

SOCIO-ECONOMIC CONSIDERATION FOR EXPLORATION AND PROSPECTING ACTIVITIES IN SOUTH AFRICAN SEA AREA 14C

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Report prepared for:

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TRANS ATLANTIC
DIAMONDS

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EXECUTIVE SUMMARY

Anchor Environmental Consultants (Pty) Ltd were appointed to undertake a socio-economic assessment for Trans Atlantic Diamonds (Pty) Ltd who are applying for a diamond prospecting right for Concession Area 14C, offshore of the Western Cape Coast. The proposed prospecting activity is anticipated to potentially impact coastal communities in the Matzikama municipality, particularly Doringbaai, Strandfontein, and to a lesser extent Lamberts Bay, which falls under the local Cederberg municipality. Demographic profiles for the regional, local and project sites are provided. A brief overview of the economic performance is discussed and placed in relation to the potential impacts associated to the proposed survey area. Our approach included the analysis of the local economy, available literature, as well as District and local documents. Regional, local, and district frameworks and strategies were also included to ascertain socio-economic value of the proposed activities and future recommendations for the project site (Doringbaai).

Summary of impacts

Table 1-1 summarizes the various socio-economic impacts associated with the proposed TAD prospecting project, to provide a perspective of the net societal benefits and costs. A total of 8 socioeconomic impacts were identified as potentially being associated with the proposed survey/prospecting activities. Negative potential impacts associated with the proposed activities are mostly assessed as Very Low significance. After mitigation measures were applied, negative potential impacts associated with the proposed activities were reduced to Insignificant. Potential impacts associated to the seismic survey and sampling/prospecting activities were identified as: Temporary disturbance of marine resources and exclusion of fishing vessels from the concession area 14C impacting fisher group users (i.e., 1) Tuna pole and longline, 2) Traditional Linefish Sector, and 3) Small pelagic Purse Seine Fisheries); 4) Impact on Local Households; 5) Impact on local tourism and businesses; 6) Increase in local and regional socio-economic performance; 7) Impact on Sense of place and Health and Wellbeing; and 8) Impact on local crime. The former five impacts are anticipated to negatively affect the livelihoods and household income of marine fisheries group and the operational success of the Doring Bay Abalone aquaculture facility. Although, these potential impacts associated to the proposed prospecting activity are of very low significance, it should be emphasized that the influence regarding the decision on the application of the proposed prospecting activity should take into account the poor economic performance of the coastal community Doringbaai, and the communities' high dependence on marine resources to support household income and livelihoods.

Table 1-1 Potential impacts identified associated with the prospecting activities after mitigation measures are applied.

Consideration	Impacts with mitigation	Consequence	Probability	Significance	Status	Confidence
Primary sector	Impact 1: Small Pelagic Purse Seine	Very Low	Improbable	INSIGNIFICANT	-ve	High
	Impact 2: Tuna Pole and Long line	Very Low	Improbable	INSIGNIFICANT	-ve	High

Consideration	Impacts with mitigation	Consequence	Probability	Significance	Status	Confidence
	Impact 3: Traditional Line Fisheries	Very Low	Improbable	INSIGNIFICANT	-ve	High
Tertiary sector	Impact 4: Local crime	Very Low	Improbable	INSIGNIFICANT	-ve	High
	Impact 5: Local socio-economic performance	Very Low	Possible	INSIGNIFICANT	+ve	Medium
	Impact 6: Sense of place and Human Wellbeing	Very Low	Improbable	INSIGNIFICANT	-ve	High
	Impact 7: Impact on local tourism and businesses	Very Low	Probable	VERY LOW	-ve	Medium
	Impact 8: Impact on local households	Low	Improbable	VERY LOW	-ve	High

Table 1-2 Potential cumulative impacts identified associated with the prospecting activities after mitigation measures have been applied.

Consideration	Impacts with mitigation	Consequence	Probability	Significance	Status	Confidence
Primary sector	Impact 1: Small Pelagic Purse Seine	Medium	Possible	LOW	-ve	Low
	Impact 2: Tuna Pole and Long line	Medium	Improbable	LOW	-ve	Low
	Impact 3: Traditional Line Fisheries	Medium	Probable	MEDIUM	-ve	Low
Tertiary sector	Impact 4: Local crime	Medium	Improbable	LOW	-ve	Low
	Impact 5: Local socio-economic performance	High	Possible	MEDIUM	+ve	Low
	Impact 6: Sense of place and Human Wellbeing	Medium	Improbable	LOW	-ve	Low
	Impact 7: Impact on local tourism and businesses	Medium	Possible	LOW	-ve	Low
	Impact 8: Impact on local households	High	Probable	HIGH	-ve	Low

Project limitation

The authors of the socio-economic consideration assessment had limited interaction with all Interested and Affected Parties (IAPS) and local community representatives in the Doringbaai area. This is largely due to the limited time-period provided by the Department of Mineral Resources prospecting application process. For this reason, an extension to the time-period from the acceptance of the prospecting application to the final submission of the final Basic Assessment Report (BAR) should be considered for future prospecting applications in concession areas located along the South African coastline. This will allow for the inclusion of all stakeholder perceptions and concerns, up to date demographic survey data, and analysis that would otherwise be insufficient for a comprehensive local and municipal economic assessment.

Key perceptions and concerns from stakeholders

From a societal cost-benefit perspective, the general perception of the community representatives and stakeholders contest the proposed prospecting project in concession area 14C. The local communities rely on marine resources for their livelihoods and as a source of income. The community anticipates a negative impact to several fishing industries (Traditional Linefish Sector, Pelagic Purse Seine Fishers, and Tuna Pole and Longline). A time-period to conduct prospecting activities were recommended by several stakeholders to minimise the socio-economic impacts associated to the proposed prospecting activities. To enhance the economic contribution of the prospecting activities, employment opportunities must be created. To compensate for the potential impacts that cannot be mitigated, an economic contribution in the form of financial support (i.e., scholarships, bursaries, and secondary education sponsorships) is recommended.

Key recommendations and Mitigation Measures

It is strongly recommended that mitigation measures be further developed in consultation with local stakeholders so that effective and mutually acceptable mitigation measures can be implemented during the seismic survey, prospecting and future mining phase activities. Communication protocols should inform on all prospecting activities including timelines and impacts. A “living framework” such as a Monitoring and Evaluation Plan (M&EP) for identifying, monitoring, assessing, and evaluating TAD Corporate Social Responsibility (e.g., employment and training opportunities) and socio-economic impacts should be developed. This framework should be developed with IAPs and surrounding community representatives that are potentially impacted by the TAD prospecting project. Adherence to the M&EP is necessary to ensure that socio-economic deliverable are met. In addition, Trans Atlantic Diamonds should aim to incorporate codes of good practice on Broad Based Black Economic Empowerment issued under Section 9 of the Broad Based Black Economic Empowerment Act, Act 53 of 2003, as amended by Act 46 of 2013. This will include skills transfer programmes, job creation, and supporting local service industry organizations such as manufacturing, production and/or packaging services.

Additional compensation and resource support measurements have previously been identified by community members from Doringbaai and Lamberts Bay to reduce the severity of the impacts on the socio-economic performance (see SU 2013; Nthane *et al.*, 2015):

- Skills Development through training programs and formal education opportunities such as financial management skills which was emphasised by the Lamberts Bay fisher’s community.
- Support of local initiatives, investments, and entrepreneurship (e.g., communal vegetable garden and opening of the jetty restaurant in Doringbaai).
- Support the development of a local Lamberts Bay fisheries label and assist in the export of fish locally and internationally. In addition, assist partnership between local fisheries and retail markets.
- Assist local communities in navigating new Small Scale Fisheries Policy structures.
- Assist in the development of a streamlined communication platform between local community, community representatives, stakeholders, and government officials.
- Support the establishment of an annual abalone festival in Doringbaai.

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LIST OF ABBREVIATIONS

Anchor/ AEC	Anchor Environmental Consultants (Pty) Ltd.
BAR	Basic Assessment Report
B-BBEE	Broad Based Black Economic Empowerment
BID	Basic Information Document
CPUE	Catch per unit effort
DEADP	Department of Environmental Affairs and Development Planning
FLO	Fisheries Liaison Officer
GDP	Gross domestic product
GDPR	Gross domestic product
IAP	Interested and Affected Parties
IDP	Integrated Development Plan
LED	Local Economic Development
MMO	Marine Mammal Observer
NDP	National Development Plan
OMP	Operational Management Plan
PAM	Passive Acoustic Monitoring
PSDF	Provincial Spatial Development Framework
RRZ	Rural Restructuring Zones
SDF	Spatial Development Framework
TAC	Total allowable catch
TAD	Trans Atlantic Diamonds (Pty) Ltd
TAE	Total allowable effort
WCDM	West Coast District Municipality

1 INTRODUCTION

Trans Atlantic Diamonds (Pty) Ltd (hereafter referred to as TAD) is applying for a prospecting right for Concession Area 14C, inshore of the Western Cape coast, adjacent to the Doringbaai coastal community. Anchor Environmental Consultants (Pty) Ltd (AEC) were appointed as the Environmental Assessment Practitioner (EAP) to undertake the required Basic Assessment Process and support TAD with this application. AEC has inhouse marine specialist expertise and therefore also undertook this socio-economic impact consideration. Concession area 14C falls under the local Matzikama Municipality and greater West Coast District Municipality (WCDM). The proposed prospecting activity is anticipated to directly impact coastal communities in the Matzikama Municipality, particularly Doringbaai, Strandfontein, and to a lesser extent Lamberts Bay, which falls under the local Cederberg Municipality.

