



The Eastern Cape

OCEANS ECONOMY

RESEARCH AGENDA





Province of the
EASTERN CAPE
OFFICE OF THE PREMIER



environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA



Province of the
EASTERN CAPE
ECONOMIC DEVELOPMENT,
ENVIRONMENTAL AFFAIRS & TOURISM



ecsecc
eastern cape socio economic
consultative council

NELSON MANDELA
UNIVERSITY

CONTENTS

OCEANS ECONOMY RESEARCH AGENDA



Purpose of the Research Agenda	4
Scope of the Research Agenda	5
Baseline planning and policy dimension	6
Implementation and institutional dimension	7
Enhancement of effectiveness and efficiency (innovation) dimension	8
Early-warning and risk mitigation dimension	9
Research Agenda: Eastern Cape Ocean Economy	11
Research Dimension: Baseline Planning and Policy Development	11
Research Dimension: Implementation and Institutional mechanisms	25
Research Dimension: Early-warning and Risk Mitigation	28
Research Dimension: Enhancement of Effectiveness and Efficiency	30
Conclusion and Way-Forward	36

PURPOSE

OF THE RESEARCH AGENDA

Research is a critical component in ensuring the effective and efficient implementation of any strategy. This is because research provides decision-makers and implementers with the ability to better understand challenges; and to develop appropriate solutions to those challenges.

Accordingly, the primary objective of this Research Agenda is to guide the appropriate application of research resources and capabilities toward developing a decision-support and implementation capability that will ensure the successful implementation of the Strategic Roadmap of the Eastern Cape Oceans Economy.

The development of this Research Agenda is therefore inextricably linked to the ability of the Eastern Cape Government and its partners, to formulate responses to challenges within the Ocean Economy, by providing a starting point to guide decision-support and implementation.

As such the Research Agenda represents an opportunity to organise and prioritise

research requirements so that they can be fully integrated into planning, decision-making and implementation processes. This is essential for increasing the efficiency and effectiveness of implementation. This will be achieved through the collection and analysis of accurate and reliable data, which in turn will inform the production of baseline studies, innovations, models and systems; all which are designed to advance successful implementation within the Eastern Cape Ocean's Economy.

It is important to note that at its core the Research Agenda essentially serves as a catalyst for the development of a body of knowledge pertaining to the Eastern Cape Ocean Economy. In this regard it is important to recognise that the Research Agenda does not represent an end-state, or a final product, as its purpose is to continuously identify new research needs and requirements; in line with legislative, policy, strategic and operational changes which occur within the Ocean Economy; it is therefore an iterative document that needs to be subject to constant review and update.

SCOPE

OF THE RESEARCH AGENDA

As stated above, the purpose of the Research Agenda is to provide decision - and implementation support pertaining to the Ocean Economy of the Eastern Cape. In this regard it aims to create a better understanding of challenges within the Ocean Economy; and lay the foundation for the development of effective and efficient implementation solutions.

In order to ensure the effective and efficient implementation of the Strategic Roadmap for the Eastern Cape Oceans Economy, it is essential that all aspects pertaining to planning and policymaking must be rooted in accurate and reliable data. Another critical success factor would be the ability to establish an institutional capacity that would ensure the achievement of the goals, objectives and outputs of the Strategic Roadmap. However, on the one hand, the success of both the planning and implementation of the Strategic Roadmap, is dependent on the ability to innovate and thus increase the effectiveness and efficiency of the interventions. Whist on the other hand, requiring an early-warning and risk mitigation ability ensure that risk is timeously identified and mitigated.

In the light of these requirements, the scope of the Research Agenda has been structured across four (4) research dimensions.

These dimensions include:

- the baseline planning and policy dimension;
- the implementation and institutional dimension;
- the enhancement of effectiveness and efficiency dimension; and
- the early-warning and risk mitigation dimension.



The Oceans Economy Research Agenda aims to create a better understanding of the challenges within the Oceans Economy.

