detail in section 3.5 of the BAR.

2.1.9 In response to contentions pertaining to inadequate assessment of alternatives, the applicant explains that the alternative, as proposed by the appellants, namely rehabilitating the Swartkops Estuary, is outside the scope of this impact assessment and cannot be considered as part of this application which is for the development of a sea based aquaculture development zones. According to the applicant, there is currently a rehabilitation project underway for the Estuary.

2.1.10 In their comments on this ground of appeal, the CD: IEA states that the Marine Specialist Impact Assessment rated the possible negative impacts on the conservation objectives as High and made the following conclusions:

2.1.10.1 Provided that only indigenous fish species are farmed (dusky kob, silver kob, yellowtail), then the disease causing organisms and parasites will originate only from the wild fish populations which possess a natural resistance to these pathogens. Furthermore, the

transmission of parasites to wild stock coming into contact with caged fish will likely be a localised effect, and is therefore unlikely to compromise the ecology and productivity of wild fish populations and the associated fisheries.

2.1.10.2 The suggested downscaled farm production would go a long way towards reducing the number of escapees, hence the potential further loss of genetic diversity in collapsed wild fish stocks.

2.1.10.3 Organic waste and chemical pollutants will likely be adequately dispersed, with limited build-up below cages. The strong currents will rapidly dilute and disperse any chemical pollutants, and the effects of chemical pollution arising from fish cages are anticipated to be highly localised, in the vicinity of the fish cages. The Modelling–Ongrowing fish farm–Monitoring System (MOM) model outputs also suggest a downscaled production (~3000t) will result in limited waste emanating from a farm. If the model assumptions are valid, it is anticipated that waste will not impact sensitive habitats, shoreline reefs, blue flag beaches or island groups.

2.1.11 The CD: IEA further states that it should be noted that the sites for the ADZ have been selected, alternatives were discussed extensively, and the best practicable option was chosen. According to the CD: IEA, the site selection process undertaken was a very extensive one in that, some of the sites that were recommended in the initial process were eliminated due to various reasons.

2.1.12 In evaluating this ground of appeal, it must be noted that in 2009 a Strategic Environmental Assessment (SEA) was undertaken for the entire South African coastline so as to identify suitable aquaculture precincts. In this assessment, the Eastern Cape was highlighted as an area holding potential for the establishment of ADZs. The applicant intends for the proposed ADZs to accommodate both finfish as well as bivalve culture (oysters/mussels) within a combination of precincts.

2.1.13 The precincts considered in this EA application include one precinct from the previous process, namely Algoa 1, which is located offshore from Summerstrand, and two new precincts, designated as Algoa 6 and 7. The applicant decided to exclude the southern

portion of Algoa 1 from the application process and no longer intends to apply for finfish farming at Algoa 1. Algoa 6 is chosen as a suitable site for bivalve production.

2.1.14 Algoa 7 is a new precinct located directly in front of the Ngqura harbour that has been identified as a potential site for finfish culture. The information before me suggests that the applicant undertook a feasibility assessment with key stakeholders in which Algoa 7 was found to be suitable in terms of water depth, shipping traffic and accessibility.

2.1.15 I have duly noted and considered the concerns raised by the appellants under this ground of appeal. The concern comes in because Algoa 7 lies adjacent to the Addo MPA which was promulgated on 28 May 2019 and is the first MPA in South Africa to incorporate a bay environment, exposed rocky headlands and offshore islands. I have noted that the position of Algoa 7 is relative to the Addo MPA and thus requires that a risk adverse, precautionary and adaptive management approach be adopted for finfish farming at this site.

2.1.16 My perusal of the BAR, as well as the Marine Specialist Impact Assessment, indicates that the sensitive habitats were duly considered in the assessment of impacts. On this note, the proximity of Algoa 7 to the Addo MPA was indeed taken into consideration during the assessment for the proposed development. Also, the risks associated with the project, particularly the risk associated with chemical pollution, as well as the impact of organic waste discharge were adequately assessed. Importantly appropriate essential and recommended mitigation measures were provided so as to mitigate the associated risks of the proposed ADZs.

2.1.17 Turning now to the arguments pertaining to the MSP, in terms of the Oceans Economy component of Operation Phakisa, the South African government has committed to undertaking MSP under Initiative 10 of Phakisa's "Marine Governance and Protection Services Delivery Area". The Marine Spatial Planning Act, 2018 (Act No. 16 of 2018) (MSPA) objectives are to '*promote sustainable economic opportunities which contribute to the development of the ocean economy through coordinated and facilitated good ocean governance*'. A well-managed, participatory and effective marine spatial planning process can contribute towards integrating and balancing the provision of ocean ecosystem

services without compromising the ecological integrity of the marine ecosystems on which such services depend.

2.1.18 The Department is currently in the process of developing a MSP for Algoa Bay in terms of the MSPA. I find that the importance of considering this and future legal ramifications in the decision-making process have been highlighted in the Impact Statement under Chapter 2 of the BAR. Moreover, decisions regarding development in the marine domain, such as the proposed ADZs are to be made with co-operative governance processes in mind, taking account of relevant MSP legislation. In this respect, section 3 (2) of the MSPA provides "*Any activities requiring any right, permit, permission, licence or any other authorisation issued in terms of any other law must be consistent with the approved marine area plans*"

2.1.19 Turning now to the arguments pertaining to alternatives, regarding the Swartkops Estuary rehabilitation, this usually occurs guided by estuarine management plans, which are drafted in terms of the National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008).

2.1.20 Site selection is a huge contention in these appeals. I find that page 5 of the BAR specifies that the site selection criteria included the following:

2.1.20.1 **Distance from a suitable port.** A suitable port is considered one which is able to accommodate a 15m work boat and falls within 20km of the proposed site. A greater distance, or the lack of a port to accommodate such a vessel eliminated a location;

2.1.20.2 **Water depth.** A balance between the minimum required water depth for flushing waste (international standards are at least 5 m below the bottom of the cage) and the increasing cost of mooring in deeper water. To make it economically viable, it was considered that inshore cages should have a water depth between 20m and 60m and offshore cages between 30m and 150m. All shallower or deeper were excluded;

2.1.20.3 **Water temperature.** Optimal growth of likely SA species (kob, yellowtail, grunter) trading off against parasite / disease prevalence. Locations where temperature fluctuations are known, or water is too cold or hot for line fish were eliminated;

2.1.20.4 **Upwelling cells**. Upwelling can create temperature shocks which negatively affects growth and health of a cultured stock. As such, the known locations for such upwelling cells were eliminated;

2.1.20.5 **Exposure to waves**. Extreme sea conditions can damage cages and decrease the service frequency of the facility. Areas with high wave action exposure were thus eliminated;

2.1.20.6 **Turbidity and pollutants associated with river mouths**. Outflow from river mouths could potentially deform cages and damage moorings, and rivers that carry high pollutant concentrations could be hazardous for fish. As such, the locations of such river mouths were buffered and excluded as suitable locations;

2.1.20.7 **Harmful algal blooms**. Algal blooms which occur frequently and for long periods can impact on the survival, growth rate and health of cultured stock. The known locations of such blooms were therefore excluded as potentially suitable areas;

2.1.20.8 **Reef areas and sensitive marine habitats**. Reefs and sensitive habitats, especially rocky areas, can be severely impacted by cultured operations. As such, these habitats were excluded from the site selection options. Sandy substrates have less diversity and are less sensitive to impacts from waste and mooring;

2.1.20.9 **Marine Protected Areas (MPA's)**. MPA's fulfil conservation, research and socio-economic roles and should remain as pristine as possible. Proclaimed MPAs were therefore mapped and an ADZ was only considered in proximity to an MPA if the MPA Managers Forum agreed to exclude the area from the MPA;

2.1.20.10 **Archaeologically important shipwrecks**. Mooring and anchoring required for fish farms may damage archaeologically important precincts. Unfortunately, due to their heritage / cultural value, the location of most shipwrecks was not disclosed to the public and could therefore not be mapped. Known wrecks were however considered and excluded from the project locations. Reefs pose a navigation risk, which means that a higher number of historically important shipwrecks could occur in these areas. Excluding reef habitat from the potential precincts may mitigate impact on archaeologically important shipwrecks.