2 APPROACH AND OBJECTIVES

This study aimed to achieve several key objectives in order to assess the socio-economic impact of the proposed prospecting project by TAD. Our approach included the assessment of the projects economic value to identify the potential socio-economic impacts and how to best enhance the positive impacts. Where possible, negative impacts were avoided, minimised, or mitigated, and alternative methods were recommended (e.g., alternative technology and operational time periods). If negative impacts could not be avoided, mitigated, or minimised an offset strategy was recommended to compensate for any socio-economic loss and to restore the socio-economic environment. Socio-economic perspectives of the National, District, and Local Spatial Planning Frameworks were included to contextualise the socio-economic impacts during the operational phase of the prospecting project. The following objectives are included in this study:

- To clarify the potential economic value of the proposed prospecting activities on local and regional economy.
- Present the socio-economic demographic and environment of the District and local municipalities situated close to (approximately 5km offshore) the proposed project site.
- To ascertain key concerns from stakeholders that are interested and or affected by the proposed activities (i.e., collate pre-consultation comments and responses relating to socio-economic issues).
- To determine the potential employment opportunities and Gross Domestic Performance (GDP) of the local and district municipality.
- Provide recommendations that can be included in a monitoring framework to ensure that socio-economic investment associated with the prospecting activities are maintained and evaluated throughout the operational phase.

3 PROJECT ASSUMPTION AND LIMITATIONS

This socio-economic consideration study was based on several assumptions in order to assess the potential impacts of the proposed TAD prospecting project on the socio-economic environment of the local and regional community which included the following:

- The prospecting activity will be operational for no more than a 30-day period;

- The Doringbaai port/harbour will not be utilised for any maritime activities during the TAD prospecting project (from project inception to the end of the operational phase).
- The Saldanha Bay harbour will be used to facilitate all maritime requirements associated to the proposed TAD prospecting project.

Limitations that were identified to assess the socio-economic impacts were as follow:

- This study used the National Census statistics, last updated in 2011. Although this data provided valuable information on the demographic profile of the District and local community, it limited this study's ability to assess the potential socio-economic impacts of the TAD prospecting project on the current economic environment.
- Lack of available research and data on the Doringbaai tourism industry and fishing sector limited this study's ability to assess the potential negative or positive impact on the local socio-economic environment.
- The authors of the socio-economic consideration assessment had limited interaction with all Interested and Affected Parties (IAPS) and local community representatives in the Doringbaai area. This is largely due to the limited time-period provided by the Department of Mineral Resources prospecting application process. For this reason, an extension to the time-period from the acceptance of the prospecting application to the final submission of the final Basic Assessment Report (BAR) should be considered for future prospecting applications in concession areas located along the South African coastline. This will allow for the inclusion of all stakeholder perceptions and concerns, up to date demographic survey data, and analysis that would otherwise be insufficient for a comprehensive local and municipal economic assessment.

4 OVERVIEW OF THE STUDY AREA: ECONOMY AND DEMOGRAPHIC PROFILE

To assess the potential socio-economic impacts of the proposed project it is important to understand the socio-economic context in which the proposed project is to be developed and its potential area of impact. Depending on the scale of the potential socio-economic impacts, it may extend beyond the boundaries of the project. Here, the focus will be placed on the regional, local and project area. The proposed prospecting/survey activity falls within the regional West Coast District Municipality (WCDM) and local Matzikama Municipality, located near Strandfontein in the north and Lamberts Bay to the south, adjacent to the project site, Doringbaai. This socio-economic impact statement will thus consider these regions, focussing on the potential impact on the project site.

4.1 Regional Study Area

4.1.1 West Coast District municipality: Demographic profile and General employment trends

The West Coast District Municipality extends over an area of 31 099 km² and has a total population of 464 056 inhabitants and 122 074 households (Table 4-1). The district includes five local municipalities (Matzikama, Cederberg, Bergrivier, Saldanha Bay, and Swartland) which all have access to the Atlantic Ocean as well as the N7 national road (with the exception of Saldanha municipality) (WCDM, 2021).

The population consists of 50.3% female and 49.7% male, with three predominant population groups; Coloured (66.58%), Black African (16.36%), and White (15.71%) communities. Most of the populations' first language is Afrikaans (83.67%) followed by IsiXhosa (8.58%), English (3.98%) and other indigenous languages (IsiNdebele, Sesotho, and Setswana).

The WCDM population dependency ratio is quite high (45.9%) with 68% in the working age group (15-64 years), followed by the young (25%, 0-14 years) and the elderly group (7%, 65+ years). A high dependency ratio puts greater strain on people who are part of the workforce to support their economic dependents (children and elderly people). A higher dependency ratio also means greater pressure on social systems and the delivery of basic services. The level of education in the WCDM is relatively low, with a literacy rate of 79.1% (lower than the average of the Western Cape's 87.2% and slightly lower than the rest of South Africa 80.9%) (Socio Economic Profile West Coast District Municipality). The dropout rate for high school learners (Grades 10 to 12) within the West Coast local municipalities varied from 23.2% to 33%. These high levels of dropouts were influenced by socio-economic factors such as teenage pregnancy, availability of no-fee schools and unemployment (Socio Economic Profile West Coast District Municipality). The average income in the WCDM falls within three ranges: no income (10.5%), R1 to R9 600 per annum (5.3%) and R9 601 to R76 400 per annum for which most of the population can be categorised (57.8%). There were 183 969 people employed in the WCDM in 2018, which constitutes 7.1% of the total employment in the Western Cape. The WCDM experienced an average annual increase of 3 480 jobs over the period 2014-2018, with the Swartland municipality generating the most employment opportunities of 1 146 in the last year, conversely to Matzikama and the Bergriver municipality which only created some 546 jobs. In 2019, the WCDM experienced a loss of 389 jobs, which will have a significant impact on the WCDM economy if this trend continues.

The WCDM experienced the slowest economic growth in the Western Cape between 2005-2013, averaging 3.0% (WCDM 2021). In contrast, the province showed a growth rate of 6.8% over the same period. The West Coast experienced strong growth in its construction (6.2%) and commercial services (6.1%), which include wholesale and retail trade, catering and accommodation; transport, storage and communication; and finance, insurance, real estate and business services sectors (WCDM 2021). The sectors that experienced a reduction over the 2005-2013 period were agriculture (0.3%), manufacturing (0.3%) and other sectors (3.0%). The general government and community, social and personal (CSP) services sector in the West Coast experienced a steady 2.8% growth. The largest sectors in the West Coast economy in 2013 were the finance, insurance, real estate and business services (27%), manufacturing (17%), agriculture, forestry and fishing (14%) and wholesale and retail trade, catering and accommodation services (13%) (WCDM 2021). The agriculture, forestry and fishing sector were the primary source of employment, with 70 060 jobs in 2018, contributing 38.1% to total employment in the WCDM. However, the agriculture, forestry and fishing sector contributed the most to the WCDM employment in 2018 (38.1%, or 70 060 jobs).

Table 4-1 Demographic profile summary of the West Coast District Municipality, Lamberts Bay, Strandfontein, and Doringbaai.

Indicator	West Coast District	Lamberts Bay	Strandfontein	Doringbaai
Population Total	391 766	6120	431	1260
Household Total	106 781	1710	92	315
Area (km²)	31 118.6	45.73	4.18	1.79
Population group				
Coloured (%)	66.58	74.53	14.8	90.17
Black African (%)	16.36	8.97	50.6	6.90
White (%)	15.71	15.90	33.2	2.7
Indian or Asian(%)	0.56	0.23	0.9	0.08
Other (%)	0.79	0.38	0.5	0.16
Gender distribution				
Male (%)	49.7	49.1	51.4	49.29
Female (%)	50.3	50.9	48.6	50.71
First language				
Afrikaans (%)	83.67	90.87	69.4	96.37
English (%)	3.98	1.75	3.2	2.66
IsiXhosa (%)	8.58	5.80	22.6	0.32
Setswana (%)	0.63	0.55	0	0.32
Dependency ratio	45.9	52.9	18.1	44.2

4.2 Local Study Area

4.2.1 Matzikama Municipality: Demographic profile and General employment trends

The Matzikama Municipality is situated on the north-west coast of the Western Cape and borders the Northern Cape Province (Kamiesberg municipality in the north and Hantam municipalities in the east), the Atlantic Ocean on the west, and the Western Cape (Cederberg Municipality) in the south (WCMDM 2021). The municipality consist of 18 towns, with three coastal settlements (Doringbaai, Papendorp, and Strandfontein) and several small inland towns which serves as agriculture service centres (Ebenhauser, Lutzville, and Koekenaap) (MM 2019; WCGPT 2018). Matzikama municipality is defined by an arid environment with a flourishing natural irrigation system sustained by the Olifants River. The Olifants River (Vanrhynsdorp Government Scheme) consist of 237 km canals and supply water for several towns, industrial and domestic waste, local agriculture, and irrigation (DWS 2019). Most of the economic activities are concentrated in the south of the municipality, with Vredendal being the largest town and primary economic node (WCGPT 2018). The agriculture sector is largely attributed by the viniculture industry and combined with the forestry and fishing sector contributed the most towards Matzikamas municipal GDP and employment in 2018 (Mayson *et al.*, 2020; MM 2019). The agriculture, forestry and fishing sector employed approximately 25 492 people in 2014 consisting of a

mixed workforce of semi-skilled and unskilled workers (PGWC 2018). Matzikama's real GDP per capita in 2018 was R39 000 which is considerably lower than most surrounding municipalities, including the WCDM (at R59 000). Matzikama municipality real GDP decreased between 2018 and 2019 by 2.5%, in addition to a low GDP growth rate of 2.1% over the period 2008-2017, which is 0.3% less than the WCDM average growth rate (WCDM 2021; MM 2020). It is estimated that the Matzikama municipality experienced its largest decline in its annual GDP growth rate in 2019 (4%) when compared to the GDP growth rate between 2014 and 2018 (MM 2021/22). It is anticipated that the ongoing COVID-19 pandemic will worsen Matzikama's local economy as a decline in economic performance has already been observed since 2018. A further reduction in municipal revenue, unemployment in the private sector, land grabs for informal housing and the stagnation of development programs is likely to occur in 2021. (MM 2021/22).

