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Article

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Methodological Challenges in Assessing the Economic Impacts of Coastal and Marine Tourism in South Africa: Reflections from a Piloting Project

Urmilla Bob¹, Kamilla Swart², Harold Ngalawa³, Ntokozo Nzimande⁴

Abstract: Coastal and Marine Tourism (CMT), as part of the oceans economy, offers significant development opportunities that can contribute to job creation and sustainability. However, there are limited national and international best practices to assess the economic impacts of CMT. The aim of this study was to reflect on experiences from a piloting exercise that was undertaken to inform the development of a framework to assess the economic contribution of CMT to South Africa's tourism sector. Previous studies, focus on contextualising Operation Phakisa, examining CMT globally and in South Africa, and highlighting economic contributions identified in selected CMT case studies (including the economic models generally used). Drawing on the review of existing studies as well as discussions with key economic experts, a framework for a pilot study to assess the economic impacts of CMT in South Africa was developed. Supply (coastal and marine tourism business owners, accommodation establishments, tour operators and restaurants and retail outlets) and demand (clients/ tourists/ users) side data collection surveys were piloted. The reflections and experiences from the piloting reveal challenges such as the unwillingness of supply side stakeholders to participate, lack of access to locations to undertake research, inability to access databases with contact details of supply side stakeholders, lengthy surveys and quality of information in relation to specific questions. The implications of the piloting is that the Input-Output model and Tourism Satellite Account is the most appropriate economic approach for the South African context. The value of this article is that it is important to focus on demand side data collection and ensure streamlined data collection tools and processes.

Keywords: Coastal and Marine Tourism (CMT); Operation Phakisa; South Africa; economic models; piloting

JEL Classification: Z32

1. Introduction

Coastal and Marine Tourism (CMT), as part of the oceans economy, offers significant development opportunities that can contribute to job creation and sustainability. However, there are limited national and international best practices to assess the economic impacts of CMT. Furthermore, there are no specific accepted methodological approaches to assess the economic impacts of CMT within a country context. At the United Nations Conference on Trade and Development (UNCTAD) held in 2014, CMT was identified as one of the key sectors contributing towards the development of the oceans economy. (United Nations - UN, 2014) UNCTAD (UN, 2014) highlights that the oceans economy offers significant development opportunities for sectors such as sustainable fisheries and aquaculture, renewable marine energy, marine bio-prospecting, maritime transport and CMT. The UN (2014) specifically estimates that globally almost 350 million jobs are linked to the oceans through

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fishing, aquaculture, CMT and research activities. At the UNCTAD conference, it was indicated that of the one billion international tourists recorded in 2012, the United Nations World Tourism Organisation (UNWTO) estimated that approximately one in every two tourists visited the seaside which indicated that CMT is an important source of income and foreign exchange earnings. (UN, 2014)

This article summarises the key themes and issues emerging from a review of relevant literature on national and international approaches to identify best practices and current trends. The intention of the study was to inform the development of a framework to assess the economic contribution of CMT to South Africa's tourism sector. The focus was on research on the economic impacts of CMT, specifically identifying the economic modelling approaches and data collection approaches used. Based on the preliminary literature search, survey instruments were developed and piloted with the intention of developing a framework to assess the economic impact of CMT in South Africa, which included evaluating the appropriateness of economic modelling approaches. The rest of this article is organised as follows: the next section summarises key issues and themes emanating from literature reviewed. Thereafter, the methodological approach adopted for the piloting is presented. This is followed by a discussion of fieldwork implementation experiences and lessons, including recommendations emanating from these. Finally, concluding comments are forwarded.

2. Review on the Economic Impacts of CMT

Operation Phakisa

The Operation Phakisa, launched in 2014 in South Africa through the Department of Planning, Monitoring and Evaluation (DPME), context frames the focus of the research. Operation Phakisa was modelled after analysing and adopting aspects of the Malaysian marine cadastre conceptual model. (Institute for Global Dialogue, 2016) A marine cadastre is defined as marine management system that considers who has special rights, restrictions and responsibilities for marine space activities. (Abdullah et al., 2013) Operation Phakisa's CMT vision and aspiration is: "by 2030 South Africa is the premier experience-based coastal and marine tourism destination in Africa and is renowned as a top coastal and marine tourism destination globally with a unique range of experiences for all visitors". (DPME, 2015, p. 4)