2.1.20.11 **Existing commercial activities**. To minimise user conflict, no precincts were placed in known fishing, mining and shipping precincts.

2.1.21 My perusal of the BAR, particularly section 3.5 which deals with the identification of potential ADZ sites in Algoa Bay, suggests that the applicant duly considered alternative sites during the assessment process. The type of development is based on multiple comprehensive studies which considered the most suitable options for the bay itself, namely, the best option for development. I thus cannot find merit in the contentions pertaining to inadequate assessment of alternatives.

2.1.22 For the reasons above, this ground of appeal is dismissed.

2.2 Impacts unto penguins

2.2.1 Many of the appellants contend that the proposed ADZs will impact on the African Penguin colony at the St Croix Island. The first appellant contends that the penguin colony has seen a dramatic decline in population numbers. The first appellant expresses concern that there will be less prey availability for the penguins in the area due to the fact that the finfish farm activities will depend on the same prey species of fish that the penguins feed on. This appellant also expresses concern relating to the possibility of contamination of hormones affecting the growth and reproduction cycles of the penguins. The fifth, sixth, seventh, thirteenth, sixteenth, thirty-third and thirty-fourth appellants also raise concern that the proposed ADZ will impact the breeding of the penguins and local dolphins.

2.2.2 The twenty-second appellant contends that the specific impact on the populations of African penguins and cetaceans that utilize the St Croix Island group for breeding and mating purpose, has not been considered. It is stated that the penguin colony has experienced a significant decline of 30 to 40% in recent years and now number in the region of 4500 breeding pairs, which represents 30% of the species remaining breeding pairs. In addition to this, this appellant refers to the draft Biodiversity Management Plan for the African Penguin which highlights the declining status of the African penguin and the need to enact coordinated actions amongst various stakeholders which would seek to save the species. On this note, it is argued that it is contradictory that the Department is on the one hand seeking to coordinate actions that seek to save the African penguin and on the other hand insist on finfish farming in a location that would reasonably appear to counter

the very same objective. According to WESSA, this contradicts NEMA's call for "integrated environmental management".

2.2.3 The twenty-fourth appellant contends that any development less than 2 km from the main breeding island of the African penguins has to be assessed and studied in detail so as to determine what the impact of that specific development will be on the penguins. This appellant further contends that the development at the Algoa 7 precinct is directly within the foraging areas of the penguins and the movement of vessels to and from this area will cut across their areas of hunting. In addition, it is argued that no specialist studies have been done to determine the impact on the African penguins at the main breeding colony in South Africa.

2.2.4 The twenty-fifth and twenty-sixth appellants contend that penguins can perhaps get caught in the netting or get sick from eating fish with disease or alternatively have less fish to eat. The appellants contend that nowhere is this mentioned as a considerable concern.

2.2.5 In response to this ground of appeal, the applicant states that the impacts of additional shipping traffic associated with the development of the ADZs on penguins *per se* are considered to be minor and were not explicitly assessed in the BAR. The applicant states that the Marine Specialist Impact Assessment did indeed consider the proximity of the Algoa 7 precinct to the seal and bird islands and within known feeding areas for some piscivores (e.g. penguins, gannets, dolphins). The applicant states that the assessment suggests that potential impacts will be more significant at Algoa 7 than at the Algoa 1 Option 1 site. According to the applicant, monitoring is required to confirm frequency of interactions and to assess the effectiveness of mitigation.

2.2.6 The applicant states that due to the proclamation of the Addo MPA, which includes the St Crox Island group, feeding grounds of penguins and other seabirds will be protected from over exploitation and the applicant has the mandate to regulate the fishing sector, protect the environment and develop the aquaculture sectors alike and will not jeopardise the one sector to promote the other. In addition to this, the applicant states that section 4.1.5. of the Marine Specialist Impact Assessment assesses the marine ecological impacts associated with the proposed ADZs.

2.2.7 In addition to the above, the applicant states that the impacts on birds (as well as mammals and turtles) with regards to entanglement and habitat modification were assessed in section 4.1.5.1.5 of the Marine Specialist Impact Assessment. According to the applicant, the impact has been rated as low after the implementation of the following mitigation measures:

2.2.7.1 Do not locate ADZ sites in important cetacean habitats.

2.2.7.2 Ensure all mooring lines and nets are highly visible under water (use thick lines and bright antifoulant coatings).

2.2.7.3 Keep all lines and nets tight through regular inspections and maintenance.

2.2.7.4 Ensure that mesh size on primary and secondary nets does not exceed 16 cm stretched mesh, use square mesh.

2.2.7.5 Establish a rapid response unit to deal with marine organism entanglements (collaboration with the South African Whale Disentanglement Network for entanglement of cetaceans).

2.2.8 In addition to the above, the applicant states that section 4.1.5.1.5 of the Marine Specialist Impact Assessment assessed the interaction of piscivorous (fish-eating) animals, including birds, with the proposed finfish cages. According to the applicant, the significance of this impact at Algoa 7 was rated as medium after the implementation of the following recommended mitigation measures:

2.2.8.1 Install and maintain suitable predator nets (sufficient strength, visibility and mesh size, above and below water line).

2.2.8.2 Install visual deterrents.

2.2.8.3 Store feed so piscivores cannot access it and implement efficient feeding strategy.

2.2.8.4 Remove any injured or dead fish from cages promptly.

2.2.8.5 During harvesting of stock, ensure that minimal blood or offal enters the water.

2.2.8.6 Implement mitigation measures as for entanglement impacts.

2.2.8.7 Develop a protocol for dealing with problem piscivores in conjunction with experts and officials.

2.2.8.8 Maintain a record of all interactions with piscivores.

2.2.9 In addition to the above, the applicant explains that it is not feasible to conduct a separate impact assessment for individual species as impacts are assessed according to categories of impacts, such as entanglement, habitat modification, use of chemicals and antifoulants etc. The applicant avers that the mitigation measures are critical in the impact assessment process and that these would not change if penguins are assessed separately. In addition to this, the applicant states that it is the considered opinion of the specialist that the impact assessment in its current scope is adequate for the environmental process.

2.2.10 In their comments on this ground of appeal, the CD: IEA states that considering the reduced size of the ADZ, in order to effect a reasonable buffer between the development and the MPA, together with the mitigation measures as proposed by the various specialists, the potential impacts of the ADZ on the African penguin colony will be significantly reduced. Furthermore, the CD: IEA advises that the Algoa 7 zone is not expected to significantly impact on the shipping traffic.

2.2.11 The CD: IEA further advises that the specialist studies which were undertaken for the authorised ADZs took into consideration the impacts that the project may have on the biodiversity, including marine life. Furthermore, it is stated that the Ecological Specialist Study makes or provides specific recommendations with regards to the reduction of the footprint of the site and creating a buffer zone between St Croix Island, Bird Island and the proposed ADZ. The CD: IEA indicates that the said study provided the following mitigation measures aimed at reducing impacts of the ADZ:

2.2.11.1 Reducing the footprint of the Algoa ADZ such that a further buffer is created between the islands and the ADZ.

2.2.11.2 Limiting, as far as possible, those factors that could increase the attraction of piscivores to the area (e.g. prompt removal of dead fish).