4.2.2 Matzikama Municipality: Sector contributions to GVA

Matzikama Municipality contributed approximately 14% to the West Coast District Municipality GDP (~R4 billion) and employed about 15.8% of the WCDM's labour force. The three largest sectors that contribute to the GDP of the municipal area are agriculture, forestry and fishing (24.5%), wholesale and retail trade, catering and accommodation (16.3%) and manufacturing (13.6%). The economic state of the municipal area is important as it affects the ability of households to pay for services such as water, electricity, sanitation and refuse removal.

Economic growth trends are vital for predicting the direction of spatial expansion, guiding investment, and job creation in certain industries. Suitable investment into sectors that have showed no positive growth over the last years should be considered to facilitate greater growth and employment opportunities in specific sectors. Sectors that contributed less to the WCDM GDP primary, secondary and tertiary sectors such as mining and quarrying (4.8%), construction (4.9%) and finance, insurance, real estate, and business services (9.6%) should be considered.

4.3 Project Site

4.3.1 Doringbaai: Demographic Profile, Economy, and general employment trends

Doringbaai (31.81 S, 18.2388 E) is a small west coast fishing village situated approximately 50 km from Vredendal with a population of 1700, consisting of 303 households (Table 4-1). The primary first language in Doringbaai is Afrikaans (96,4%), with some English, IsiNdebele, IsiXhosa and IsiZulu speaking inhabitants. The population is equally divided amongst gender with the population consisting of 50.7% female and 49.3% male. Most of the population is of a Coloured descent (90.2%), followed by Black African (2.7%), Indian/Asian (0.1%), White (6.9%) and other (0.2%). The level of education in Doringbaai is relatively low with 18.6% of the population educated to matric level, 4.4% completed higher education, while 2.7% have no schooling. Education is a vital part of the economic and human development since it improves access to employment opportunities. In addition, low education levels result in an underdeveloped skilled labour workforce and low household income levels. Therefore, poor level of education in Doringbaai is reflected in the low average household income which falls within three ranges: no income (10.2%), R1-R9 600 (9%) and R9 601-R76 400 per

annum for which most of the population can be categorised (57%). Similar average household income is observed in neighbouring coastal communities such as Strandfontein and Lamberts Bay. In addition, Doringbaai has a high dependency ratio with 69.4% of the population in the working age group (ages 15-64 years) followed by the young (0-14, 24.2%) and the elderly (65+, 6.4%) age group. A high dependency ratio is commonly observed in developing countries and have been found to show significant relationship with economic growth, poverty, and employment (Vijayakumar 2013). In fact, the dependency ratio in an area such as Doringbaai has shown a significant impact on poverty and conversely, poverty a strong impact on the dependency ratio. Again, reinforcing that a skilled labour force is vital to an economy's growth and development (Vijayakumar 2013).

The Doringbaai local economy has been characterized as vulnerable since the closing of the Oceana factory in 2006 with living standards having continuously been adversely impacted by the declining fishing industry (Mayson *et. al* 2020; DGES 2013). Several coping responses since the loss of the Oceana factory, has been financial support from government grants, external financial support from family member outside of Doringbaai, as well as small-scale fishing activities, and home-based businesses (DGES 2013). As such, the local community is heavily constrained by economic opportunities. This is further aggravated by expensive transport and limited access to employment opportunities and formal education outside of Doringbaai (DGES 2013). Therefore, most of the employment opportunities are limited to seasonal work, informal trading, welfare grants, and marine resources (DGES 2013). However, pending strategic projects such as the establishment of the Farmer Production Support Unit/s and Aquaculture hubs is likely to improve economic growth in Doringbaai and the WCDM (According to the 2021-2022 Review for the Integrated Development Plan, 2017-2022) (WCDM 2021). The development of sectors such as the aquaculture and tourism industry could potentially mitigate the high unemployment rate that has increased to 85% which were associated to the declining fishing industry in the area (Meyer *et al.*, 2020, MM 2016/17). Additional activities that support the economic potential of Doringbaai include tourist activities, hiking trails, 4 x 4 routes, and a world-renowned succulent nursery such as the Namaqualand's flowers during late winter and spring. There are also several holiday accommodations available from guest houses to self-catering units (WCI 2021). Doringbaai has the potential to be an exciting tourist destination if local infrastructure such as the jetty and harbour could be improved and access roads from Lamberts Bay to Doringbaai is converted to a tar road (DGES 2013).

4.3.2 Papendorp & Ebenhaeser: Demographic Profile, Economy, and general employment trends

Papendorp (31.6984° S, 18.2116° E) is a small coastal settlement that is largely a residential area while Ebenhaeser (31.6292° S, 18.2615° E) is a smaller inland town that serves the local agricultural industry and both falls within WARD 2 of the Matzikama Municipality. Both settlements are located along the Olifants River Estuary with very few economic activities other than farming and subsistence related activities. Papendorp has very little trees and most buildings are in a poor state of maintenance.

The unemployment rate is over 50% in Ward 2 and more than 500 people are on the low-cost housing waiting list. Very little information exists on these settlements but the IDP suggests that if the housing and buildings are upgraded it could be marketed as a tourist destination.

4.3.3 Cederberg Local Municipality

Within the WCDM, the Cederberg Local Municipality lies on the upper west coast of the Western Cape Province and is approximately 200 km from Cape Town and is bordered by the Cederberg mountains. The Cederberg Local Municipality is considered the least populated in the WCDM with a population of 59 382 people and over 16 488 households. The Cederberg Municipality is expected to grow by 1.5% to 63 057 people by 2024. The male to female ratio is slightly uneven in favour of females with a ratio of 99.4% males per 100 females which could be attributed to a decrease in female mortality rates and a possible outflow of men seeking employment in other areas.

Education remains one of the driving forces for engagement in the labour force and a way in which to alleviate poverty and enrich the economy of the region. The municipality has the second lowest learner enrolment in the district with a learner retention rate of 69.6%. The matric pass rate for the municipality increased in recent years from 85.1% to 87.5%. This is possibly reflected in the per person income of the area where the per capita income of the municipality is well below that of the Western Cape; R41 000 and 59 000, respectively but is comparable to that of the WCDM (R44 000) and adjacent municipalities. However, there is still an inequality with regards to income with 78.8% of workers in the local municipality being formally employed while the remaining 21.2% are informally employed.

A disparity in access to formal housing and other basic services are observed throughout the Cederberg Municipality. Approximately 86.2% of inhabitants have access to formal housing and 8.4% to informal housing which is the second highest in the District. Access to basic services such as piped water inside/within 200m of the dwelling, flush or chemical toilets and electricity for lighting are above the district averages. Refuse removal is at least weekly by local authorities, but is only supplied to 58.1% of households in Cederberg Municipality which is well below the standard when compared to neighbouring municipalities.

The main factor driving employment in the Cederberg Municipal region is the agriculture, forestry and fishing sector (42.5%) while manufacturing and the wholesale and retail trade industry contributed 8.5% and 15.1%, respectively to employment. Similarly, informal employment is also concentrated in the agriculture, forestry, and fishing sector (33.6%) with other sectors contributing to a lesser extent such as transport, storage and communication (29.5%), retail trade and accommodation (26.3%), and community, social and personal services (23.6%). The local municipality also has the lowest unemployment rate (7.9%) across the WCDM which is marginally higher at 11.9%.

Economic growth in the region can be boosted by spending money on social and health infrastructure, education, and road transport infrastructure. The local municipality is located on the N7 which is a road frequently used for the transport of goods and services and upgrades to the remaining sectors promotes a healthy workforce that will in turn boost the economy.

4.3.4 Lamberts Bay: Demographic Profile, Economy, and general employment trends

Lamberts Bay is situated about 280 km north of Cape Town and is a small fishing town that may be considered the diamond of the west coast because of its pristine white beaches and its wildlife. Lamberts Bay is home to about 6120 people with a large proportion of the population designated as coloured (74.52%) and the remainder as White (15.89%), Black African (8.97%) and Other (0.37%).

The population is equally divided amongst gender with the population consisting of 50.9% female and 49.1% male. Further, the population is concentrated below the age of 19 years (31%), followed by those in the 20-29 years age group (15%) and 30-39 years age group (13.8%).