BASELINE PLANNING AND POLICY DIMENSION

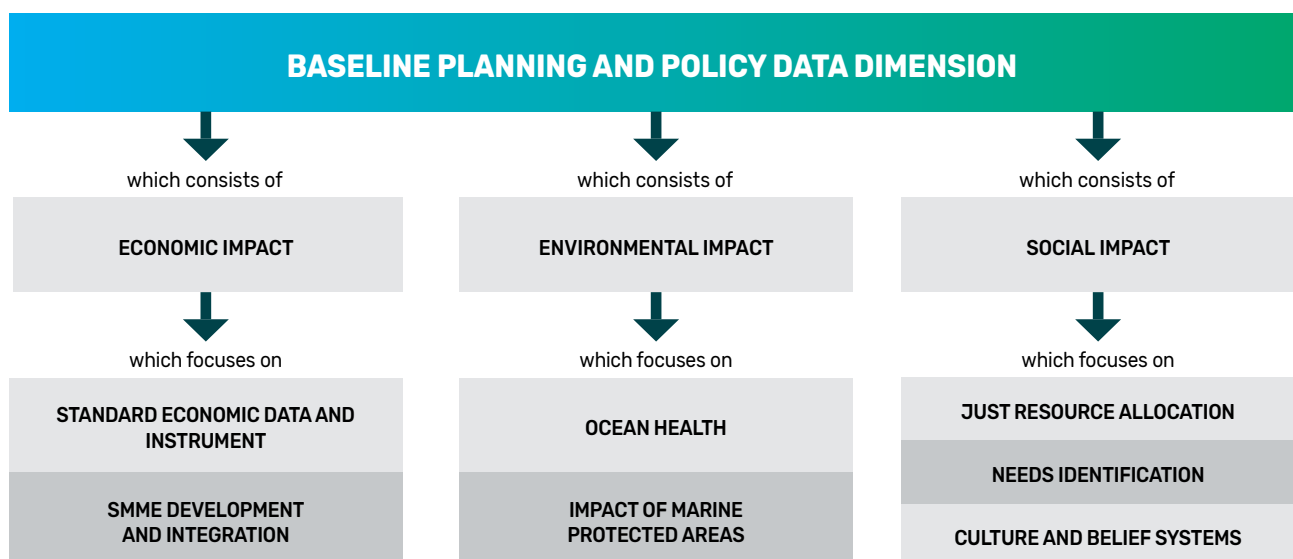
The baseline planning and policy dimension essentially deals with legislative, policy and planning issues pertaining to economic, social and environmental aspects relevant to the Eastern Cape Oceans Economy.

In this regard the economic component focusses on the develop of decision- and implementation-support mechanisms pertaining to the development of standardised economic datasets and economic instruments. The focus on the development of standardised economic datasets and instruments is essential for economic planning and to ensure that accurate economic data is generated to inform interventions.

Additionally, the economic component will also focus on a range of aspects pertaining to the SMME sector, in order to ensure inclusion of this sector into all planning, policy and implementation protocols.

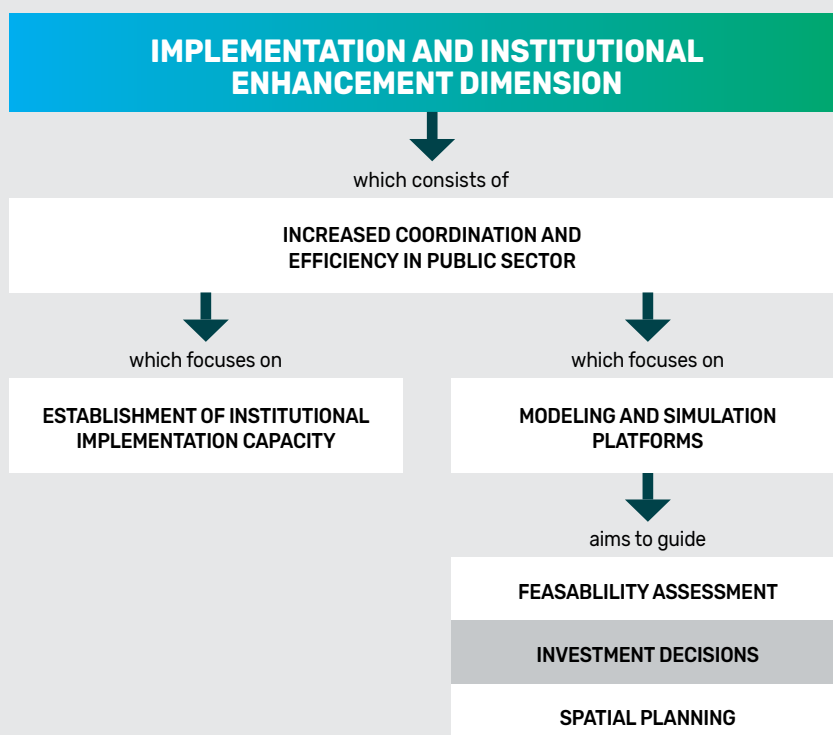
The social component of this dimension focusses on mechanisms that will ensure that the needs of communities are correctly articulated and incorporated into planning and implementation processes. This is required in order to ensure an equitable and just distribution of resources. This component will also focus on the role of culture and belief systems in ensuring high-impact levels are achieved through these interventions.

The environmental component is vast, but from a high-level perspective, it will focus on Ocean Health and all the associated components, as well the role of the role of Marine Protected Areas in ensuring optimal environmental protection, whilst ensuring equitable access to resources for sustainable use.