2.2.11.3 Increased visibility of mooring lines and nets.

2.2.11.4 Mesh size limits.

2.2.11.5 Maintain infrastructure.

2.2.11.6 Regular inspection of stock.

2.2.11.7 Monitoring (farm specific, e.g. stock health; and ecosystem specific e.g. environment, shark movement patterns).

2.2.11.8 Use of appropriate feeds and therapeutants..

2.2.12 The CD: IEA emphasizes that the EA does not include the Algoa 5 precinct which is situated in closer proximity to the St Croix Island.

2.2.13 In evaluating this ground of appeal, it is imperative to mention that Algoa Bay and the associated islands provide shelter, feeding and breeding habitats for numerous bird species, including important conservation species, such as the African penguin, Cape cormorant and Cape gannet. In addition to this, I am aware that the African penguin colony at St Croix Island is the largest in the world. It is thus fundamental to ensure that this species is adequately protected from the impacts associated with the proposed ADZ at the Algoa 7 precinct.

2.2.14 I note that section 4.1.5. of the Marine Specialist Impact Assessment assesses the marine ecological impacts associated with the proposed ADZs. These include, but are not limited to, organic pollution (water quality and benthos), disease transfer (applicable to finfish), entanglement and habitat modification (both bivalve and finfish), impact of chemicals used in aquaculture. I further note that a number of these impacts have been rated of medium significance after the implementation of mitigation measures. Disease transfer in finfish culture was rated very high prior to the implementation of mitigation measures and is reduced to a rating of high after implementation of mitigation measures. In fish cage aquaculture, high stocking densities serve as a breeding ground for disease and parasite infections, thus disease transfer in finfish culture, is an unavoidable risk associated with sea-based aquaculture development. I further note that bivalve culture has a considerably lower impact on the marine environment compared to finfish farming.

2.2.15 The Marine Specialist Impact Assessment describes the conservation status and biodiversity importance of Algoa Bay and takes cognisance of sensitive surrounding habitats in the assessment of impacts. I have considered the contents of the Marine Specialist Impact Assessment and find that it adequately identifies the risks posed to the

penguin and other piscivores. In this respect I find that the applicant was not required to conduct separate impact assessments for individual species.

2.2.16 In addition, I note that the applicant commissioned an Ecological Report, which was prepared by Professor Peter Britz and Professor Warwick Sauer of Rhodes University, dated August 2016. This report provides that "*piscivores are frequently attracted to the large concentrations of fish and food in sea cages, as well as attracted to other concentrations of fish also drawn by the cages or waste food settled on the substratum. Attempts to get to the caged fish not only lead to a stress response in cultured fish, but can also result in damaged nets and even entanglement of piscivores*".

2.2.17 Considering such, the abovementioned report recommends certain essential mitigations, which are captured under paragraph 2.2.11 above. I find the mitigations measures to be satisfactory. In light hereof, this ground of appeal is dismissed.

2.3 **Risk of pollution**

2.3.1 The first appellant contends that increasing the industrial activity in the area will enhance noise pollution and thus impact on the critical species. In addition to this, the eighth appellant contends that the mitigation measures to prevent pollution remain poor and their formulation are ambiguous. In this respect, the eighth appellant argues that the pollution mitigation measures do not give clear direction to keep pollution to a strict minimum and threshold amounts of pesticides, and medication should be clearly stipulated in the EA. The fifteenth appellant also raises concern relating to the addition of antibiotics to finfish cages and the pollution of unwanted food in the surrounding waters.

2.3.2 The thirteenth appellant states that they are concerned that they will be negatively impacted by the pollution and smells created by the fish farms. The fourteenth appellant contends that the bunkering operations carried out in Algoa Bay will inevitably lead to another oil spill and no research has been carried out to ascertain the effects of such oil spill on the fish farm.

2.3.3 In response to this ground of appeal, the applicant states that noise pollution associated with the construction or the operation of the finfish operations is not envisioned. The applicant explains that the Algoa 7 site is not expected to impact significantly on shipping traffic and there is also no underwater noise associated with the operation of finfish cages. The applicant further explains that the use of pesticides, antibiotics and medication will be strictly controlled.

2.3.4 In addition, the applicant states that aquaculture farming generally does not generate smells that are atypical of the marine environment. On this note the applicant explains that hydrogen sulphide is produced if organic waste accumulates faster than can be consumed by aerobic bacteria. The applicant states that poor aquaculture facility management can thus lead to accelerated organic waste build-up on the seafloor, which creates an increasingly oxygen poor environment. This environment, according to the applicant, facilitates the growth of anaerobic bacteria, which produce hydrogen sulphide as a by-product which can bubble to the surface. The applicant further advised that the impact of deposition of organic material on the seafloor underneath bivalve farms was assessed in section 4.1.5.2.4 of the Marine Specialist Impact Assessment.

2.3.5 The applicant states that they will not engage in any ship to ship bunkering and does not need to obtain EA for such an activity. According to the applicant, a fuel spill associated with ship to ship bunkering would no doubt have a high impact on any existing aquaculture facility within reach of the oil spill and this risk is covered in more detail in section 8.3 of the BAR.

2.3.6 In their comments on this ground of appeal, the CD: IEA states that a precautionary and risk averse approach is proposed for finfish farming in the Algoa 7 site. The CD: IEA explains that activities in the first year of operation would be limited to pilot operations producing 1000 tonnes finfish per annum for the entire ADZ and not more than three finfish operators will be approved for the pilot phase. This, according to the CD: IEA, will ensure that there is no flurry of activities happening all at once, thus lowering the risk of noise pollution.

2.3.7 In addition, the CD: IEA advises that the following mitigation measures have been included in the EMPr to deal with any accidental oil spills:

2.3.7.1 Contingency plans in the event of accidental spills must be prepared and immediately implemented in the event of a spill.

2.3.7.2 Record all environmental incidents related to aquaculture farm construction / expansion.

2.3.7.3 Coordinate a response to environmental incidents related to aquaculture operations, if necessary.

2.3.7.4 Initiate the emergency response protocol to respond to an environmental incident if it cannot be dealt with at farm level.

2.3.8 In evaluating this ground of appeal, I note that the Marine Specialist Impact Assessment found that one of the primary impacts of cage farming is that untreated wastes, resulting mainly from uneaten food and faeces from fish in sea cages, discharged directly into the sea and represent a potentially significant source of nutrients. The information before me indicates that the following mitigation measures have been recommended to minimise the build-up of organic material under the bivalve farm:

2.3.8.1 Select sites favouring well-flushed, deep and productive areas.

2.3.8.2 Implement monitoring of the immediate water column around the precincts or specific farms for key plankton parameters.

2.3.8.3 Implement monitoring of bio deposition and physico-chemical changes in seabed properties at the farmed site relative to undisturbed control sites and compile annual monitoring reports.

2.3.8.4 Minimise biofouling as much as possible.

2.3.8.5 Cleaning of biofouled infrastructure (ropes etc.) must be conducted in such a way as to minimise deposition to the seafloor beneath the farms.

2.3.8.6 Avoid high density culture (overcrowding).

2.3.9 The Marine Specialist Study also provides the following mitigation measures in the use of therapeutants:

2.3.9.1 Use only approved veterinary chemicals and antifoulants.

2.3.9.2 Where effective, use biodegradable alternatives.

2.3.9.3 Use the most efficient drug delivery mechanisms that minimise the concentrations of biologically active ingredients entering the environment.