There are about 2155 households in Lamberts Bay, mostly comprising of two (45.9%) and four (32%) people living in formal accommodation (76%) with the remainder in informal properties and about 860 people on the waiting list for housing. A substantial proportion of inhabitants are employed (28.3%) while an almost equally considerable proportion of them are not economically active (26.63%), unemployed (7.87%) and classified as a discouraged work-seeker (1.95%).

Lamberts Bay has a considerable proportion of subsistence fishing and an active recreational and commercial West coast rock lobster fisheries. The harbour at Lamberts Bay hosts a finite number of small fishing vessels where activities are centred around the linefishing, west coast rock lobster and hake and pelagic fishing sector

5 COMPATIBILITY WITH SPATIAL PLANNING: AN ECONOMIC PERSPECTIVE

5.1.1 National Development Policy and Legislative Context

5.1.1.1 National Development Plan (NDP)-2030

When considering the socio-economic impacts that will result from the Trans Atlantic Diamond (TAD) project, spatial development frameworks are used to place their significance into context. The National Development Plan (NDP, 2012) is a strategy for securing South Africa's future, as outlined in the Constitution. The NDP set out six key objectives to eradicate poverty and inequality in South Africa (NDP 2012). The following objectives are set out for 2030:

- Bringing South Africans of different races and socio-economic groups together around a common goal of eradicating poverty and reducing inequality.
- Encourage citizens to participate in their own strength, strengthening the democracy, and the accountability of their government.
- Increasing economic growth, exports, and the labour-absorbing economy.
- Concentrating on essential human and national capabilities.
- Increase skills, infrastructure, social security, institutions, and partnerships both inside the country and with major international partners.
- Creating a capable and growing state.
- Strengthening the collaboration of societal leaderships.

Increasing national growth and creating a development is a difficult process. As a result, the NDP suggests a multidimensional strategy for achieving a constructive growth cycle where one achievement advances the next. The primary aim for South Africa is to reduce poverty and inequality through raising living standards to the NDPs' minimum level. This will require a combination of socio-economic challenges to improve such as employment, the social wage, earnings, productive growth, and public services. These challenges are interconnected where one challenge can improve the other.

For example, faster economic growth will enhance opportunities for all while providing the resources needed to improve education (Figure 1).

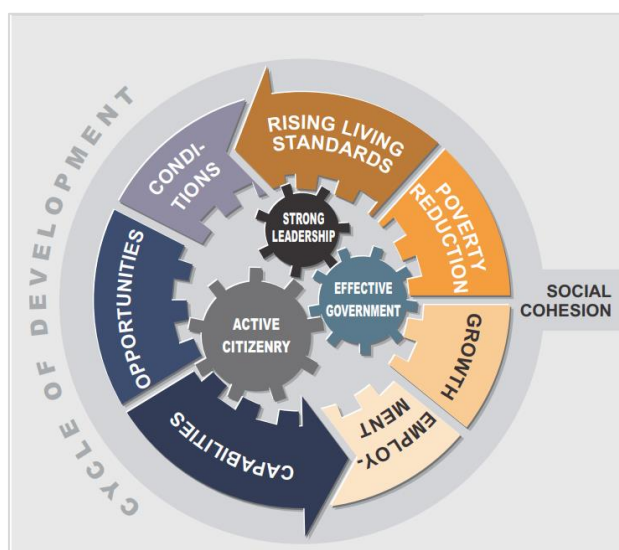


Figure 1 Cycle of development to achieve social cohesion (NDP 2012).

The NDP aimed to transform the economy through the increase of exports and improving human capital, production capacity, and infrastructure which will free up resources for investment and minimize the dependency on capital inflows. As a result, increased capital growth and improved public infrastructure and skills will enhance economic development. High employment and development will result in higher earnings and living standards, and therefore less inequality. Long-term economic prosperity requires a shift in the economy toward increased investment and decreased consumption.

For developing industries such as agro-processing, tourism, fisheries, and small businesses, a diversified approach is advocated. Increased capital spending is required to promote faster and more inclusive growth. Supporting investment, particularly domestic investment, incentivizing savings, and enabling enterprises and citizens to take a longer-term view of economic opportunities will be critical to the Plan's success. Industries such as agro-processing, tourism, fishing (in coastal areas), and small-enterprise growth should be encouraged, with market assistance in places with more economic potential.

The context of Trans Atlantic Diamond Prospecting Application and the NDP:

The TAD prospecting project supports one out of the six key objective set out by the NDP. The TAD prospecting project will be able to promote economic growth through greater labour absorption (30 employment opportunities, 18 training opportunities) during operational activities.

5.1.2 Provincial and local Planning Context

5.1.2.1 Western Cape Provincial Spatial Development Frameworks (2014)

The 2014 Western Cape Provincial Spatial Development Framework (WCPSDF, 2014) is prepared by the Department of Environmental Affairs and Development Planning (DEADP) and various service providers. This framework informs National, Provincial and Municipal planning processes and vice versa. The WCPSDF aims to create a framework for the Province's urban and rural areas which will assist in governmental spatial planning mandates. The guiding provincial spatial principles aim to increase investment in the Western Cape's public sector (built and natural environment) and are as follow:

- **Spatial justice:** Correct past spatial and other development inequalities.
- **Sustainability and resilience:** Promote the development of spatial systems that are sustainable, complex, diverse and resilient.
- **Spatial efficiency:** Improve the spatial efficiency of settlements and use of resources.
- **Accessibility:** Improve accessibility of various services, facilities, employment, training, recreation, public spaces, and transportation.
- **Quality and liveability:** Improve the quality of the built environment (e.g., transform open spaces that are legible, diverse, varied and unique).

The broader spatial agenda for the province can be summarized as follow:

- Growing the economy of the Western Cape Province in collaboration with the commercial sector, non-governmental, and community-based organizations.
- Invest in infrastructure to transform the urban and rural spatial environment.
- Provide better governance of the Western Cape's spatial assets and enhance and protect biodiversity, renewable energy, and agriculture assets while mitigating impacts resulting from adaptation.

Government alone cannot stimulate economic performance but could help businesses succeed by providing and maintaining regional infrastructure and organizing economic activities in both urban and rural areas. As a result, private investment, equal opportunities, and income earning is encouraged in the space-economy. Although the private sector is the major generator for economic growth, the government must lead in selecting where that growth occurs. One of the key strategies explored in the NDP were Rural Restructuring Zones (RRZ). The NDP proposed that the designation of RRZ could increase prospects in lagging regions or places with agricultural, tourism, or mining potential. However, no specific places have been designated and will be advocated based on a set of criteria.

The context of Trans Atlantic Diamond Prospecting Application and the Western Cape PSDF (WCPSDF)

The WCPSDF advocates investment in new regional economic infrastructure in order to attract private investors, such as TAD, and community organisations. In this instance, the proposed TAD project subscribes with the of WCPSDF in terms of:

- Focussing the global mining market in Africa and the Globe.
- Investment in local economic growth through job creation.

- Address spatial issues that the WCPSDF identified (e.g., make use of the underutilised Saldanha Bay Harbour).
- Assist in the designation of Doringbaai as an RRZ.

5.1.2.2 Matzikama Municipality Integrated Development Plan (IDP)

The Integrated Development Plan aims to include the entire municipality and its inhabitants in determining the best options for long-term growth. The IDPs' primary purpose is to enable municipalities to manage strategic objectives and other requirements set out in the IDP, NDP and other socio-economic frameworks. For example, The IDP informs Council's about challenges of its social partners and helps to resolve them, while guiding different sectors of government, the private sector and organizations to allocate funds according to the objectives and strategies of the Municipality (e.g. Matzikama Municipality). During the IDPs' public participation process, various priority needs were identified by the Matzikama community. The primary priority identified by civil society (29%) wanted to address challenges related to sport. A second priority was to enhance Local Economic Development (LED) (25%) and invest in infrastructure (25%). Lastly, the third priority identified was challenges related to the health services (21.5%). The TAD prospecting project should therefore aim to aid these priorities.

Local Economic Development (LED) strategy:

The Matzikama Municipality IDP briefly discussed the Local Economic Development (LED) strategy and identified several important socio-economic challenges and proposed strategic objectives on how to address them. The reduction in unemployment, poverty and inequality were identified. These challenges should, however, not be independent from one another but addressed as a cohesive objective in order for Matzikama Municipality and community to experience enhance economic growth. More specifically, the LED aims to:

- Minimize the poor community's susceptibility to catastrophes and spatial separation from economic activity.
- Increase the Matzikama community's skills and small businesses, while providing finance investment.
- Improve sector integration (i.e., informal and formal sector) and collaboration between government, business, and community organizations.
- Promote the diversification of Matzikama economy and enhance the expansion of existing sectors.
- Develop social capital.

Key interventions aligned with LED have been identified as follows:

- Develop the Marine Economy
- Strengthen and develop local businesses
- Develop local skills
- Develop local infrastructure

- Strengthen the Agricultural Sector Value Chain
- Optimally Use and Manage Resources
- Youth Development
- Mining Sector Interventions

The context of Trans Atlantic Diamond Prospecting Application and the Matzikama Municipality IDP:

The Matzikama Municipality IDP identified several priority-needs for the Matzikama Municipality and community which included challenges related to sport, LED, infrastructure, and health services. The TAD prospecting project can subscribe to the WCPSDF to some extent through employment of 30 civil citizens. However, economic growth for a community can only be enhanced through employment and alleviating poverty if long-term investment such as skill development is included. TAD will be able to train 18 individuals which is one of the priority needs identified during the IDP public participation process. Several interventions of the IDP include the development of local skills, but an overarching problem is the short-term LED provided by the TAD prospecting project. In the context of the IDP and strategies, only one out of three priorities-needs (i.e., ₁.LED) are addressed, while two out of seven key interventions are supported (₁. Development of the Marine Economy and ₂. Youth Development).