IMPLEMENTATION AND INSTITUTIONAL DIMENSION

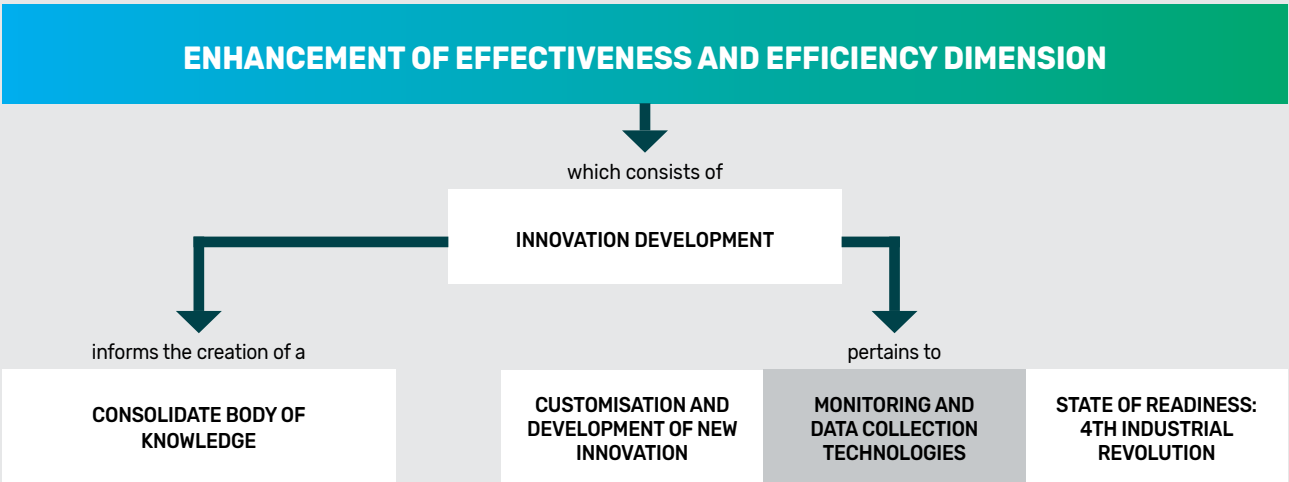
This dimension focussed primarily on increasing the coordination, effectiveness and efficiency within the public sector. To this effect, it is primarily concerned with the design, location, establishment and operation of an institutional implementation capacity within the Provincial Government of the Eastern Cape Province. It also focusses on the develop of both a modelling and simulation capability, that would empower the relevant institutional entities to make informed feasibility, investment and spatial planning decision.



ENHANCEMENT OF EFFECTIVENESS AND EFFICIENCY (INNOVATION) DIMENSION

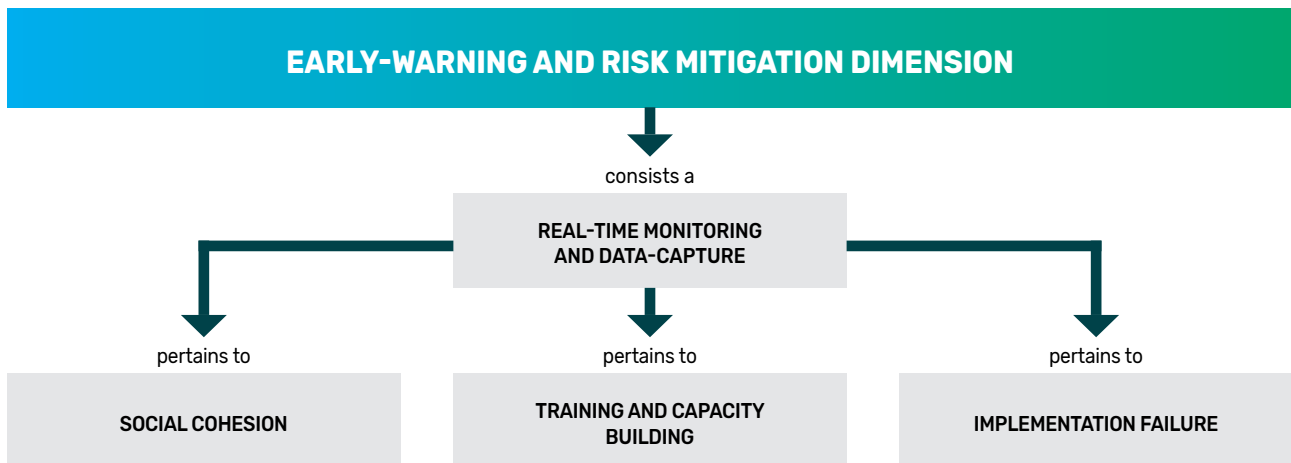
This dimension essentially deals with innovation. It focusses on innovations in the field of data-gathering and the positioning the Eastern Cape Ocean Economy to optimally benefit from innovations associated with the 4th Industrial Revolution.

It also focusses on ensuring the development and maintenance of an Eastern Cape Ocean Economy Body of Knowledge, that will inform both technology development and transfer whilst driving innovation and increasing the competitiveness of the sector.



EARLY-WARNING AND RISK MITIGATION DIMENSION

The success of all interventions is greatly dependent on the ability to detect risk and to rapidly respond to these risks as they emerge. Accordingly, this dimension focusses on the development of a range of real-time early-warning and monitoring platforms and capabilities, with a special focus on implementation failure, capacity constraints, training and social cohesion.





This research agenda provides a better understanding of challenges so that appropriate solutions can be developed.