2.3.9.4 Use the lowest effective dose of therapeutants.

2.3.9.5 Malachite Green as a bactericide or fungicide is prohibited.

2.3.9.6 Do not apply antifoulants on site (at sea).

2.3.9.7 Monitoring to determine the intensity of impact.

2.3.10 I am aware that currently there is no evidence that bivalve culture could cause emissions of nuisance smells. Nevertheless, the EMPr does however, make provision for a complaint register. The EMPr further requires that air emissions are minimised and requires corrective action if complaints about unpleasant odours are received.

2.3.11 Condition 51 of the EA provides for monitoring points so as to ensure that should there be pollution detected, action can be taken to correct such. Condition 51 states as follows:

"*Monitoring points must be established before the commencement of farming activities on each site in order to measure pre-farming baseline conditions with observed conditions during the operational phase. The number and placement of these monitoring points, and the parameters measured, must be appropriate to the mariculture activity type (and its by-products) at that site, the benthic habitat at that site, as well as the prevailing environmental conditions (such as the dominant current directions). The information gathered from monitoring points must be used to guide the phased development of each site*".

2.3.12 In addition, I have taken note of the abovementioned mitigation measures specified in the EMPr to deal with any accidental oil spills. I find such measures to be adequate in mitigating the risks associated with possible oil spills. Further to this the EMPr is binding on the applicant. In this respect, condition 13 of the EA provides as follows:

"*The Environmental Management Programme (EMPr) submitted as part of the Application for EA is hereby approved. This EMPr must be implemented and strictly adhered to. Individual operators must compile individual site specific EMPrs for the individual farms*

that are to be leased in the ADZ. The individual EMPrs must be in line with the recommendations of this overarching approved EMPr and the conditions of this EA. The individual EMPrs must be submitted to the ADZ Monitoring Committee (AMC) (see Condition 14 below) for endorsement and to the Department for record keeping purposes, before commencement of operations by the individual operator"

2.3.13 In light of the above, I deem the mitigation measures proposed for pollution control as adequate and acceptable so as to ensure maximum protection of the receiving environment. This ground of appeal is accordingly dismissed.

2.4 **Impacts unto tourism and water sport**

2.4.1 This ground of appeal spans across most of the appellants' appeals. The crux of the contentions centres around the potential loss of valuable beach environment, tourism and consequential decline in economic injection due to the proposed aquaculture activities. Majority of the appellants contend that future swimming marathon events will no longer be possible and tourism will be drastically affected due to the withdrawal of many sporting events. The appellants also contend that the proposed development will stop all efforts of positioning Nelson Mandela Bay as the water sport capital of Africa. The appellants also raise concerns pertaining to the proximity of the Algoa 1 precinct to the swimming beaches.

2.4.2 The twelfth appellant, namely IRONMAN South Africa, contends that the IRONMAN African Championship event is one of only five international IRONMAN Championship events globally. According to this appellant, the event brings in approximately R100 million in direct spend to Gqeberha annually, with 17 hours of live television coverage on SuperSport, valued at R183 million and Facebook Watch doing live streaming to 134 million global viewers. This, according to the appellant is unprecedented exposure and promotion for Gqeberha as a tourism and sport destination. IRONMAN South Africa contends that the proposed development will stop all efforts of positioning Nelson Mandela Bay as the water sport capital of Africa and will cause the cancellation of numerous major sporting events hosted in the Bay.

2.4.3 The seventeenth appellant, namely Nelson Mandela Bay Business Chamber, is of the opinion that a far more extensive and regionally-strategic environmental assessment be conducted to adequately evaluate the impact of this development on the local and regional economy. The appellant states that this comprehensive assessment should incorporate a thorough economy-wide assessment of local and regional jobs likely to not only be created, but also lost as a result of the proposed aquaculture development. This appellant requests that a risk-adverse authority must evaluate whether the external risks of finfish farming are 'worth it'.

2.4.4 The twenty-third appellant, namely Nelson Mandela Bay Tourism, contends that the Summerstrand area is also a popular holiday destination with guesthouses, lodges and self-catering accommodation. This appellant states that the view along the seafront is calming aesthetically and natural and the Cape Recife Nature Reserve is near Summerstrand adding to the natural unspoiled sea, beach and surroundings. According to this appellant, while it is agreed that the visual intrusion of a finfish farm will be greater than bivalves, the intrusion will still be there with the bivalve farm.

2.4.5 In response to this ground of appeal, the applicant states that the marine ecological and visual impacts could have knock-on effects on the economy; these are, however, much lower for bivalve farming when compared to finfish farming and specialist recommendations appear to effectively mitigate against economic losses. According to the applicant, the impact of bivalve farming at the Algoa 1 site has been rated as very low in comparison with the impact of finfish farming at Algoa 1.

2.4.6 The applicant further states that jobs could potentially be lost if tourism and water sports activities are negatively impacted by the proposed development. According to the applicant, job losses are a knock-on effect from visual impacts, water quality impacts, change in behaviour of ocean predators, ecosystem degradation etc. The applicant goes further to explain that job creation is a positive impact associated with the proposed ADZs and is therefore incumbent on preventing knock-on effects on existing jobs.

2.4.7 The applicant explains that various impacts that could have a knock-on effect have been assessed in the BAR and mitigation measures are included in the EMPr which, is a legally binding document. The applicant also explains that it has become apparent that the perceived higher risk of shark encounters alone could potentially have a profound impact on the local economy, however in comparison to finfish culture, bivalve culture is, however, unlikely to attract sharks and stakeholders do not seem to associate bivalve culture with an increased risk of shark encounters.

2.4.8 The applicant further states that the Bell Buoy Challenge is situated just over 500 m away from the boundary of the Algoa 1 precinct where only bivalve farming is authorized. According to the applicant, a mitigation measure has been included to ensure that no maintenance or harvesting occurs on the day of sporting events. The applicant explains that none of the other activities will be impacted by maintenance activities of ADZ vessels and the impact on recreational water sport participants was rated as very low after implementation of mitigation measures for bivalve farming at the Algoa 1 precinct.

2.4.9 In their comments on this ground of appeal, the CD: IEA states that the comparative assessment in the socio-economic study for the proposed ADZs found that the impact on tourism may be negative, however; it will not be an overwhelming effect. The CD: IEA states that the total cost of loss cannot be fully quantified and it should however be noted that the study also found that the benefits for finfish farming and bivalve farming can be realised locally for the region especially looking at the investment that the ADZs will bring to the local economy. Furthermore, the CD: IEA states that the development of a profitable local food and farming infrastructure industry in South Africa would assist in enhancing the positive impact of the proposed ADZs.

2.4.10 The CD: IEA is of the opinion that the Socio-Economic Study that was undertaken for the ADZ was extensive in its research and attempting to find a position that is beneficial to all parties.

2.4.11 In evaluating this ground of appeal, I have noted section 9.5.2.2 of the BAR which deals with competitive water sport events, lifesaving and festivals. This section describes all water sport events that occur on the Gqeberha beaches. I have noted the map included in

Figure 31 of the BAR and shows that none of the events overlap with the proposed Algoa 1 site and none occur within 10km of the Algoa 7 site.

2.4.12 In the appeal decision taken by the previous Minister Dr B E E Molewa, it was decided that the applicant is to undertake a detailed assessment of the feasibility of Algoa 5 as a preferred alternative; a detailed analysis of the projected revenue and employment opportunities likely to be created by the proposed project, measured against the perceived loss in revenue and employment opportunities as a result of the proposed project at Algoa 1; and a detailed comparative assessment on the feasibility of Algoa 1 and Algoa 5.