South Africa's oceans are capable of generating an estimated R129 177 billion to the Gross Domestic Product (GDP) by the year 2033. (DPME, 2014) The Institute of Global Dialogue (2016) further indicates that there are 250 000 jobs directly linked to various maritime regimes locally, but through Operation Phakisa this number could be up-scaled to a million jobs. Shelembe (2015) indicates that the South African government, through Operation Phakisa, will implement ocean economy projects, which are expected to contribute more than R20 billion to the GDP by 2019. Operation Phakisa focuses on unlocking the economic potential of the country's oceans by identifying six focus areas: marine protection services and ocean governance, aquaculture, maritime transport and manufacturing, offshore oil and gas exploration, small harbours and CMT. (DPME, 2014) In terms of the CMT focus area, this is led by the National Department of Tourism (NDT) and includes initiatives within the coastal tourism space, projects as well as interventions to be put in place and to analyse the contribution and potential contribution of CMT to non-urban communities. (Shelembe, 2015) The government of South Africa therefore plans to accelerate growth and development by unlocking the potential of CMT to provide jobs and improve socio-economic conditions of previously

disadvantaged communities in the country. (DPME, 2014) This is supported by van Wyk (2015) who asserts that the implementation of Operation Phakisa is to stimulate the country's blue economy. However, as indicated earlier, in South Africa, there is currently limited data available relating to the economic impact of CMT which will provide a better understanding of the economic contribution of CMT and its potential influence on the tourism sector in South Africa, especially meeting national development goals. Key challenges that CMT in South Africa face, according to DPME (2014; 2015) and Shelembe (2015), include lack of uptake of coastal and marine assets/resources for tourism purposes, CMT product portfolio, high levels of unemployment and unskilled resources (especially in rural areas and around marine assets), limited participation of the private sector, insufficient infrastructure and underdeveloped and uncoordinated marine related events and recreation. They also stress the importance of skills and capacity building as well as research, technology and innovation as enablers.

The complex CMT environment was also noted as a challenge given the close association with leisure and recreational activities which include a wide variety of activities which are undertaken out of choice during leisure or play (DPME, 2015) and the range of CMT activities (Table 1). It is therefore difficult to differentiate between leisure, recreational and tourism activities which makes isolating the economic impacts of the various activities a difficult task.

Table 1. Marine tourism and coastal tourism activities identified by the CMT Lab

Marine Tourism	Coastal tourism
<ul style="list-style-type: none"> - Marine wildlife tourism (for example, seals, dolphins, turtles etc.) - Recreational fishing (for example, boat-based fishing, spear fishing, fishing competitions, etc.) - Scuba diving/ snorkelling (for example, shark cage diving) - Water sports (for example, big wave surfing, yachting, water skiing, water surfing, etc.) - Ocean experience (for example, cruise tourism, marinas, island tourism, under water archaeology, etc.) - Events (for example, marine competitions) 	<ul style="list-style-type: none"> - Coastal wildlife tourism (for example, land-based whale watching, marine turtle tours, etc.) - Sand/ beach sport (for example, kite-flying, beach combing, sand dune surfing, etc.) - Coastal heritage and events (for example, local seafood and cultural tourism, cultural history, etc.) - Sightseeing (for example, light house tourism, cycling, marathons, etc.) - Educational and scientific excursions (e.g. aquariums, etc.) - Spiritual experiences - Pure recreational (for example, dining out, shopping, etc.)

Source: Adapted from NDT (2016)

Operation Phakisa was reported as showing progress as stated by the former President Jacob Zuma in April 2016, that the government has unlocked investments amounting to about R17 billion in the Oceans Economy, as a result of Operation Phakisa, adding that since the inception of Operation Phakisa, over 4 500 jobs have been created in the various sectors (Department of Environmental Affairs - DEA, 2016). However, it is unclear how these figures were generated and the extent of CMT's contribution to the overall impacts.

3. CMT Globally and in South Africa

The United Nations Environment Programme (UNEP) (2009, p. 10) notes that "coastal tourism is based on a unique resource combination at the interface of land and sea offering amenities such as water, beaches, scenic beauty, rich terrestrial and marine biodiversity, diversified cultural and historic heritage, healthy food and good infrastructure". Two-thirds of the planet's surface area is made up of the marine environment (Cheung et al., 2012) with substantial potential for tourism and recreational activities. According to Seymour (2012, p. 27), marine tourism comprises of "a number of different

aspects such as marine/coastal environments, marine protected areas and marine activities which together contribute to its existence". Coastal and marine environments have gained popularity as tourism settings amongst tourists. (Honey & Krantz, 2007) Biggs et al. (2015) indicate that marine-orientated nature-based tourism plays an important socio-economic role, and provides an incentive for conservation in many coastal regions. Similar sentiments are expressed by Orams and Lück (2014) who state that nature-based tourism contributes to the coastal economy of many tropical marine systems around the world. Despite these potential advantages, there are increasing threats that impact on CTM which includes climate change, economic shifts, security concerns and developmental demands. Specifically, Biggs et al. (2015) warn that nature-based tourism in marine systems is under threat from global change. Key coastal and marine activities, identified by the International Coastal and Marine Tourism Society (ICMTS, nd), are presented in Table 2.