6 PERCEPTIONS AND CONCERNS OF KEY STAKEHOLDER GROUPS

The perceptions and concerns of stakeholders (Interested and Affected Parties, IAPs) are included in this study in order to understand the socio-economic perspective and environment. It is essential to understand the positive and negative concerns of IAPs to determine the Corporate Social Responsibility (CSR) of TAD. Multistakeholder perceptions identified during the pre-consultation process revealed several key concerns and issues that would need to be addressed for the proposed prospecting application. CSR has become an important component in mining activities but has often been overlooked or is ambiguous in developing countries (Mzembe & Downs, 2015; Hilson 2012). CSR could be defined as an economic contribution to a socio-economic environment that naturally results into a socio-economic impact (Visser 2008). Socio-economic responsibilities employed by businesses are often negatively perceived (e.g., marketing ploy), particularly for mining activities (Viveros 2014). The scope and definition of CSR is not always clearly defined between business and management and can be a source of tension between stakeholders and companies (Waarnaars 2012). Therefore, multistakeholder perceptions and the inclusion of IAPs are essential in understanding the broader scope of CSR and more complex issues relevant to the IAP of the proposed project area (i.e., Doringbaai). Several stakeholders' comments related to socio-economic concerns are summarised below to provide a varied perspective of the proposed prospecting activities in Concession are 14C (refer to Appendix 18 for the comments and responses of all IAPs during the pre-consultation phase of the Basic Assessment Report process).

- **Stakeholder 1 (79):**

Stakeholder 1 represents the Cederberg Municipality and is a user of the proposed prospecting site through coastal access in Doringbaai. Stakeholder 1 stated that the local community depends on the fishing industry as a source of income and will be affected by the TAD prospecting project. The fish stock, environment, reef functioning, seabed fishing grounds, breeding grounds, and migratory routes will be negatively impacted and disturbed by the geophysical survey and dredging which would lead to environmental degradation and marine species mortality. Stakeholder 1 suggest that the prospecting right application process **should not continue**.

- **Stakeholder 2 (226)**

Stakeholder 2 represents the South African Pelagic Fisheries Association and is a user of the proposed prospecting site fishing grounds. They stated that the commercial mining in this area will impact fishing and recruitment of small pelagic fish and recommended that the prospecting should be done between August and December. Stakeholder 2 also noted that the impacts will also be felt on inshore fisheries.

- **Stakeholder (3) 266**

Stakeholder 3 was the Directorate of the Sustainable Aquaculture Management representing the Department of Forestry, Fisheries, and the Environment. The proposed Trans Atlantic Diamonds prospecting right application in concession 14C area overlaps with the southern section of new Western Cape sea-based aquaculture ranching concession area. There is currently an application from Doring Bay Abalone (Pty) Ltd for a "Right to Engage in Abalone Ranching and Stock Enhancement pilot project in terms of Section 18 of the Marine Living Resources Act, 1998 (Act No, 18 of 1998)" ("ranching right") and it was assessed in terms of the "Criteria for allocating rights to engage in abalone ranching and stock enhancement pilot projects". Doring Bay Abalone (Pty) Ltd demonstrated compliance with all exclusionary criteria points as per Phase 1 of the application process (Government Gazette 21 April

2011, No. 352 & 353). The applicant proceeded to Phase 2 (Balancing Criteria) of the application process in September 2021 which included demonstrating equity and job creation; capacity technical; future investment in the sector and environmental considerations. The Environmental Impact Assessment process for the proposed prospecting in concession area 14C should consider the already approved aquaculture ranching concession area for the Western Cape. The application should consider the necessary specialist studies, such as, but not limited to, dispersion modelling, Marine Ecological Assessment etc, to assess the impacts of proposed mining application on the approved abalone ranching concession area. The Department requests that the impact studies investigate the potential impact of the accumulation of heavy material from the mining activity in the sediments located near the ranching site, which may settle in the sediment that will become suspended and accumulate in the flesh of the ranched abalone.

- **Stakeholder 4 (270)**

Stakeholder 4 represents the West Coast Rock Lobster Association and is a user of the proposed prospecting site fishing grounds between October and June from sunrise to 14h00. Stakeholder 4 advised that the small pelagic, line fish, and small-scale commercial fisheries will be impacted by the proposed prospecting activities.

- **Stakeholder 5 (389)**

Stakeholder 5 represents the Masifundise Development Trust. Masifundise is an organisation that works towards the empowerment and capacity building of small-scale fishing communities across South Africa, with a vision of a just society based on the principles of food sovereignty with an emphasis on securing the social, economic, climate, and environmental justice for small-scale fishing communities. Stakeholder 5 commented the following:

- The impacts on fisheries resources and the communities that rely and depend on these resources for food and livelihoods are not considered in light of potential cumulative impacts. The communities in this area rely on the annual snoek run for a large portion of their annual income. Sea Concession Area 14C stretches out into the area in which the snoek migrate down on the coast. The lack of assessment of cumulative impacts does not account for the potential impact on benthic macrofauna, marine megafauna, seabirds, prehistoric heritage, marine archaeological and palaeontological resources, as well as access to the oceans for local communities and tourists.
- Requested and recommended that a Strategic Environmental Assessment of the entire West Coast is conducted prior to the acceptance of further prospecting and mining applications.
- The Basic Information Document (BID) does acknowledge that there will be socio-economic impacts on the fishing industry. It is important that the Basic Assessment Report (BAR) does an in-depth dive into what these potential impacts are, especially on the marginal and poor small-scale fishing communities. These communities rely on the health of the ecosystem to put food on their tables. These impacts need to be carefully considered.
- The BID also states that these prospecting activities will result in regional and local benefits. However, in many cases of mining and prospecting on the coasts of South Africa, the job creation is minimal. In addition, the jobs that are created are not available for the local unskilled and semi-skilled workers that exist in the community, and labour is generally brought in from outside of the community. How many realistic jobs will this project create for the local community?

- **Stakeholder 6 (392)**

Stakeholder 6 represents the Town and Regional Planning Department of the West Coast District Municipality and noted that the several issues needed to be addressed during the assessment which included the impact of prospecting on livelihoods of coastal communities.

- **Stakeholder 7 (305)**

Stakeholder 7 is a community youth leader in Doringbaai. The following socio-economic concerns were raised:

- **The community does not want the prospecting process to continue, and most of the community are against this process.** The community is not being considered and TAD does not seem to take the communities interests into account. The few people who will get a job through prospecting means nothing. There may be some people in Doringbaai who may be in favour of the process as there may be job creation. Stakeholder 7 stated that they don't want prospecting and mining to continue and that it is a risk for all Doringbaai community.
- The abalone farm has been here for about 10 years now. What if the boat breaks or starts leaking and all that oil / fuel runs into the sea and affects the abalone and farm? Where does all the waste produced by the boat go (gases, oil, solid waste, wastewater, debris from the soil samples tailings)? We are endangering (dooming) the work of the fishermen. For my part, it is a 100% "no". They should not come in here.
- There is no guarantee they can give to say exactly what they are going to do during prospecting mining over the next 20 years or all the activities they are going to do. Mining is a greater risk than an asset to the fishermen, community, and next generation. Mining will not benefit the community and they are not looking for money from TAD.

- **Stakeholder 8 (398)**

Stakeholder 8 is a resident in Doringbaai, and the following socio-economic concerns were raised:

- I went to see who Trans Atlantic Diamonds is and where they came from, they have already exhausted the resources. Where does this company come from? From overseas I assume? I see their eye is on the West Coast. If it's not the one thing they want to mine, it's the other thing. Or it is oil. Are they a BEE company? Trans-Atlantic Diamonds is the South African middleman for overseas mining companies who want to mine here. The overseas companies find BEE companies in South Africa to apply for prospecting and mining rights on their behalf. The capitalists behind the whole plan are overseas companies. They have one focus, and it is about capital (money).
- They come out to come take. Because they do these things they do, they prevent us from continuing our heritage and our heritage is going to die out completely. In 20 years, the fuel is exhausted and then what are they going to do? This is a continuous thing that is happening here. Mining is never going to stop. My grandchildren are not going to have anything left of this environment.
- The fishermen here have been fishermen for 50 years. These activities will cause the fish to become scarcer. What are the fishermen going to do because fishing is all they know? The possibility exists that the activities may have a negative effect on the lobsters and fish. Is this company going to compensate those who suffer under it in terms of money and food they

lose? How will the company accommodate them and cover their losses and provide them with an income?

- **Stakeholder 9 (395)**

Stakeholder 9 is a private citizen of Doringbaai and raised the following concerns:

- What will the local community gain in terms of social development?
- Youth gaining in this process
- Scholarship for learners
- Tertiary education, bursary to develop their studies.
- Teenage pregnancy
- Support to institutions (school)
- Bring down early school

In conclusion, the general perception of the community representatives and stakeholders contest the proposed prospecting project in concession area 14C. The local communities rely on marine resources for their livelihoods and as a source of income. The community anticipates a negative impact to several fishing industries (Traditional Linefish Sector, Pelagic Purse Seine Fishers, and Tuna Pole and Longline). A time-period to conduct prospecting activities were recommended by several stakeholders to minimise the socio-economic impacts associated to the proposed prospecting activities. To enhance the economic contribution of the prospecting activities, employment opportunities must be created. To compensate for the potential impacts that cannot be mitigated, an economic contribution in the form of financial support (i.e., scholarships, bursaries, and secondary education sponsorships) is recommended.