2.4.13 The new application process was started by the applicant in compliance with the 2014 EIA Regulations. The applicant commissioned three studies, which have been included in Appendix D5 of the BAR. A detailed costing of the potential socio-economic impact of the ADZ has not been completed. Instead, a social choice trade-off survey was undertaken by Mr Peter Britz. I further note that Mr Peter Britz from the Rhodes University, as the lead author on the comparative studies, responded to the concern that a quantitative cost-benefit analysis would be required by stating that: "*The socio-economic report consisted of two components which need to be read together, visibly 1) the social choice survey which modelled the perceived negative/positive environmental and recreational effects establishing an Aquaculture Development Zone and 2) a detailed economic analysis of the feasibility of aquaculture in Algoa Bay which included a realistic projection of the production potential of the sites, income, costing, and jobs. The economic feasibility analysis which was compiled by aquaculture industry experts is quantitative and considered robust based on market demand, real costs and prices. Read together, the two components of the socio-economic report substantively address the Minster's brief and provide a basis for her making a decision.*"

2.4.14 So as to mitigate the risks posed to the economy, the following benefit enhancing measures have been provided for finfish farming:

2.4.14.1 Use local and regional labour (Nelson Mandela Bay Municipality, Sarah Baartman District Municipality).

2.4.14.2 Preferentially employ previously disadvantaged individuals.

2.4.14.3 Develop a strategy to engage local businesses and communities.

2.4.14.4 Procure services from small businesses within the Algoa Bay area or from other areas within the NMB Municipal area or the Eastern Cape as far as possible.

2.4.14.5 Invest in production of feed and infrastructure within South Africa (i.e. reduce reliance on imports)

2.4.15 In addition to the above, the following benefits enhancing measures were provided for bivalve farming:

2.4.15.1 Use local and regional labour (Nelson Mandela Bay Municipality, Sarah Baartman District Municipality).

2.4.15.2 Preferentially employ previously disadvantaged individuals.

2.4.15.3 Develop a strategy to engage local businesses and communities.

2.4.15.4 Procure services from small businesses within the Algoa Bay area or from other areas within the NMB Municipal area or the Eastern Cape as far as possible.

2.4.15.5 Bivalve farming at Algoa 6: minimise effluent pollution in the bay as well as implementing an 'early warning'.

2.4.16 In terms of need and desirability, the proposed project could indirectly improve food security by providing job opportunities and contributing to the local and regional economy. Furthermore, the proposed project could contribute to import substitution and therefore create local opportunities instead of purchasing products where socio economic impacts are realised elsewhere. Emerging trends, which are also applicable to South Africa have shown that aquaculture, including marine finfish culture, could positively contribute to addressing the following:

2.4.16.1 Increasing demand for fish products in the coming decades as a result of continued growth in the world population;

2.4.16.2 Major increases in fish food production are forecasted to come from aquaculture;

2.4.16.3 Lack of fresh water and space; and

2.4.16.4 Marine aquaculture holds potential for sustained growth due to declining fishing catches.

2.4.17 I am of the view that the potential impacts unto sport, tourism and the economy have been adequately assessed in the assessment process. In addition, the benefits associated with the proposed project is adequately explained in the BAR. In addition, I find that suitable essential and recommended mitigation measures have been provided in the EMPr.

2.4.18 As a result of the above, this ground of appeal is accordingly dismissed.

2.5 **Risk of shark attraction**

2.5.1 This ground of appeal spans across most of the appellants' appeals. The crux of the contentions centres around the potential risks associated with shark attraction to the proposed ADZs. The appellants contend that there will be an increased risk of shark attacks as a greater number of sharks will be attracted to the area where food is more readily available. It is contended by majority of the appellants that due to the proposed location of the Algoa 7 cages, the actual risk of fatal shark encounters will be significantly increased yet this has not been considered during the assessment process.

2.5.2 The twelfth appellant, namely IRONMAN South Africa, contends that attracting predator fish and sharks to the waters used for the swim leg of the IRONMAN African Championship as the Aquaculture Zone will result in the water being declared unfit for the event by international and local standards. The thirteenth appellant argues that the disabled community will be denied access to the ocean as it will become too dangerous, given the increased shark activity along the beachfront. The fourteenth appellant, Zwartkops Conservancy, states that fish farms are known to attract sharks.

2.5.3 The sixteenth appellant, Lifesaving South Africa, contends that the lifesaving community will face huge risks as their voluntary beach patrols will become dangerous, due to increased shark activity. In addition, it is contended that the water sport community will be denied access to the ocean as it will become too dangerous, given the increased shark activity along the beachfront. The twentieth appellant, Mr Adrian de Villiers, argues that the safety and wellbeing of bathers and beach eco-tourism is more important than fish and oyster/muscle farms and the applicant has overlooked the danger of great white sharks

being drawn into Algoa bay. The twenty-second appellant, WESSA, contends that the applicant failed to consider the real risk of shark encounters with bathers and open water users off the northern beaches.

2.5.4 In response to this ground of appeal, the applicant states that fatal shark encounters are rare and stochastic events and hence very difficult to predict. The applicant states that finfish cages have the potential to attract sharks however data on the influence of fish cages on large shark behaviour is scarce. The applicant explains that this issue is discussed at some length in the Marine Specialist Impact Assessment which states as follows:

"*Algoa Bay is the eastern most distribution of the Cape fur seal and breeding takes place on Black Rocks (Mills & Hes, 1997). The presence of this breeding colony may act as an important factor for the aggregation of Great white sharks (Carcharodon carcharias), which are known to target seal breeding colonies as feeding grounds (Kock et al 2013, Hewitt et al 2018). While a range of sizes of white sharks can be found around Seal Island, the inshore areas of Algoa Bay are home to the greatest proportion of young-ofyear sharks (Dicken & Booth 2013)*".

2.5.5 The applicant states further that the Marine Specialist Impact Assessment assessed the impact of the development on shark populations and predators in general and recommends the installation of predator nets, which prevents sharks from gaining access to the cages. According to the applicant, monitoring of shark movements and implementing a shark spotter programme would constitute a further mitigation measure. The applicant points out that it is in the farmer's best interest to prevent predators from gaining access to the cages, as stock losses would significantly impact their business. In addition, the applicant explains that research by the leading South African shark scientists has shown that positive conditioning can only arise if white sharks gain significant and predictable food rewards.

2.5.6 In addition to the above, the applicant reiterates that the Algoa 1 precinct is only considered for bivalve farming and not finfish farming. According to the applicant bivalves

extract particles from the water column and are therefore referred to as filter feeders and consequently, bivalves don't have to be fed. The applicant explains that sharks have been shown to be attracted to activity in the water and the smell of food, thus in comparison to finfish culture, bivalve culture is therefore unlikely to attract sharks at the Algoa 1 Option 1 site. Regarding the Algoa 7 site, the applicant states that this site is approximately 3 km offshore and thus should sharks be attracted to the fish cages this will be relatively far from the nearest bathing beaches.

2.5.7 In their comments on this ground of appeal, the CD: IEA states that the Marine Specialist Impact Assessment found that shark encounters /attacks are rare events and hence very difficult to predict. The study, according to the CD: IEA, recommends monitoring of shark movements and implementing a shark spotter programme would constitute a further mitigation measure. It is stated that the Marine Specialist Impact Assessment highlighted that marine predatory fish and sharks are frequently attracted to fish farms due to not only the fish and food in the sea cages, but also the concentration of other fish attracted by the caged fish and food waste. The CD: IEA states that the threat of sharks to humans was assessed under possible impacts on recreational water sport participants with the significance and consequences of the impact rated as Low and Medium at the Algoa 1 site.

2.5.8 In evaluating this ground of appeal, I have noted that Alternative Option B, which proposes bivalve farming at Algoa 1 Option 1 (Summerstrand site) and Algoa 6 (PE Harbour site), as well as finfish farming at Algoa 7 (Ngqura Harbour site), constitutes the best practicable environmental option for Algoa Bay. Alternative Option B has a greater potential with regards to positive socio-economic impacts, while also ensuring that user conflicts with the existing tourism and water sport sectors are significantly reduced.