RESEARCH AGENDA

EASTERN CAPE OCEANS ECONOMY

RESEARCH DIMENSION: BASELINE PLANNING AND POLICY DEVELOPMENT

The Research Agenda contained in the table below, consist of five (5) components. They are:

- The first provides a very brief explanation of the research problem that needs to be addressed.
- The second states the Research Agenda Item that would have to be researched in order to address the research problem.
- The third classifies the research agenda item as either a baseline study for decision-support, an innovation or a model or system.
- The fourth aligns the research agenda item with the objectives of the Research Agenda, namely decision- or implementation support.
- Whilst the fifth lists the component of the Strategic Roadmap that is to be supported through the production of the relevant Research Agenda.

The following section contains the research agenda items pertaining to baseline planning and policy development:

RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	OBJECTIVE OF STRATEGIC ROADMAP BEING ADDRESSED
ECONOMIC				
There is a lack of standardised economic data and instruments pertaining to the Eastern Cape Ocean Economy	01 Standard Method to measure and track GDP	Models and/or systems	Decision-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity
	02 Standardised Industrial Classification for the Ocean Economy	Models and/or systems	Decision-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity
	03 Standardised economic multipliers for planning and reporting purposes	Models and/or systems	Decision-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity
	04 Eastern Cape Ocean Economy Satellite Account	Models and/or systems	Decision-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity

RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	OBJECTIVE OF STRATEGIC ROADMAP BEING ADDRESSED
There is a lack of standardised economic data and instruments pertaining to the Eastern Cape Ocean Economy	05 Economic Efficiency Model for the Eastern Cape Ocean Economy	Models and/or systems	Decision-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity
	06 Holistic Value-Chain Analysis of the Eastern Cape Ocean Economy	Baseline study for decision-support	Decision-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity
	07 Integrated Eastern Cape Ocean Economy Social Accountability Matrix	Models and/or systems	Decision-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity
	08 Integrated clustering model for the Eastern Cape Ocean Economy	Models and/or systems	Implementation-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity
	09 Integrated and multi-dimensional cost-benefit analysis model (and simulation capacity) focussing on all interventions being implemented across the complete Ocean Economy Portfolio.	Models and/or systems	Decision-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity
There is a need to identify and quantify the levels of investments by both the public and private sectors within the ocean economy.	10 Baseline assessment of investment levels by both the public and private sector in the Eastern Cape Provincial Ocean Economy.	Baseline study	Decision-support	Secure new implementation resources and investments into the Ocean's Economy



RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	OBJECTIVE OF STRATEGIC ROADMAP BEING ADDRESSED
There is a need to develop a spatial socio-economic baseline mapping of the beneficiation derived from the Eastern Cape Ocean Economy.	11 Mapping socio-economic beneficiation within the spatial economy of the Eastern Cape Ocean Economy.	Baseline study	Decision-support	Ensure fast-tracked implementation and impact realisation of the initial catalytic portfolio to meet the first five-year targets
There is a lack of data to underpin decision support regarding the establishment of a boat building capability within the Port of East London.	12 Baseline Study pertaining to the scale of recapitalization requirements and supporting mechanisms including the development of a model for the allocation of fishing permits and other potential incentives in support of recapitalisation.	Baseline study	Decision-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
There is a need to determine the feasibility of establishing linkages between the automotive industry in Gauteng and the Port of East London.	13 Baseline study to determine the feasibility of establishing linkages between the Port of East London and inland automotive manufacturers. Additionally, the study should identify mechanisms that could attract automotive companies to the Port of East London.	Baseline study	Decision-support	Unblock and/or fast-track catalytic projects within the Eastern Cape Ocean's Economy that would lay the foundation for future developments



RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	OBJECTIVE OF STRATEGIC ROADMAP BEING ADDRESSED
There is a need to define and quantify both supply and demand elements in relation to the carrying capacity of the Eastern Cape Ocean Economy.	14 Baseline supply-side quantification of the carrying-capacity of the Eastern Cape Ocean Economy.	Baseline study	Decision-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity
	15 Baseline demand-side analysis of the Eastern Cape Ocean Economy in relation to its carrying-capacity.	Baseline study	Decision-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity
Private sector investors appear to be unwilling to invest/partners in the boat building sector in the Port of East London. In this regard no feasible private sector investment and/or partnership has been concluded.	16 Determine the feasibility of establishing a boat building capacity and attracting investments to the Port of East London.	Baseline study	Decision-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector

RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	OBJECTIVE OF STRATEGIC ROADMAP BEING ADDRESSED
There is a requirement for clustering of the Maritime economy in order to increase its comparative and competitive advantage within the broader global ocean economy.	17 In order to increase the competitive and comparative advantages of the Eastern Cape maritime economy, an integrated local, provincial, national and global clustering model needs to be developed.	Models and/or systems	Implementation-support	Secure new implementation resources and investments into the Ocean's Economy
	18 Develop a modelling and simulation capability to support decision-making and economic planning in the sector.	Models and/or systems	Decision-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
Capital investment levels required to achieve the objectives of Operation Phakisa has not been quantified for the Eastern Cape Province.	19 Quantify required Capital Investments Levels for the Eastern Cape Ocean Economy	Baseline study	Decision-support	Secure new implementation resources and investments into the Ocean's Economy
	20 Develop a model to guide and inform the sourcing of capital investments.	Models and/or systems	Implementation-support	Secure new implementation resources and investments into the Ocean's Economy



RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	OBJECTIVE OF STRATEGIC ROADMAP BEING ADDRESSED
There is a need to quantify the state of transformation within the Ocean Economy.	21 Baseline Study: Transformation within the Eastern Cape Ocean Economy.	Baseline study	Decision-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	22 Policy Measures to address transformation challenges in the Eastern Cape Ocean Economy.	Baseline study	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector





RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	OBJECTIVE OF STRATEGIC ROADMAP BEING ADDRESSED
SOCIAL				
Community needs are not accurately articulated and integrated into policymaking as well as programme and project design.	23 Policy-framework to ensure that community needs are correctly quantified, defined and incorporated into all relevant provincial planning, implementation and monitoring platforms.	Baseline study	Decision-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	24 Quantify the levels of disjuncture between community and government expectations regarding the Ocean Economy and the quantum of available resources	Baseline study	Decision-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
There is a lack of knowledge and understanding regarding the impact of cultural, social and religious value systems on interventions pertaining to the Ocean Economy.	25 Baseline Study: Impact of cultural, religious and social values on the implementation of Eastern Cape Ocean Economy interventions.	Baseline study	Decision-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	26 Global or regional comparative study: Measuring the importance of culture in advancing the Eastern Cape Ocean Economy.	Baseline study	Decision-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector

RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	OBJECTIVE OF STRATEGIC ROADMAP BEING ADDRESSED
There is a need to quantify the impact of interventions across all dimensions of the Ocean Economy in near real-time.	27 Realtime impact assessment measuring platforms	Models and/or systems	Implementation-support	Recalibrate the portfolio based on performance achieved and changes in the operating and strategic environment to maintain implementation momentum across the next MTEF and MTSF cycles
Limited data exist pertaining to the identification of a means of ensuring socially just resource allocation within the Ocean Economy of the Eastern Cape	28 Model for ensuring socially just resource allocations within the Eastern Cape Ocean Economy.	Models and/or systems	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	29 Integrated Ocean Governance system aimed at ensuring social justice regarding resource allocation and utilisation	Models and/or systems	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector



RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	OBJECTIVE OF STRATEGIC ROADMAP BEING ADDRESSED
SMME DEVELOPMENT AND INTEGRATION				
Identify opportunities for value-addition for small scale enterprises across the Ocean Economy Portfolio	30 Baseline Assessment of available value-addition and market opportunities for SMMEs' within the Eastern Cape Ocean Economy	Baseline study	Decision-support	Secure new implementation resources and investments into the Ocean's Economy
	31 Inter-active trading platform to connect SMME's with value-addition and market related opportunities in the Ocean Economy.	Innovation	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
There is no consolidated baseline data pertaining to SMME's in the Eastern Cape Ocean's Economy	32 Baseline study: SMME's in the Eastern Cape Ocean Economy	Baseline study	Decision-support	Recalibrate the portfolio based on performance achieved and changes in the operating and strategic environment to maintain implementation momentum across the next MTEF and MTSF cycles
	33 Realtime interactive database of SMME's in the Eastern Cape Oceans Economy	Models and/or systems	Implementation-support	Recalibrate the portfolio based on performance achieved and changes in the operating and strategic environment to maintain implementation momentum across the next MTEF and MTSF cycles



RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	OBJECTIVE OF STRATEGIC ROADMAP BEING ADDRESSED
There is no consolidated baseline data pertaining to SMME's in the Eastern Cape Ocean's Economy	34 A detailed assessment to identify possible barriers to entry and to develop appropriate mechanisms to mitigate the impact of barriers to entry for SMME's.	Baseline study	Implementation-support	Recalibrate the portfolio based on performance achieved and changes in the operating and strategic environment to maintain implementation momentum across the next MTEF and MTSE cycles
	35 Baseline study of success factors that has led to commercial success of SMME's in the sector.	Baseline study	Decision-support	Recalibrate the portfolio based on performance achieved and changes in the operating and strategic environment to maintain implementation momentum across the next MTEF and MTSE cycles
It is unclear what the role and impact of cooperatives is within the Ocean Economy of the Eastern Cape	36 Conduct an economic mapping study of cooperatives operating within the coastal economy and determine the state and potential impact of cooperatives on the advancement of the Ocean Economy.	Baseline study	Implementation-support	Recalibrate the portfolio based on performance achieved and changes in the operating and strategic environment to maintain implementation momentum across the next MTEF and MTSE cycles

RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	OBJECTIVE OF STRATEGIC ROADMAP BEING ADDRESSED
ENVIRONMENT ¹				
There is no reliable data to quantify the impact of illegal activities on the Ocean Economy, and what can be done to reduce the impact of such legal activities on the Ocean Economy.	37 Quantify the impact of the illegal activities on the Oceans Economy in the Eastern Cape	Baseline study	Decision-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
Quantify the impact of Marine Protected Areas (MPA) on SMME and community development within the Ocean Economy	38 Impact study to quantify the possible impacts of relaxing regulations pertaining to the management of Protected Areas. Additionally, the study should identify mechanisms required to unlock the full potential of the coastal economy through the relaxing of regulations pertaining to Protected Areas.	Baseline study	Decision-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	39 Develop a framework to ensure sustainable resource use in MPAs by local communities	Models and/or systems	Implementation-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity

¹ It should be noted that a detailed Research Agenda regarding maritime law enforcement has been developed by the Nelson Mandela University as part of its FishForce Project. Therefore, this section does not include the research agenda items listed in the FishForce Research Agenda, however these two Research Agendas should be read together to form a comprehensive understanding of the complex research needs pertaining to ocean governance and law enforcement.

RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	OBJECTIVE OF STRATEGIC ROADMAP BEING ADDRESSED
Quantify the impact of the Integrated Coastal Management Act on the development of coastal economies.	40 Impact Assessment and Policy recommendations: The impact of the Integrated Coastal Management Act on coastal communities.	Baseline study	Implementation-support	Recalibrate the portfolio based on performance achieved and changes in the operating and strategic environment to maintain implementation momentum across the next MTEF and MTSF cycles
The impact of the commodification of environmental resources within the Ocean Economy has not been quantified.	41 Impact Assessment: Commodification of environmental resources in the Eastern Cape Ocean Economy.	Baseline study	Decision-support	Recalibrate the portfolio based on performance achieved and changes in the operating and strategic environment to maintain implementation momentum across the next MTEF and MTSF cycles
Quantify the current and future impacts on climate change of the resource base of the Ocean Economy	42 Impact Assessment: Impact of Climate Change on the Eastern Cape Ocean Economy.	Baseline study	Decision-support	Recalibrate the portfolio based on performance achieved and changes in the operating and strategic environment to maintain implementation momentum across the next MTEF and MTSF cycles
	43 Climate Change Mitigation Measures for the Eastern Cape Ocean Economy.	Baseline study	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector



RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	OBJECTIVE OF STRATEGIC ROADMAP BEING ADDRESSED
Quantify the current and future impacts on climate change of the resource base of the Ocean Economy	44 The use of indigenous knowledge systems to mitigate the impact of climate change on the Eastern Cape Ocean Economy.	Baseline study	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	45 Identification of local adaptations to climate change which can be duplicated across the Eastern Cape Ocean Economy	Baseline study	Decision-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	46 Quantify the impact of local adaptations measures to climate changes	Baseline study	Decision-support	Recalibrate the portfolio based on performance achieved and changes in the operating and strategic environment to maintain implementation momentum across the next MTEF and MTSE cycles
	47 Quantify the impact of climate change on coast cities in the Eastern Cape Province	Baseline study	Decision-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	48 Develop climate services to build resilience of coastal communities to climate change in the Eastern Cape.	Innovation	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector



RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	OBJECTIVE OF STRATEGIC ROADMAP BEING ADDRESSED
Determine the state of the Ocean health of the Eastern Cape Province.	49 Status Quo Assessment: Ocean Health of the Eastern Cape Province.	Baseline study	Decision-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	50 Mechanisms to monitor and measure the health status of the Eastern Cape Ocean Economy.	Models and/or systems Innovations	Implementation-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity
	51 Quantify the contribution of ocean health to human well-being.	Baseline study	Decision-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector



RESEARCH DIMENSION: IMPLEMENTATION AND INSTITUTIONAL MECHANISMS

The following section contains the research agenda items pertaining to implementation and institutional mechanisms:

RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	SUPPORT TO STRATEGIC ROADMAP
Planning tools need to integrate socio-economic and anthropological aspects to advance maritime spatial planning	52 Integrated socio-economic and anthropological spatial planning platform relevant to the Ocean Economy	Models and/or systems	Implementation-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity
No modelling and simulation capability exist in the Eastern Cape to supporting the implementation of Operation Phakisa	53 Integrated modelling and simulation platform for policy and planning purposes.	Models and/or systems	Decision-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity
There is a need to develop an integrated framework to assess and guide investment decision-making	54 Investment decision model	Models and/or systems	Decision-support	Secure new implementation resources and investments into the Ocean's Economy
	55 Quantify the trickle-down effect of Ocean Economy Investments	Baseline study	Decision-support	Secure new implementation resources and investments into the Ocean's Economy
	56 Develop an integrated model to measure the quantum of the spill-over effect of investment into other sectors	Models and/or systems	Decision-support	Secure new implementation resources and investments into the Ocean's Economy



RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	SUPPORT TO STRATEGIC ROADMAP
There is a need to quantify the impact of approval and coordination processes within the public sector as it pertains to the Oceans Economy. This would require the identification of mechanisms that can be implemented in order to increase effectiveness and efficiency of approval processes.	57 Quantify the impact of current approval and coordination processes within the public sector in order to ensure the realisation of the potential of the Ocean Economy in the Eastern Cape.	Baseline study	Decision-support	Secure new implementation resources and investments into the Ocean's Economy
Quantifying the bay holding capacity of the Algoa Bay and identifying appropriate responses (determine the number of vehicles that the port and bay can accommodate)	58 Quantifying bay holding facilities	Baseline study	Decision-support	Ensure fast-tracked implementation and impact realisation of the initial catalytic portfolio to meet the first five-year targets
Quantify the feasibility and potential benefits of offshore bunkering towards advancing sustainable economic development.	59 Quantify impact and critical success factors required to ensure the establishment of a competitive bunkering capability.	Baseline study	Decision-support	Ensure fast-tracked implementation and impact realisation of the initial catalytic portfolio to meet the first five-year targets

RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	SUPPORT TO STRATEGIC ROADMAP
A study is required to document and quantify the impact of infrastructure backlogs, particularly in relation to providing access to coastal communities in order to accelerate the achievement of the strategic Ocean Economy imperatives.	60 Audit: Infrastructure backlogs that delay access to coastal economic opportunities	Baseline study	Decision-support	Ensure fast-tracked implementation and impact realisation of the initial catalytic portfolio to meet the first five-year targets
There is a need to develop a statistical model which could be applied to evaluate the feasibility of establishing small harbours along the coast of the Eastern Cape Province.	61 Statistical Model: Quantifying the feasibility of small harbour developments	Models and/or systems	Decision-support	Incrementally increase the portfolio to exceed 5-year targets and lay the foundation for accelerated implementation for the 7 th Administration
	62 Systems thinking capability to model and simulated potential impacts related to small-harbour development.	Models and/or systems	Decision-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity
A review of legislative constraints that prevent local government from optimally functioning and operating within the Coastal Economy.	63 Legislative Review of constraints impacting local government within the Ocean Economy of the Eastern Cape	Baseline study	Decision-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity
There is a need to develop an operational model for a transversal implementation entity.	64 Business case for establishment, location and operation of a transversal unit tasked with implementing Ocean Economy interventions.	Baseline study	Decision-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity

RESEARCH DIMENSION: EARLY-WARNING AND RISK MITIGATION

The following section contains the research agenda items pertaining to early-warning and risk mitigation.

RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	SUPPORT TO STRATEGIC ROADMAP
It is currently not clear what the impact of policy decision within the Oceans Economy is on Social-Cohesion	65 Determine intended and unintended impacts of policy decisions on social cohesion within the Ocean Economy	Baseline study	Decision-support	Recalibrate the portfolio based on performance achieved and changes in the operating and strategic environment to maintain implementation momentum across the next MTEF and MTSF cycles
Anecdotal evidence appears to support the notion that many projects in the Ocean Economy appears to have failed.	66 Project Failure Audit to identify reasons for project failure	Baseline study	Decision-support	Recalibrate the portfolio based on performance achieved and changes in the operating and strategic environment to maintain implementation momentum across the next MTEF and MTSF cycles
	67 Develop mitigation plan to address project failures	Baseline study	Decision-support	Incrementally increase the portfolio to exceed 5-year targets and lay the foundation for accelerated implementation for the 7 th Administration



RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	OBJECTIVE OF RESEARCH AGENDA BEING ADDRESSED	SUPPORT TO STRATEGIC ROADMAP
<p>There is a need to develop an integrated database that could be used to identify training capacity, capacity needs, available resource and learnerships that are available in order to match it with the demand of the industry and those requiring training.</p> <p>This might require a consolidation of data located across the full SETA portfolio to ensure better coordination.</p>	68 Integrate training database	Models and/or systems	Implementation-support	Increased capacity building and training to ensure optimal employment levels and increased effectiveness and efficiency within the Ocean's Economy
	69 Baseline assessment to determine the quality of training and the practical capability of those being trained.	Baseline study	Decision-support	Increased capacity building and training to ensure optimal employment levels and increased effectiveness and efficiency within the Ocean's Economy
	70 Profile learners that have not completed training or that have not been absorbed into the industry	Baseline study	Decision-support	Increased capacity building and training to ensure optimal employment levels and increased effectiveness and efficiency within the Ocean's Economy



RESEARCH DIMENSION: EARLY-WARNING AND RISK MITIGATION

The following section contains the research agenda items pertaining to increased effectiveness and efficiency (innovation).

RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	COMPONENT OF THE KNOWLEDGE CYCLE	SUPPORT TO STRATEGIC ROADMAP
The requirements for the Eastern Cape Ocean Economy to fully benefit from the Fourth Industrial Revolution has not been defined	71 Baseline assessment: Policy Implications of the Fourth Industrial Revolution for the Eastern Cape Ocean Economy	Baseline study	Decision-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	72 Quantifying the impact of digitalisation and disruptive technology on the Ocean Economy in the Eastern Cape.	Baseline study	Decision-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	73 Fourth Industrial Revolution: Policy and Implementation Options	Baseline study	Decision-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
There is a need to develop innovations and technologies that could be used to monitor and/or patrol Oceans or spaces within the Ocean Economy	74 Drone Technologies	Innovation	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector

RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	COMPONENT OF THE KNOWLEDGE CYCLE	SUPPORT TO STRATEGIC ROADMAP
There is a need to develop innovations and technologies that could be used to monitor and/or patrol Oceans or spaces within the Ocean Economy	75 Nano satellite technologies	Innovation	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	76 Advanced optics to identify vessels under all climatic conditions	Innovation	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	77 Determine the feasibility and technologies required for providing emergency supplies via drone	Baseline study	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	78 Drone and satellite applications for monitoring marine mammals	Innovation	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector

RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	COMPONENT OF THE KNOWLEDGE CYCLE	SUPPORT TO STRATEGIC ROADMAP
There is a need to develop accurate up to date mapping data of the ocean floor	79 Customised underwater mapping technologies to meet the mapping demands of the Ocean off the Eastern Cape	Innovation	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	80 Innovative new underwater drone and glider technologies to map the sea floor; over longer periods.	Innovation	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	81 Innovation to transmit data from submerged drones or gliders in real-time	Innovation	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
Ocean flows and currents around the South African Coastline is unique and reduces the applicability of imported technologies.	82 Customisation of existing technologies or the development of new technologies to meet the demands of underwater operations along the coast of the Eastern Cape	Innovation	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector



RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	COMPONENT OF THE KNOWLEDGE CYCLE	SUPPORT TO STRATEGIC ROADMAP
There is a need to develop new technologies that would increase the accuracy to monitor change in Ocean Conditions	83 Develop a real-time monitoring capability that can cover large portions of the ocean in order to detect any changes in conditions	Innovation	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	84 Develop a simulation model that will quantify the impact of changes in ocean conditions on food security and stocks	Models and/or systems	Implementation-support	Recalibrate the portfolio based on performance achieved and changes in the operating and strategic environment to maintain implementation momentum across the next MTEF and MTSF cycles
It appears that not all aquaculture species are optimally compatible with all sea water conditions for the purposes of commercial aquaculture activities	85 Develop a technology to analyse and determine the compatibility of various fish species with sea water found at different locations within the Eastern Cape Ocean Economy	Innovation	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
There is no consolidated Body of Knowledge pertaining to the South African and/or Eastern Cape Ocean Economy	86 Consolidated, real-time and interactive data platform that contains research outputs and information sources relevant to the Ocean Economy	Models and/or systems	Implementation-support	Establish and operate a Transversal Ocean's Economy Portfolio Management Capacity



RESEARCH PROBLEM	RESEARCH AGENDA ITEM	RESEARCH AGENDA ITEM CLASSIFICATION	COMPONENT OF THE KNOWLEDGE CYCLE	SUPPORT TO STRATEGIC ROADMAP
Anecdotal data indicates that the cost of imported feed for aquaculture is having a negative impact on the commercial feasibility of the sector	87 Determine the feasibility of developing and producing local aquaculture feed that is compliant with international quality standards	Baseline study for decision-support	Decision-support	Unblock and/or fast-track catalytic projects within the Eastern Cape Ocean's Economy that would lay the foundation for future developments
Plastic and micro-plastic pollution presents a clear and present danger to the Ocean Economy	88 Map the channels of how plastics enter the Ocean Economy	Baseline study for decision-support	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	89 Map how plastics move within the Ocean Economy	Baseline study for decision-support	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
	90 Develop mitigation technologies to reduce the impact of plastics on the Ocean economy	Innovation	Implementation-support	Increase levels of innovation and research to advance accurate decision-support and competitiveness of the sector
There does not appear to be a detailed innovation strategy pertaining to the Eastern Cape Oceans Economy	91 Develop Technology Trees, detailing solutions, technology platforms, infrastructure, base sciences and capacity required to produce required technological solutions.	Baseline study for decision-support	Implementation-support	Increased capacity building and training to ensure optimal employment levels and increased effectiveness and efficiency within the Ocean's Economy

CONCLUSION AND WAY FORWARD

In order to ensure the effective and efficient implementation of this Research Agenda, the following actions would have to be undertaken:

- The Research Agenda Items needs to be aligned with the requirements of the Strategic Roadmap; packaged as projects and be integrated into the both the Strategic Road Map and Implementation Plan.
- It is important that a coordinating entity be established to coordinate and collect all research outputs within the Ocean Economy, in order to ensure optimal dissemination, access and integration of data into decision-support and implementation-support processes.
- The bursary schemes of the Eastern Cape Provincial government needs to be realigned with the Research Agenda, to ensure that bursaries are provided for research relevant to the advancement of the sector.
- Memorandums of Understanding needs to be entered between the Eastern Cape Government and tertiary institutions in the Eastern Cape Province to support the production of research outputs contained in this and other relevant Research Agendas
- Tertiary institutions in the Eastern Cape needs to integrate the Research Agenda into their research and teaching interventions.
- A process for the continuous review and updating the Research Agenda needs to be established. This process needs to be supported by the creation of forums for dialog and debate, that will further advance the building of research capacity and awareness of research needs across the sector.



The Eastern Cape

OCEANS ECONOMY

RESEARCH AGENDA



Province of the
EASTERN CAPE
OFFICE OF THE PREMIER



environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA



Province of the
EASTERN CAPE
ECONOMIC DEVELOPMENT,
ENVIRONMENTAL AFFAIRS & TOURISM



ecsecc
eastern cape socio-economic
consultative council

NELSON MANDELA
UNIVERSITY