7 POTENTIAL SOCIO-ECONOMIC IMPACTS

7.1 PRIMARY SECTOR

The three largest sectors of Matzikama Municipality's economy are Agriculture, forestry, and fishing (22.7%) Wholesale and Retail trade, catering, and accommodation (16.8%), and Manufacturing, (13.8%) (MM 2020). Agriculture, forestry, and fishing is the largest sector and contributed R 999 million to the GDP in 2018 and employed approximately 11 661 people (MM 2020). The average net annual change of the number of jobs increased by 192 between 2014 - 2018 and was anticipated to increase by 5 in 2019 (MM 2020).

The South African fisheries sector has an estimated value of R6 billion (DAFF 2021), contributing 0.1% to national GDP. Of the 22 commercial sectors (listed in SAG 2013/14) the most economically valuable, and with the greatest catch volumes, are the demersal-trawl (hake) and small-pelagic sectors (pilchards, anchovy, and red-eye round herring) (Brick & Hasson 2016; SAG 2013/14). The Western Cape is estimated to account for most of the industry value (90%), employment and income, with the primary commercial fisheries (as well as main fisheries ports, and therefore associated industry services) concentrated along the west and south coasts of South Africa (Hara *et al.*, 2008; Karaan & Rossouw 2004). The Marine Specialist Study identified three fishery sectors (Small-pelagic purse seine, traditional linefish, and Tuna pole and line fisheries) that may overlap with the concession area, as well as an aquaculture facility in Doringbaai (Doring Bay Abalone Pty Ltd). (Hutchings *et al.*, 2022). In

addition, small-scale fishers and subsistence fishers along the West Coast, particularly in Doringbaai, Strandfontein and Lamberts Bay, may potentially be impacted by the proposed prospecting activities in concession 14C.

The socio-economic significance of the potential impacts that would result from the proposed prospecting activities is determined below in order to assist with informed decision-making in the prospecting rights application. The significance of an impact is defined as a combination of the consequence of the impact occurring and the probability that the impact will occur. The impact assessment methodology followed that provided in Appendix 1 of the Marine Specialist Report (2006/2).

There has been a recent increase in applications for prospecting and exploration rights along the west coast and increased prospecting/survey activity in the short term and marine mining in the long-term is anticipated. This means that cumulative impacts of marine prospecting and mining must be considered at a broader spatial scale in a strategic manner for each potential impact identified. Obtaining detailed information on the scale, extent, methodology (and hence intensity) of various current and pending applications is, however, not possible within the prescribed timeframes of a Basic Assessment Process for a single application (such as this one). This requires a revised strategic level Environmental Impact Assessment to assess cumulative impacts with a medium to high level of confidence. The last strategic level EIA that assessed marine and coastal diamond mining impacts in the region was a Benguela Current Large Marine Ecosystem Programme (BCLME) study undertaken over the period 2004–2007 (Penney *et al.* 2007).

It is, however, logical and reasonable, to anticipate that many of the potential impacts assessed for this project would continue together with other projects that are ongoing or scheduled to come on-line. The result is that the spatial extent of many impacts would change from “local” to “regional”, whilst the duration would change from “short-term” (<2 years) to at least “medium term” (2–15 years) or even “long-term” (>15 years, mostly reversible in the case of prospecting, but not always for mining). The intensity of impacts is anticipated to remain as they are assessed here for operations of this nature but may be higher for other sea-based mineral and energy projects in different areas with different objectives. The cumulative effect of each of the identified impacts is therefore provided in the Impact Assessment tables below using this precautionary approach (assumption of simultaneous / consecutive prospecting and mining activities in the region). These cumulative impacts are assessed “after mitigation”. The assessment of cumulative impacts has a “low confidence” rating due to the uncertainty of the timing and location of other anthropogenic activities in the region.

7.1.1 Tuna pole and line

The South African tuna pole and line sector (TPL) targets longfin tuna *Thunnus alalunga*, yellowfin tuna *Thunnus albacares*, bigeye tuna *Thunnus obesus* and skipjack tuna *Katsuwonus pelamis* between November and May. Due to the seasonality of the TPL fishery, fishers also have access to snoek (*Thyrstites atun*) and yellowtail (*Seriola lalandi*), which are also important targets of the traditional linefishery. The tuna pole fleet consists of approximately 100 vessels ranging from small outboard powered ski boats (7-9 m length) to inboard diesel-powered deck boats (6-25 m length). The reported longfin tuna catches in 2018 was 2471 tonnes, with a wholesale value of R 124 Million, or 1.2% of the total South African commercial fisheries value (Japp & Wilkinson 2021). The commercial tuna pole

fishing grounds lie between Cape Agulhas and the Orange River, but the fleet operates predominantly out of Cape Town and Hout Bay harbours and most fishing effort takes place within 100 nautical miles of these ports (particularly in the Cape Canyon area). Some effort does take place further up the West Coast, although this is mostly offshore of, or to the south of concession area 14C. Over the period 2003-2016 there was moderate-high (average of 100-500 boat days/year) reported TPL fishing effort in the reporting grid block that partially overlaps with concession 14C. Furthermore, a significant amount of snoek-directed activity by the tuna pole fleet occurs inshore of the 100 m depth contour (SLR 2021). Snoek fishing activity within the area is seasonal with all fishing reported within the period April to May inclusive (SLR 2021). Impacts on the TPL fleet due to the proposed prospecting activities within 14C are expected to be insignificant when prospecting activities are restricted between April to May (Table 7-1).

Table 7-1 Impact rating of the prospecting activity on the Tuna Pole and Line fishery.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without mitigation	Local 1	Low 1	Short-term 1	Very Low 4	Possible	INSIGNIFICANT	-ve	High
Essential mitigation:								
<ul style="list-style-type: none"> Prospecting activities should not commence between April and May. 								
With mitigation	Local 1	Low 1	Short-term 1	Very Low 3	Improbable	INSIGNIFICANT	-ve	High

Table 7-2 Cumulative Impact rating of the prospecting activity on the Tuna Pole and Line fishery.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Cumulative impact	Regional 2	Low 1	Long-term 3	Medium 6	Possible	LOW	-ve	Low

7.1.2 Traditional Linefish Sector

Most (85%) subsistence fishers in South Africa employ traditional line fishing methods, which is generally considered labour intensive and associated to low revenue output (Brick & Hasson 2018). Linefishers operate in shallow water (generally <100 m depth) and would potentially be negatively impacted by coastal and nearshore seismic exploration, prospecting and mining operations (particularly recreational, small-scale and subsistence shore fishing). Traditional linefishers use simple handheld lines or rod with no more than 10 baited hooks per line, whereas the commercial linefishers use motorised boats and is managed by Total Applied Effort (TAE) (DAFF 2013). The traditional line fishing sector targets multiple species (up to 200 species) of which 95 species are commercially and recreationally significant (DAFF 2013). The line fisheries along the west coast (Line fish management Zone A - Orange River to Cape Infanta) mostly target the nomadic coastal migrant species, snoek (*Thyrstites atun*) and yellowtail (*Seriola lalandi*), as well as the reef dwelling Hottentot sea bream (*Pachymetopn blochii*). Snoek typically contributes the greatest catch by weight in the commercial line

fisheries (total landings of up to 5 800 tonnes) (Kerwath *et al.*, 2017). The management framework includes a comprehensive suite of line fish regulations including minimum size limits, daily bag limits, closed seasons, closed areas, commercial fishing bans for certain species and the capping of the commercial effort with zonal based Total Allowable Effort (TAE) (Kerwath *et al.*, 2017).

Linefishers operate in shallow water (generally <100 m depth) and would potentially be negatively impacted by coastal and nearshore seismic exploration, prospecting and mining operations (particularly recreational, small scale and subsistence shore fishing). Concession area 14C is, however, relatively far offshore in water that is mostly deeper than 100 m. A spatial analysis of the reported commercial line fish catch data does show some limited overlap with traditional line fishing activity on the inner margin of the 14C concession area. The proposed prospecting in concession area 14C is therefore expected to have a negligible socio-economic impact on the direct and indirect dependants from the traditional linefishing sector (Table 7-3).

Table 7-3 Impact rating of the proposed prospecting activity on the Traditional Linefish Sector.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without mitigation	Local 1	Low 1	Short-term 1	Very Low 3	Improbable	INSIGNIFICANT	-ve	High
No mitigation measures required								

Table 7-4 Cumulative Impact rating of the prospecting activity on the Traditional Linefish Sector.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Cumulative impact	Regional 2	Low 1	Long-term 3	Medium 6	Improbable	LOW	-ve	Low

7.1.3 Small Pelagic Purse Seine Fisheries

The small pelagic purse seine fishery has the largest catch (volume) for any of the South African fishery sectors and has the second largest annual catch value estimated at around R2.164 billion in 2017, which is approximately one fifth of the combined value of South African Fisheries (Japp & Wilkinson 2021). The industry supports around 4 500 full time staff, 2 500 seasonal staff and more than 700 fishers. The supporting industries contribute an estimated additional 2 400 jobs. The management of the small pelagic purse seine fishery is described in the Marine Specialist Report (Hutchings *et al.* 2021).