2.5.9 The information before me suggests that in assessing the potential increased real risk of shark encounters, the applicant consulted Dr Alison Kock during the initial 2013 assessment, who is a prominent Great White Shark expert in the country. Because fatal shark encounters are rare and stochastic events and hence very difficult to predict, Dr Alison Kock was unable to provide definitive answers. Data on the influence of fish cages on large shark behaviour is scarce, however they are undoubtedly attracted to fish cages

at times. How this potentially translates to the risk to bathers and swimmers is unknown. Nevertheless, the Marine Specialist Impact Assessment, on page 55, provides for essential mitigation measures to combat piscivorous mammals from interfering with finfish cage culture. These mitigation measures are as follows:

2.5.9.1 Install and maintain suitable predator nets (sufficient strength, visibility and mesh size, above and below water line).

2.5.9.2 Install visual deterrents (e.g. tori line type deterrents for birds).

2.5.9.3 Store feed so piscivores cannot access it and implement efficient feeding strategy.

2.5.9.4 Remove any injured or dead fish from cages promptly.

2.5.9.5 During harvesting of stock, ensure that minimal blood or offal enters the water.

2.5.9.6 Implement mitigation measures as for entanglement impacts.

2.5.9.7 Develop a protocol for dealing with problem piscivores in conjunction with experts and officials.

2.5.9.8 Maintain a record of all interactions with piscivores.

2.5.10 It is clear that there is a high degree of uncertainty as to possible changes in the risk of shark attacks, should fish farms be developed. However, the information in the BAR, EMPr and accompanying studies indicates that this potential impact has indeed been adequately assessed with essential mitigation measures prescribed. I deem these mitigation measures to be adequate considering the nature of the proposed development. I further find that the installing and maintaining of suitable predator nets designed to exclude large predators from entering the fish cages (and getting a food reward) will likely lower the likelihood of sharks receiving a food reward from within a fish cage. On this note, I am aware that condition 47 of the EA provides as follows "*Appropriate predator nets and visual deterrents must be installed and maintained for finfish culture. A protocol for dealing with problem piscivores in conjunction with experts and officials should be developed*".

2.5.11 In light of the above, this ground of appeal is dismissed.

2.6 Impacts associated with alien species and impacts unto wild fauna and flora

2.6.1 The third appellant, Cllr Tracey Weise, questions how the introduction of alien species, namely Pacific Oyster & Mediterranean Mussel, will affect the wild species within Algoa Bay and the impacts these mentioned species will have on indigenous species within the Bay. In addition, this appellant questions how the construction of equipment will affect the ecological diversity and dynamic of the indigenous species within the Bay. It is further argued that no clarity has been given on how wild fauna, both in and out the water, will be prevented from being tangled within the dropped lines on which the bivalves will be cultivated.

2.6.2 The eighth appellant, Dr Lorien Pichegru, contends that farming alien fish species puts at risk the local stocks, as escapees can interbreed with the natural stock and compete for food and habitat with the indigenous species. The eighth appellant contends that the EA shows that alien species are to be farmed when the applicant indicated only indigenous species will be farmed. The fourteenth appellant, Zwartkops Conservancy, states that they do not believe sufficient research has been carried out to ascertain the impact of non-indigenous fish and bivalve spawn being carried into the reserve by the prevailing current. The twenty-second appellant alleges that the applicant and the CD: IEA have not considered in full the impact of disease transfer onto the wild stock of the Swartkops Estuary.

2.6.3 In response to this ground of appeal, the applicant states that they submitted an application for indigenous and alien bivalve species for Algoa 1 and 6. The applicant further states that the potential impact of farming Mediterranean Mussel (and Pacific Oyster) have been assessed in the Marine Specialist Impact Assessment under section 4.1.5.2.1. The applicant adds that the Mediterranean Mussel is widespread along South Africa's coastline and the impact of farming Mediterranean Mussel was rated as very low, since mussels are not actively seeded onto ropes, which means that no additional organisms are introduced into the marine environment. The applicant further states that the ropes will be left to be colonised by naturally occurring offshore mussel larvae pools.

2.6.4 According to the applicant, the potential impact of introducing Pacific oyster was rated as 'medium' before and 'low' after the implementation of mitigation measures. The applicant

adds that it is noteworthy that despite at least a decade of oyster mariculture in the vicinity of Algoa 6, wild populations of the Pacific oyster have not yet been detected in Algoa Bay. The applicant further points out the following mitigation measures to combat the impact of introducing alien fouling species to the wild and to make provision of habitat for alien fouling species:

2.6.4.1 Produce oysters from own stock as far as possible and minimise importing of spat.

2.6.4.2 Spat must undergo a visual inspection and pressure cleaning if necessary, to remove fouling organisms prior to transfer into quarantine tanks.

2.6.4.3 Spat must be quarantined after import prior to release into the grow out baskets.

2.6.4.4 Spat must be accompanied by health and veterinary certificates and guarantees from the supplier country's delegated authority. (this mitigation measure is primarily important for release of alien pathogens and parasites, not marine species)

2.6.4.5 Do not discard fouling organisms and debris removed from farming structures, oysters or mussels into the marine environment (molluscs may have alien fouling organisms growing on their shells). Dispose biological waste at a registered Waste Management Facility/landfill site.

2.6.4.6 Undertake routine surveillance for indications of non-native fouling species on and around marine farm structures and associated vessels and infrastructure.

2.6.4.7 Clean structures and hulls regularly to ensure eradication of pests before they become established.

2.6.5 Regarding the construction of equipment, the applicant states that the construction of finfish cages occurs mainly on land and the infrastructure is towed out to sea and the remaining components are then assembled out at sea. The applicant thus states that it is unlikely that there will pollution noise associated with the construction of the operation of the finfish operations. The applicant further states that the South African Squid Management Industrial Association was consulted and impacts on the squid fishing industry was considered in the final BAR.

2.6.6 Regarding the concern pertaining to entanglement of marine organisms in nets, the applicant states that the impacts on mammals, turtles and birds with regards to

entanglement and habitat modification were assessed in section 4.1.5.1.5 of the Marine Specialist Impact Assessment. The applicant reiterates that the use of pesticides, antibiotic and medication will be strictly controlled.

2.6.7 Regarding the appellants' contentions pertaining to the farming of alien finfish species, the applicant states that their application is for indigenous finfish species only and thus there is an error in the EA on page 7, particularly in the table listing the species authorised for production in Algoa 7. The applicant further points out that the correct list of authorised species is listed under point b on page 6 and the top of page 7 of the EA.

2.6.8 The applicant further indicates that the impacts associated with disease transfer have been assessed in the BAR and the EMPr captured under biosecurity sections 77 to 96 and these impacts have been adequately assessed with mitigation measures provided, which must be implemented to minimise the associated risks.

2.6.9 In their comments on this ground of appeal, the CD: IEA, provides that the impact of the introduction species to be farmed was extensively assessed in the Marine Specialist Impact Assessment, which identified impacts that were specific to bivalve farming and recommended mitigation measures. According to the CD: IEA, various adequate mitigation measures have been recommended for implementation during the life-cycle of the development and these measures have been included in the approved EMPr. The CD: IEA explains that mitigation measures were divided into various phases of the development and conditions have been included in the EA so as to ensure maximum protection to aquatic fauna during the construction phase. The CD: IEA further states that the species proposed for the ADZs were found to be suitable to the area and specialist studies were conducted to ascertain that potential impact on the receiving environment are adequately mitigated.