Table 2. Coastal and marine activities

Coastal Recreational Activities	Marine Recreational Activities
Sand-dune surfing	Scuba diving
Beach volleyball	Snorkelling
Tidal-pool exploration	Sailing
Kite-flying	Yachting
Land-yachting	Water-skiing
Fishing	Wake-boarding
Walking	Boat-based fishing
Skim-boarding	Wildlife watching
Horse-riding	Scenic boat cruising
Sand-castle building	Sea-kayaking
Sand sculpting	Surfing
Radio-controlled boating	Surf-ski paddling
Wildlife watching	Kite-surfing
Shell-fish gathering	Board-sailing (windsurfing)
Beach-combing	Dragon-boat paddling
Sun-bathing (baking)	Stand-up-paddle boarding, swimming
Picnic	Coastal drives (including sea watching from viewpoints)
Barbecues	Scenic boat trips/ visits (including to islands)
	Ferry trips
	Cruise ship visits (as passengers and local visitors)
	Going to visitor centres (aquaria, museums, heritage, etc.)
	Maritime-related events and festivals
	Health therapy
	Reef walking
	Maritime museums

Source: ICMTS (nd)

Tourism has been acknowledged as one of the biggest key economic sectors in South Africa, which continues to receive considerable growth. According to Statistics South Africa (Stats SA, 2015), 98.3% of foreign arrivals into the country were for holiday purposes in the year 2015. Furthermore, the growth of domestic tourists in South Africa has increased annually, with 11.2 million domestic travellers in 2011. (Stats SA, 2011) According to Stats SA (2011), these domestic visitors travel for various reasons such as visiting friends and family, leisure/ holiday purposes and religious reasons, however, a major attraction for these visitors is its coastline. Stats SA (2015) reported that in 2005, 474 664 individuals were directly employed in the tourism sector, rising by 205 153 to 608 817 individuals in 2014. The tourism and travel industry in South Africa has become a significant factor in the economy and a great tool for job creation. The South African coastline as a major marine tourism destination with the potential to draw more tourists from around the world. (Seymour, 2012)

4. Economic Contribution Identified in Selected CMT Case Studies

Within the tourism sector, coastal tourism has significant tourist flows and generates income with coastal areas being a preferred destination. (Centre for Industrial Studies, 2008) Several studies present economic data on CMT in specific destinations. Some examples are presented in this section. Onofri and Nunes (2013) examine worldwide tourist coastal destination choice using a comprehensive global dataset at the country level, for both domestic and international tourists. They rely heavily on UNWTO datasets. They model tourist's behaviour in terms of a set of simultaneous, interdependent decisions. The two key variables used are coastal tourism flows (international and domestic coastal arrivals) and tourists' market expenditures. The key results were the identification of two tourist demand segments which showed different preferences for the worldwide coastal destinations with international tourists choosing their coastal destination because they have a strong preference for the cultural and natural environments while domestic tourists had a preference for beach characteristics.

The National Ocean Economics Programme (NOEP, 2005) in California, United States measured economic impacts from CMT by means of a census survey conducted in 2000, through identifying the different businesses/industries, sourcing the number of people employed and accounting for the revenue generated by these business/industries. According to the NOEP (2005), California was the 5th largest economy in the world in 2000 and had the largest ocean economy in the United States ranking number 1 overall for employment and Gross State Product (GSP). The methodology for this approach was based on using the ES-202 (the Covered Employment and Wages Programme) employment data, which are collected monthly by each State's Department of Labour and reported to the United States Department of Labour. (NEOP, 2005)

In 2009, a study was conducted which focused on creating barometers of economic change in marine tourism, fisheries and communities in New Zealand. (New Zealand Tourism Research Institute, 2009) A mixed method approach was adopted, combining interviews with largely online surveys to gain insights into the impacts associated with the industry on three stakeholders, namely: visitors, businesses and community. The main aim was to create an approach which could easily be replicated and developed further in the future, therefore creating the potential for a barometer of economic change for localities rather than just a once-off study. (New Zealand Tourism Research Institute, 2009) The study revealed that the dive group in particular has a significant daily impact on the local economy with an average of \$123 per day, therefore for every 1 000 visitors, their data indicated a local economic injection of \$306 106. It was also revealed that local businesses depend heavily on the visitor industry and are highly seasonal.