The small pelagic purse seine fishery operates between the Orange River and East London mostly in nearshore waters (within 10 km of the coast). The 14C concession area lies within the important west coast nursery ground that is utilised by several small pelagic fish species including sardine, horse mackerel (*Trachurus capensis*) and anchovy that utilise Agulhas Bank and west coast spawning grounds (Hutchings *et al.* 2002). A quantitative spatial analysis using commercial catch return data (all small pelagic species combined) for 2006-2011 shows that Concession Area 14C partially overlaps 16 small

pelagic reporting grid blocks, where an annual average of 6 880 tonnes of fish were landed between 2006-2011. This is equivalent to about 1% of the national total catch. However, the target species are pelagic, and their distribution is variable, so the fishery as a whole is unlikely to be significantly negatively affected by small temporary closures/exclusion zones around survey vessels and geotechnical survey sites. The socio-economic impact is assessed as 'very low', and 'insignificant' after recommended mitigation measures (Table 7-5).

Table 7-5 Impact rating of the prospecting activity on the Small Pelagic Purse Seine Fisheries.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without mitigation	Local 1	Low 1	Short-term 1	Very Low 3	Probable	VERY LOW	-ve	High
Essential mitigation measures:								
<ul style="list-style-type: none"> • Undertake surveys when fishing effort is lower (preferably outside of fishing seasons). • Appoint a Fisheries Liaison Officer (FLO) to facilitate communication with the Small Pelagic Purse Seine Fishing Industry Association. The FLO should report daily on vessel activity and respond and advise on action to be taken in the event of encountering purse seine fishing vessels in the survey area. 								
With mitigation	Local 1	Low 1	Short term 1	Very Low 3	Possible	INSIGNIFICANT	-ve	High

Table 7-6 Cumulative Impact rating of the prospecting activity on the Small Pelagic Purse Seine Fisheries.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Cumulative impact	Regional 2	Low 1	Long-term 3	Medium 6	Probable	MEDIUM	-ve	Low

7.2 TERTIARY SECTOR

The tertiary sector of Matzikama Municipality contributed R2261.1 million to the GDP, of which wholesale, retail trade, catering and accommodation contributed R741 million. This sector contributed to 5 189 employment opportunities with an average annual growth of 131 jobs over the period 2014 to 2018. The socio-economic significance of the potential impacts that would result from the proposed prospecting activities on the tertiary sector is determined below:

7.2.1 Local Tourism and businesses

Impact on aquaculture farming

The establishment of the Doring Bay Abalone Pty Ltd (DBA) aquaculture facility in 2014 has empowered the local community through creating employment opportunities, concurrently uplifting the social economic standards (Hutchings *et al.*, 2019). Aquaculture developments such as Doring Bay Abalone Pty Ltd (DBA) is aligned with the objectives of the national programme "Phakisa- unlocking the blue

economy”, which motivates sustainable economic activity. Therefore, the success of this project is not only critical for the livelihoods for over 50 local staff members that DBA employs but to the lasting economic sustainability of Doringbaai (Hutchings *et al.*, 2019).

The potential impacts resulting from the proposed prospecting activity is the generation of fine sediment plumes and increased turbidity, degrading water quality. DBA has one seawater intake point and could require two more for the successful operation of the aquaculture facility and proposed mariculture facility. It is essential that intake seawater conditions, such as good water quality, and a water temperature between 16 °C and 18 °C is maintained at the aquaculture and mariculture facility for the optimal growth of abalone (*Haloites midae*), and DBA economic returns. The generation of sediment plumes during prospecting activity are likely to effect water quality in concession area 14C in a localised and temporary manner. Fine sediment plumes can become trapped in the surf zone or carried alongshore with coastal processes such as rip currents, extreme wave action, and wind driven currents, transporting plumes along the coast. Fine sediment plumes have been linked to the permanent loss of intertidal habitats, and reduced habitat complexity and diversity (CapMarine 2016; Balata *et al.*, 2007). However, the degradation of water quality (e.g., reduced oxygen due to sedimentation, WDFW 2009) remains the primarily concern for the DBAs’ land-based aquaculture facility.

Impact on tourism

The Namaqua West Coast Tourism Report (de Jager 2019) proposed several strategic tourism deliverables for the Namaqua West Coast region according to the LED objectives of the Matzikama Municipality (Section 5). Strategic objectives that are currently underway in Doringbaai are: the development of the Doringbaai-Ebenhaeser tourism route and homestays; Tour guide training; alien clearing initiatives (optimal use and manage local resources), and marketing of the Matzikama Municipality as an eco/adventure/heritage region. Between 2012-2020, Doringbaai tourism grew significantly and currently have several tourism assets such as one cellar, one restaurant, one festival (Doringbaai perlemoen festival), one tourism member and several smaller events. To develop the tourism sector in the Namaqua West Coast region, the following objectives were proposed:

1. Develop and package tourism products.
2. Market Namaqua West Coast as a destination.
3. Ensure tourism quality and standards.
4. Practice responsible tourism.

The Matzikama Municipality, particularly Doringbaai, has the potential for local economic growth through the development of its tourism sector. The TAD prospecting could potentially impact the tourism sector through the creation of plumes, discolouring the water during the operational phase, resulting in an aesthetically unpleasing view for tourist visiting the small West Coast town. Many of the residents, guesthouses, and popular restaurants (including a wine cellar, Fryers’ Cove) are situated next to harbour and coastline. However, the impact on the tourism industry can be avoided through restricting the TAD project to the section of the concession area where prospecting vessels are not visible from the coastline, and during important tourism events and seasons such as the proposed perlemoen festival, the school holidays and summer months. In conclusion, due to the local and temporary nature of the proposed prospecting, the potential impact of the proposed prospecting activity on DBA’s operational success and the tourism industry is very low and was reduced to insignificant after mitigation measures are applied (Table 7-7)

Table 7-7 Impact of proposed prospecting on tourism and small business.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without mitigation	Local 1	Medium 2	Short-term 1	Very Low 4	Probable	VERY LOW	-ve	Medium
Essential mitigation measures:								
<ul style="list-style-type: none"> • Avoid prospecting activity surrounding the seawater intake points. • Ensure compliance with the International Convention for the Prevention of Pollution from Ships (MARPOL) standards. • Develop a waste management plan using waste hierarchy. • A Shipboard Oil Pollution Emergency Plan (SOPEP) must be prepared for all vessels and should be always in place during operations. • Deck drainage should be routed to a separate drainage system (oily water catchment system) for treatment to ensure compliance with MARPOL (15 ppm). • All process areas should be banded to ensure drainage water flows into the closed drainage system. • Drip trays should be used to collect run-off from equipment that is not contained within banded areas and the contents routed to the closed drainage system. • Low-toxicity biodegradable detergents should be used in the cleaning of all deck spillages. • All hydraulic systems should be adequately maintained, and hydraulic hoses should be frequently inspected. • Spill management training and awareness should be provided to crew members of the need for thorough cleaning-up of any spillages immediately after they occur to minimise the volume of contaminants washing off decks. • Monitor water-quality surrounding the sediment plumes. • Restrict prospecting activities during important tourism events and seasons (i.e., during the perlemoen festival, the school holidays and summer months). • Restricting operational activities to the section of the concession area out of visible sight from the shore. 								
With mitigation	Local 1	Low 1	Short term 1	Very Low 3	Improbable	INSIGNIFICANT	-ve	Medium

Table 7-8 Cumulative Impact rating of the prospecting activity on tourism and small business.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Cumulative impact	Regional 2	Low 1	Long-term 3	Medium 6	Possible	LOW	-ve	Low

7.2.2 Sense of place and Health and Wellbeing

Sense of place is defined as the emotional relationship that you feel or experience in a particular location or environment which can have either positive connotation (e.g., safety and well-being) or negative connotations (e.g., fear) (Foote & Azaryahu 2009). It can also refer to a distinct character of an environment (Foote & Azaryahu 2009). The residents and community in Doringbaai have a spiritual connection to the ocean and have used this region for fishing for generations. The impact of the prospecting vessels may negatively impact all visible receptors (community and tourists) in Doringbaai, affecting the unique character of the harbour and bay which is currently one of the key features that attract tourists. Due to the location and temporary nature of the proposed prospecting, however, the

potential impact of the proposed prospecting activity is insignificant with no mitigation measures required (Table 7-9).

Table 7-9 Impact of proposed prospecting on sense of place.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without mitigation	Local 1	Low 1	Short-term 1	Very Low 3	Improbable	INSIGNIFICANT	-	High
No mitigation measures required								

Table 7-10 Cumulative Impact rating of the prospecting activity on sense of place.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Cumulative impact	Regional 2	Low 1	Long-term 3	Medium 6	Improbable	LOW	-ve	Low

7.2.3 Local Crime

The Matzikama municipality crime statistics showed that drug related crime and residential burglaries decreased from 2019 to 2020, conversely to murder and driving under the influence (MM 2020). The overall safety and security of the municipality buildings experience theft, burglary and vandalism which is largely exacerbated over the weekends and evenings (MM 2020). The proposed TAD project is approximately 5km offshore where crew members that are not community members of Doringbaai will not be allowed to leave the ship or live in Doringbaai. For this reason, there is no increased risk of criminal activities in the Doringbaai community (Table 7-11).