2.6.10 In evaluating this ground of appeal, I find that the impact of the introduction species to be farmed were extensively assessed in the Marine Specialist Impact Assessment. In addition to this, adequate mitigations measures, which are to be implemented at various stages of the project has been prescribed. These mitigation measures are written into the EMPr,

which has been approved and is binding on the applicant by virtue of condition 13 of the EA.

2.6.11 Turning now to the potential risk of entanglement of marine organisms in the nets, I find that this impact was indeed identified and assessed during the assessment process. This impact has been rated as low after the implementation of the following mitigation measures for finfish and bivalve farming:

2.6.11.1 Do not locate ADZ sites in important cetacean habitats (fortuitously this is the case. Research by Koper et al. 2016 and Karczmarski et al 1999 confirm that the humpback dolphin Sousa plumbea predominantly occurs within a few hundred meters from the shore. Algoa 1 and Algoa 7 are situated 2-5 km offshore).

2.6.11.2 Ensure all mooring lines and nets are highly visible under water (use thick lines and bright antifoulant coatings).

2.6.11.3 Keep all lines and nets tight through regular inspections and maintenance.

2.6.11.4 Ensure that mesh size on primary and secondary nets does not exceed 16 cm stretched mesh, use square mesh.

2.6.11.5 Establish a rapid response unit to deal with marine organism entanglements (collaboration with the South African Whale Disentanglement Network for entanglement of cetaceans).

2.6.12 In evaluating the argument pertaining to disease transmission, I note that this very concern was identified in section 4.1.5.1.1 of the Marine Specialist Impact Assessment. I further note that the risk of disease transmission to wild stocks is assessed as "high" even with mitigation. I further note that this impact assessment considers potential impacts at a regional scale throughout all life stages of the affected fish species and therefore includes the impact on the Swartkops Estuary. It must be noted that the possibility of disease transmission from wild stock to farmed stock, and vice versa, is a risk in every sea-based aquaculture globally. There are however, established methods and treatments to manage disease in aquaculture facilities, which are captured in section 4.1.5.2.3 of the Marine Specialist Impact Assessment. In addition, I have noted that farmed fish are to be stocked only after they are certified to be disease-free and a health certificate is provided with farmed fish.

2.6.13 Turning now to the contentions pertaining to the farming of alien species, I must stress that the EA must be read in conjunction with the BAR and approved EMPr. The information before me suggests that the applicant intends to farm only indigenous finfish. This is also what is stated on page 6 of the EA. However, both pages 7 and 20 of the EA erroneously make reference to Meagre (Argyrosomus regius). In my view, this is a typographic error which does not detract from the overall reasons for approving the EA application. The CD: IEA is directed to remove all references to Meagre (Argyrosomus regius) in the abovementioned EA and thereafter provide the applicant with an amended EA. It is imperative to point out that the amended EA is to be issued as per my direction by the CD: IEA. Therefore, the amended EA may not be appealed in terms of section 43 of NEMA.

2.6.14 In light of the above, this ground of appeal is dismissed.

2.7 **Significant wave heights and extreme weather**

2.7.1 The fourth appellant, E H Schumann, states that the return period for significant wave heights at about 1km from the western side of Algoa 7 was included in a comment submitted in August 2019, and shows that the significant wave 5-year return period is about 5 meters, while every 10 years' significant wave heights of almost 6 meters can be expected. This appellant states that the draft BAR notes that maximum wave heights of 6 meters have been recorded along the surf zone of Algoa Bay. Furthermore, the appellant states that the BAR states that the high swell exposure places Algoa Bay in the commercially experimental "offshore cage aquaculture" category requiring a much higher and more expensive equipment specification.

2.7.2 Based on the above, the fourth appellant contends that it is then inconsistent that the only statement in the EA about the finfish cage structure states that they would be '*constructed of circular flexible high-density polyethylene with multimooring systems*'. This appellant states that it is essential that any potential operator be made aware of the fact that the finfish cages would be situated in a harsh ocean environment, and that they should be expected to cope in conditions where significant wave heights could be over 9 meters.

2.7.3 The fourteenth appellant, Zwartkops Conservancy, contends that it is well documented that extreme weather events are on the increase. This appellant argues that it is quite possible that fish cages could be uprooted from their moorings and destroyed. It is also contended that no research has been carried out on the possible effect of the resultant release of non-indigenous species into the MPA.

2.7.4 The twenty-second appellant, WESSA, contends that the applicant has not raised/considered in full the possibilities that arise from using proxy wave & current data for the Algoa 7 site. It is argued that the Algoa 7 site doesn't benefit from the same level of data input/study as does Algoa 1, specifically when it comes to wave and current data. This appellant contends that wave and current data is essential in determining the possible impact of the operations at the Algoa 7 site on the MPA, the St Croix Islands and the underwater reefs in close proximity.

2.7.5 In response to this ground of appeal, the applicant states that it is fully agreed that future operators should be made aware of all the potential risks, and therefore submits that the BAR and associated appendices have done exactly this. The lack of prescribed details on required cage structure in the EA, according to the applicant, is perhaps to avoid being too prescriptive and hence restrictive for the pioneer mariculture industry. The applicant further states that extreme weather events cannot be avoided, however setting minimum infrastructure specifications is a management response which will be implemented to ensure that all reasonable measures are put in place to ensure that the finfish farm infrastructure is secured. The applicant reiterates that only indigenous finfish is to be farmed.

2.7.6 Regarding the twenty-second appellant's appeal, the applicant states that a key assumption of the marine ecological study was that oceanographic and biological data collected during earlier surveys and at other sites, such as currents and waves at Algoa 2 collected in 2012 were used as a proxy for conditions on Algoa 7. According to the applicant, this is representative of prevailing conditions at the ADZ precincts assessed in this application. According to the applicant, it was assumed there have not been significant climatic or ecological shifts in Algoa Bay over the last decade and a comparative analysis

of data collected during 2012-2013 and 2018, as well as available scientific literature to suggest that this assumption was realistic.

2.7.7 In their comments on this ground of appeal, the CD: IEA states that a precautionary, as well as risk adverse approach should be applied as the operation of an aquaculture farm is in direct conflict with conservation goals of the MPA. The CD: IEA further states that the onus is on each operator to ensure that cages are properly anchored or secured to be able to withstand extreme weather events.

2.7.8 In evaluating this ground of appeal, I note from the BAR, particularly page 5, that exposure to waves was indeed considered when selecting a suitable site for the ADZ. Extreme sea conditions can damage cages and decrease the service frequency of the facility. Areas with high wave action exposure were thus eliminated from the site selection process. I have further noted that section 8.1 of the BAR comprehensively deals with wind and wave exposure. The BAR provides that "*The high swell exposure places Algoa Bay in the commercially experimental "offshore cage aquaculture" category requiring a much higher (and more expensive) equipment specification*".

2.7.9 Overall, wind and wave exposure in Algoa Bay is strong and certainly contributes to the overall low economic feasibility of finfish culture in Algoa Bay. The EA, on page 7 provides that "*Cages for finfish production, constructed of circular flexible high-density polyethylene with multimooring systems.*" I further reiterate that the EA must be read in conjunction with the approved EMPr.

2.7.10 After reviewing the BAR, EMPr and the associated appendices, I cannot find that extreme weather conditions and wave height have not been adequately assessed. For this reason, this ground of appeal stands to be dismissed.

2.8 **The conditions of the previous appeal decision were not met**

2.8.1 The twenty-second appellant, WESSA argues that the status of the original EA process has not been finalized because the conditions of the previous appeal decision dated 18 August 2015, were not met. The appellant contends that the requirement for the socio-

economic study was never met, yet a new assessment process was initiated. In addition to this, the appellant contends that the previous Minister, Dr. B E E Molewa, did not make a ruling on the grounds of appeals and those original concerns remain unconsidered and thus should have been considered before a new application was launched. According to this appellant, by submitting an entirely new EA application, the applicant in effect circumvents the previous decision and benefits from the subsequent lesser conditions of the new 2014 EIA Regulations.