Some studies focused on specific CMT products/activities. For example, Hoyt (2001) examined whale watching as a commercial endeavour, with important educational, environmental, scientific and socio-economic benefits which was estimated to be at least a US\$1 billion industry, attracting more than 9 million participants a year in 87 countries and territories. In the aforementioned study, and as early as 1994, South Africa was already identified as one of the fastest growing whale watching countries. Hoyt (2001) used tourism expenditures to chart the worldwide growth of whale watching. In addition, these tourism expenditures represent measures of the socio-economic benefits of whale watching. Hoyt (2001) notes that the main economic variables are based on tourist expenditures for whale watching tickets (direct expenditures) and expenses incurred by tourists during as well as immediately before and after the whale watching experience (indirect expenditures). However, it is noted that this is not the total economic value of whale watching and that tourism expenditures are provided simply

as one measure of the overall total economic value. Hoyt (2001) utilised information from whale operators, tourism departments and researchers using surveys.

O'Connor et al. (2009) study on boat and land-based whale watching in South Africa revealed that in 2008 there was a slight increase in overall numbers of whale watching tourists compared to 1998, at a rate of 1.1% per annum. Over the decade whale boat-based whale watchers dramatically increased over the same period at a rate of 14% per annum. Furthermore, it was noted that in 1998, fifteen boat-based operators carried 6 176 whale watchers and generated \$174 500 in direct expenditure and \$1 000 800 in indirect expenditure while in 2008, twelve boat-based whale operators carried an estimated 48 000 whale watchers who generated \$2 762 427 in direct expenditure and \$8 192 104 in indirect expenditure. They further stated that land-based whale watching continued to be a huge tourist drawing card, particularly to the Western Cape (with the focus almost exclusively on southern right whales). They estimated that there were 519 150 land-based whale watchers in 2008 and Hermanus received approximately 70% of these or 369 232 tourists in 2008. Their calculations for land-based estimates were from estimated overnight accommodation capacity as well as estimations of whale festival attendance figures. According to Orams and Lück (2014), the humpback whales which are found in numbers in Vava'u, Tonga are an extremely valuable tourism resource, and present economic benefits to the local economy of about T\$10 million per year in 2009 from T\$750 000 per year in 1999. This increase being brought about by an increase in visitors to take part in whale watching, an increased number of operators and an increase in tour prices. A self-reply questionnaire was used to gather data which underscored that whales had become a major pulling factor to the area. Interviews with tour operators were also held, which confirmed the increasing influence of whale-watching to the tourism industry of Vava'u.

Vianna et al. (2012) identified shark diving tourism as a significant contributor to the economy of Palau, Philippines which generates about US\$18 million per year and accounts for about 8% of the GDP. They further showed that shark diving generated US\$12 million in salaries for the Palau economy per annum. In their study methods, Vianna et al. (2012) made use of a socio-economic survey with four different questionnaires as they were directed at four different stakeholders. O'Malley et al. (2013) estimated that direct expenditures on manta ray dives in 23 countries was estimated at over US\$73 million annually, with 10 countries accounting for almost 93% of the global expenditure estimate, specifically Japan, Indonesia, Maldives, Mozambique, Thailand, Australia, Mexico, United States, Federated States of America and Palau; and the direct economic impact of manta ray watching tourism was estimated at US\$140 million annually.

It is important to note that although there is an established body of literature on measuring economic impacts and modelling impacts, in terms of tourism research this area is relatively new and generally focuses on the impacts of specific tourism events or tourism types and assessing broader contributions to global, national and regional economies. In this regard, contributions to GDP and generation of jobs tend to dominate. However, there is limited and fragmented research that focuses on coastal environments. For example, Penn et al. (2016) state that pristine coastal environments are the key to Hawaii's worldwide fame and attraction to tourists but their economic value remains understudied.

Borch et al. (2011) conducted a study relating to the structure and economic effects of marine fishing tourism in Norway. In their methodology, two surveys categories were used: a supply side and a demand side. On the supply side, they highlight that the surveying of marine fishing tourism raises the challenge of identifying the industry catering to fishing tourists. The questionnaires (targeting fishing tourists and fishing enterprises) included questions about the number of accommodation units, beds,

rental boats and guest nights. The questionnaire also included questions about the length of the fishing tourism season, prices for accommodation and boat rental, the nationality of fishing tourists, travel group and mode of transport.