Table 7-11 Impact of proposed prospecting on local crime.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without mitigation	Local 1	Low 1	Short-term 1	Very Low 3	Improbable	INSIGNIFICANT	-	High
No mitigation measures required								

Table 7-12 Cumulative Impact rating of the prospecting activity on local crime.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Cumulative impact	Regional 2	Low 1	Long-term 3	Medium 6	Improbable	LOW	-ve	Low

7.3 OTHER

7.3.1 Local Households

The Doringbaai community regard marine resource in the nearshore and offshore environment as extremely valuable for both their household income and livelihoods. For this reason, fisher group users of Concession area 14C could be negatively impacted during the operational phase of the TAD prospecting project (approximately 30 – 60 days). The impact on local households is considered VERY LOW. There are approximately 303 households in Doringbaai with most of the population (57%) earning between R9 601-R76 400 per annum. Trans Atlantic Diamonds should consider compensating households that depend on marine resources during the operational phase of the project with at least R400 p/day during prospecting activities in Concession area 14C, should it be found that these households were impacted negatively due to the prospecting activities.

Table 7-13 Impact of proposed prospecting on local households.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without mitigation	Local 1	High 3	Short-term 1	Low 5	Improbable	VERY LOW	-ve	High
Best Practice:								
<ul style="list-style-type: none"> It is recommend that households depended on fishing should be compensated should it be found that these households were impacted negatively due to the prospecting activities. 								

Table 7-14 Cumulative Impact rating of the prospecting activity on local households.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Cumulative impact	Regional 2	Medium 2	Long-term 3	High 7	Probable	HIGH	-ve	Low

7.4 POTENTIAL POSITIVE IMPACTS

7.4.1 Economic performance (Local and Regional)

Mining is economically important as it can create broadscale employment opportunities and boost the national and local economy. Previous offshore diamond mining operations in Doringbaai did not, however, employ many local community members (SU 2013), which lead to poor community support. Contributions towards economic income during the TAD prospecting project will be made through the provision of 30 employment opportunities. Many of these positions will likely be filled directly from within the Doringbaai community. If not readily found, training could be provided (Table 7-16

Cumulative Impact rating of the prospecting activity on local and regional socio-economic performance.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
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Cumulative impact	Regional 2	Medium 2	Long-term 3	High 7	Possible	MEDIUM	-ve	Low
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Table 7-17). Training opportunities will be available for people with different types and levels of skills. The potential impact on the socio-economic performance is likely to be insignificant on a local scale (i.e., in Doringbaai community, Table 7-15). Conversely, investment from Trans Atlantic Diamonds in South Africa will have a greater positive impact on the regional economy. Trans Atlantic Diamonds should aim to incorporate codes of good practice on Broad Based Black Economic Empowerment issued under Section 9 of the Broad Based Black Economic Empowerment Act, Act 53 of 2003, as amended by Act 46 of 2013. Therefore, the following resource support aims are recommended:

- At least 25% from cost of sales, excluding labour cost and depreciation, must be procured from local producers or local suppliers in South Africa.
- 50% of jobs created are for persons of colour, and B-BBEE measurements must be maintained. Employment opportunities that could be fulfilled:
 - Employment of local security companies.
 - Employment allocated to port duties
 - If feasible, employment of local small-scale fishers vessels as support vessels during survey operations.
 - Employment of local or national geologists, a vessel manager, captain, crew members, scientists etc.
- At least 25% transformation of raw material or beneficiation which includes local manufacturing, production and/or assembly, and/or packaging, or at least 85% of labour costs paid to South African employees by service industry organizations
 - prospecting equipment can be sourced within South Africa or neighbouring communities.
 - investigate if support for operational activities can be provided by local Doringbaai services; e.g., Refuelling, general supplies, and possible equipment repair)
- Skills transfer – Training opportunities:
 - Environmental officers
 - Health and Safety Officers
 - Marine Mammal Observers (MMO's) and Passive Acoustic Monitoring (PAM) operators
 - General crew/ deck member
 - Commercial divers to help with surveys

Compensation needs identified by local community members from Doringbaai and Lamberts Bay were the following (SU 2013; Nthane *et al.*, 2015):

- Skill Development through training programs and formal education opportunities such as financial management skills which was emphasised by the Lamberts Bay fishers' group.
- Support of local initiatives, investments, and entrepreneurship (e.g., communal vegetable garden and opening of the jetty restaurant in Doringbaai).
- Support the development of a local Lamberts Bay fisher label and assist in the export of fish locally and internationally. In addition, assist in partnership with retail markets.
- Assist local communities in navigating new Small Scale Fisheries Policy structures.
- Assist in the development of a streamlined communication platform between local community, community representatives, stakeholders, and government officials.
- Support the establishment of an annual abalone festival in Doringbaai.

Table 7-15 Impact rating of the prospecting activity on the local and regional socio-economic performance.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without mitigation	Local 1	Medium 2	Short-term 1	Very Low 4	Possible	INSIGNIFICANT	+ve	Medium
No mitigation measures required								

Table 7-16 Cumulative Impact rating of the prospecting activity on local and regional socio-economic performance.

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Cumulative impact	Regional 2	Medium 2	Long-term 3	High 7	Possible	MEDIUM	-ve	Low

Table 7-17 Personnel requirement for the operational phase of the TAD prospecting project.

Personnel requirements	Department	Position	Community Sourced	Training
Ship's crew	Nautical	Deckhands	3	3
	Engineer	Electrician	1	0
		Greaser	2	1
	Catering	Chief Cook	1	0
		Assistant Cook	2	2
		Steward(ess)	4	4
Operation Crew	Plant	Plante operators	4	2
		Chief sorter	1	0
		Sorters	3	3
		Storeman	1	1
	General	Boiler Maker	1	0
		Welder	2	0
		Mine Helper	2	0
Total			27	16

8 CONCLUSIONS AND RECOMMENDATIONS

Although the potential negative impacts are anticipated to be very low for the tertiary sector services (tourism, hotels, commerce etc.), a potential negative impact is anticipated for the maritime sector, particularly the Doring Bay Abalone aquaculture facility and fisher groups. Positive impacts associated with the proposed prospecting activities are likely to result from compensation recommendations, such as employment opportunities, and skills development programs.

Anchor Environmental Consultants (Pty) Ltd were requested to undertake a socio-economic assessment for Trans Atlantic Diamonds (Pty) Ltd who are applying for a diamond prospecting right for Concession Area 14C, offshore (5km) of the Western Cape Coast. The proposed prospecting activity is anticipated to directly impact coastal communities in the Matzikama Municipality, particularly Doringbaai, Strandfontein, and to a lesser extent Lamberts Bay which falls under the local Cederberg Municipality. A brief overview of the economic performance was discussed and placed in relation to the potential impacts associated to the proposed survey area. The likelihood of the proposed survey to impact the socio-economic standing of areas surrounding concession area 14C was rated, based on available resources (i.e., Marine Specialist Report 2006, wider literature and spatial development frameworks), and the significance of impacts were reported on. Important user groups were identified and potential impacts from the proposed exploration and prospecting activities were identified. Impacts were assessed and, where possible, compensation and mitigation measures have been identified to avoid/minimise/reduce any impacts.

Negative potential impacts associated with the proposed activities are mostly assessed as Very Low significance. After mitigation measures were applied, negative potential impacts associated with the proposed activities were reduced to Insignificant. Potential impacts associated to the seismic survey and sampling/prospecting activities were identified as: Temporary disturbance of marine resources and exclusion of fishing vessels from the concession area 14C impacting fisher group users (i.e., 1) Tuna pole and longline, 2) Traditional Linefish Sector, and 3) Small pelagic Purse Seine Fisheries); 4) Impact on Local Households; 5) Impact on local tourism and businesses; 6) Increase in local and regional socio-economic performance; 7) Impact on Sense of place and Health and Wellbeing; and 8) Impact on local crime. The former five impacts are anticipated to negatively affect the livelihoods and household income of marine fisheries group and the operational success of the Doring Bay Abalone aquaculture facility. Although, these potential impacts associated to the proposed prospecting activity are of very low significance, it should be emphasized that the influence regarding the decision on the application of the proposed prospecting activity should take into account the poor economic performance of the coastal community Doringbaai, and the communities' high dependence on marine resources to support household income and livelihoods.

To mitigate against the potential prospecting impacts, it is recommended that mitigation measures and communication protocols must be further developed in consultation with local stakeholders so that effective and mutually acceptable mitigation measures can be implemented during seismic survey, prospecting and future mining phase activities. Communication protocols should inform on all prospecting activities including timelines and impacts. A "living framework" such as a Monitoring and Evaluation Plan (M&EP) for identifying, monitoring, assessing, and evaluating TAD Corporate Social Responsibility (e.g., employment and training opportunities) and socio-economic impacts should be developed. This framework should be developed with IAPs and surrounding community representatives that are potentially impacted by the TAD prospecting project. Adherence to the M&EP

is necessary to ensure that socio-economic deliverable are met. In addition, Trans Atlantic Diamonds should aim to incorporate codes of good practice on Broad Based Black Economic Empowerment issued under the section 9 of the Broad Based Black Economic Empowerment Act, Act 53 of 2003, as amended by Act 46 of 2013. This will include skills transfer programmes, job creation, and supporting local service industry organizations such manufacturing, production and/or packaging services.

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