2.8.2 In response to this ground of appeal, the applicant states that the new application process was started with the relevant information submitted. The applicant states that there are fundamental differences between this application and the previous application with different alternatives presented and it is therefore not procedurally fair for the appellant to raise issues that do not form part of the current application. Further to this, the applicant quotes regulation 46 of the 2014 EIA Regulations which states that: "*No applicant may submit an application which is substantially similar to a previous application which has been refused unless the appeal on such refusal has been finalised or the time period for the submission of such an appeal has lapsed.*" In addition, the applicant holds a view that the previous appeal period was indeed concluded by way of the appeal decision dated 18 August 2015.

2.8.3 The applicant explains they were requested by CD: IEA to submit a new application in terms of the 2014 EIA Regulations and the requirements listed in Regulation 46 have been met. The applicant reiterates that in 2016, they commissioned the three studies, which have been included in Appendix D5 of the BAR and the detailed costing of the potential socio-economic impact of the ADZ has not been completed, instead, a social choice trade-off survey was undertaken by Britz.

2.8.4 In their comments on this ground of appeal, the CD: IEA states that in mid-2016, the applicant commissioned three comparative assessments, including a detailed feasibility study, a socio-economic assessment and a marine ecological assessment for finfish farming at Algoa 1 and 5. The CD: IEA explains that the Algoa 5 site was screened out and has not been taken forward as a potential precinct in the current application process. It is

further explained that precincts considered, in this application, include one precinct from the previous process, namely Algoa 1 and two new precincts, designated as Algoa 6 and 7.

2.8.5 In evaluating this ground of appeal, I have noted that in the appeal decision taken by the previous Minister Dr B E E Molewa, it was decided that the applicant is to undertake a detailed assessment of the feasibility of Algoa 5 as a preferred alternative; a detailed analysis of the projected revenue and employment opportunities likely to be created by the proposed project, measured against the perceived loss in revenue and employment opportunities as a result of the proposed project at Algoa 1; and a detailed comparative assessment on the feasibility of Algoa 1 and Algoa 5.

2.8.6 Regarding Algoa 5, I note that the economic feasibility study found that conditions at Algoa 5 were sub-optimal for economic aquaculture and mitigation measures would be impractical or uneconomic to implement, which renders the proposed site not economically competitive. Furthermore, Algoa 5 was located in the middle of the recently promulgated Addo Marine Protected Area. For these reasons, Algoa 5 was screened out and has not been taken forward as a potential precinct.

2.8.7 Regarding Algoa 1, the beaches and marine environment near Algoa 1 Option 1 precinct constitute the main area where water sport events and activities take place in Algoa Bay. Thus, in the absence of a detailed, quantitative socio-economic study, it was decided that a precautionary approach should be applied and the applicant no longer intends to apply for finfish farming at Algoa 1 Option 1 and is rather applying for bivalve culture (oyster and mussels) only at this site. This, in my opinion, relieves the applicant from commissioning a detailed costing of the potential socio-economic impact of the finfish ADZ at the Algoa 1 precinct.

2.8.8 Algoa 7 is the new precinct located directly in front of the Ngqura harbour that has been identified as a potential site for finfish culture. Prior to the start of the project, the applicant undertook a feasibility assessment with key stakeholders in which Algoa 7 was found to be suitable in terms of water depth, shipping traffic, and accessibility. Considering the location of Algoa 7, I hold a view that the requirement to commission detailed costing of the

potential socio-economic impact is indeed redundant. In addition, it must be noted that this application is an entirely new application which is independent from the previous application. Consequently, I am inclined to dismiss this ground of appeal.

2.9 **Ineffective mitigation measures and failure to consider I&APs' comments**

2.9.1 The twenty-second appellant contends that the applicant has not brought to the attention of the CD: IEA the key aspects raised by I&APs or alternatively the decision did not give due consideration to such matters. In addition to this, the appellant is deeply concerned by the conclusion of the CD: IEA that '*any potentially detrimental environmental impacts resulting from the authorised activities can be mitigated to acceptable levels*'. This, according to the twenty-second appellant, strongly suggests that the CD: IEA did not take into full consideration the I&APs low confidence in mitigating the high to medium risk impacts of finfish farming, especially at the Algoa 7 precinct, and the implications of this for the marine environment. On this note, the appellant highlights the comments they made on various mitigation measures.

2.9.2 In response to this ground of appeal, the applicant states that the basic assessment process has put forward the impacts and mitigations for the development of the proposed ADZs and it is for the CD: IEA to consider the independent assessment put forward in coming to a decision on the application. In addition to this, the applicant states that all inputs by the I&APs have been duly considered in the basic assessment process and have been responded to as per the legislated requirements.

2.9.3 In their comments on this ground of appeal, the CD: IEA states that all comments from I&APs and responses thereto were taken into consideration and as a result thereof, some of the ADZ precincts, which were part of the initial process, were taken out.

2.9.4 In evaluating this ground of appeal, I have noted that the various mitigation measures have to be implemented throughout the life-cycle of proposed development. These mitigation measures are derived from relevant studies and assessments. I thus cannot find merit in the contention that the proposed mitigation measures are of low confidence. In addition,

the information before me suggests that all comments received from I&APs during the assessment process, as well as the responses thereto, were included in the final BAR submitted to the CD: IEA for consideration and decision making purposes. There is nothing before me to suggest that comments by I&APs were not considered by either the applicant or the CD: IEA. In light hereof, this ground of appeal is dismissed.

3 DECISION

3.1 In reaching my decision on the appeals lodged against the decision of the CD: IEA to issue the EA to the applicant in respect of the abovementioned application, I have taken the following into consideration:

3.1.1 The appeals lodged by the appellants;
3.1.2 Responding statement submitted by the applicant on 18 August 2020;
3.1.3 The comments submitted by the CD: IEA on 17 August 2020;
3.1.4 The outcome of the site inspection conducted on 1 December 2020;
3.1.5 The information contained in the project file (14/12/16/3/3/1/2055) with specific reference to the final BAR, EMPr, Marine Specialist Impact Assessment, Ecological Report, the socio-economic report and EA dated 26 February 2020; and
3.1.6 The previous appeal decision dated 18 August 2015.

3.2 In terms of section 43(6) of NEMA, I have the authority, after considering the appeal, to confirm, set aside or vary the decision, provision, condition or directive or to make any other appropriate decision.

3.3 Having carefully considered the abovementioned information and in terms of section 43(6) of NEMA, I have decided to dismiss the grounds of appeals. The EA issued by the CD: IEA on 26 February 2020, is to be amended by removing all references to Meagre (Argyrosomus regius). The CD: IEA is accordingly directed to issue an amended EA to the applicant, as alluded to above.

3.4 In arriving at my decision on the appeal, it should be noted that I have not responded to each and every statement set out in the appeal and/or responses thereto, and where a particular statement is not directly addressed, the absence of any response thereto should not be interpreted to mean that I agree with or abide by the statement made.

3.5 Should the appellant be dissatisfied with any aspect of my decision, they may apply to a competent court to have this decision judicially reviewed. Judicial review proceedings must be instituted within 180 days of notification hereof, in accordance with the provisions of section 7 of the Promotion of Administrative Justice Act, 2000 (Act No.3 of 2000) (PAJA).

MR R O LAMOLA

MINISTER OF JUSTICE AND CORRECTIONAL SERVICES

DATE: 18/06/2021