A few CMT studies have also been conducted in South Africa and some of these are discussed based on the methodological approaches utilised. Gallagher and Hammerschlag (2011) conducted a socio-economic case study of a shark-ecotourism company (Apex Expeditions) based in Gansbaai, Western Cape. They found that shark ecotourism revealed significant growth overtime and that an average customer spends about US\$350 per day, including other expenditure in the local economy such as accommodation, food transport and other recreational activities. Their study also revealed a high rate of community involvement and educational outreach from the company, such as donations to local community enterprises, around US\$2 000 annually. Myeza et al. (2010) investigated the socio-economic implications of the KwaZulu-Natal sardine run for local indigenous communities using questionnaires. They concluded that despite low local participation, the financial benefit to the community could amount to R17-18 million, and as much as R34-54 million if a multiplier effect of 2-3 is applied. Oberholzer et al. (2010) conducted a study which considered the socio-economic impact of Tsitsikamma, which is regarded as South Africa's oldest marine park. Community, business and visitor surveys were conducted. They found that the park contributed a total income of R21.7 million to the local economy.

After an examination of key international beach tourism source markets and trends, a sample of international beach tourism destinations and the potential South African products on the Eastern Seaboard, the Department of Economic Development, Environmental Affairs and Tourism (2015) concluded that:

- South Africa has the product base to attract international beach tourists, including additional supporting attractions to supplement the beach product which are in line with market demand trends;
- International outbound beach tourism is a major market, particularly from Europe where some 87 million international beach holidays are taken annually, of which 9.3 million are long-haul beach holidays;
- International tourism markets are growing and although the proportion of beach holidays taken remains steady, the proportions of long haul holidays, and the proportions of beach long haul holidays taken are growing, therefore the long haul beach market is increasing; and
- Long haul beach destinations are hosting from 70 000 to 1 500 000 beach tourists per annum.

The focus in relation to CMT is generally on national and global or product specific (such as whale watching) contributions based primarily on tourism figures. Additionally, the main methodological approaches adopted were:

- Survey based; (tourists/visitors and tourism enterprises)
- Macro-economic analysis drawing on national economic data;
- International datasets. (for example, the United Nations Tourism World Organisation - UNTWO)

From the review conducted in this study, five main approaches to measure the economic impacts of CMT were identified namely:

- Cost Benefit Analysis (CBA): The former Department of Environmental Affairs and Tourism (2004) in South Africa describes a CBA as a tool used either to rank projects or to choose the most appropriate option and the ranking or decision is based on expected economic costs and benefits. The aim of CBA is to present the lifetime costs and benefits of a project as a single number that can be compared together the interest rate prevailing or the costs and benefits of other projects to give either a net present value or a benefit/cost ratio; (HM Treasury, 2014)
- There are a couple of common errors that come with using this method, such as secondary benefits and multiplier effects, double counting, failure to recognise such costs and ignoring implicit or opportunity costs; (Department of Environmental Affairs and Tourism, 2004, p. 6)
- Input-Output (I-O) models: Rodrigues, Marques, Wood and Tukker (2016) state that an I-O model is widely used to study the environmental, social and economic repercussions and impacts of human activities. Surugiu (2009) describes an I-O model as a matrix that captures the flow of purchases and sales in the inter-industry arena, which allows impacts to be drawn then reported at the highest resolution. Economic impacts are generated through direct, indirect and induced demand in the economy which is presented in the manner of the industry as well as consumer purchases of goods and services. (McNay, 2011) Furthermore, to effectively make use of the multipliers for impact analysis, users must be in a position to avail detailed information with regards to their geographical region and industrial earnings as well as changes in output or employment that are associated with the project being studied. (McNay, 2011) Saayman et al. (2009) state that closely associated with I-O models are the calculation of multiplier effects which indicate the magnitude of economic benefits in terms of sales, income and employment generated by the initial spending in the economy due to the tourism activity. Rodrigues et al. (2016) state that while I-O models are useful, the detailed level of data required is often not available which requires the use of proxy data and aggregation. Furthermore, Saayman et al. (2009) indicate that regional input output tables are often not available (also in South Africa) and are expensive to develop because of the extensive data required.
- General equilibrium models, commonly known as the Computable General Model (CGE): According to Dywer and Spurr (nd), tourism's economic impact refers to the changes in the economic contribution that result from specific events or activities that comprise "shocks" to tourism demand and that these changes generate three types of effects, namely: direct effects, indirect effects and induced effects. They add that CGE models consist of a set of equations that characterise the production, consumption, trade and government activities of the economy. CGE models incorporate all I-O mechanisms, mechanisms for potential crowding out of one activity by another as well as for multiplier effects. (Dywer & Spurr, nd) Frechtling (2013) adds that CGE models address how a national economy adjusts to shock such as increased tourism expenditure or higher tax rates and reaches a new general equilibrium. Dywer and Spurr (nd) note that the strengths of the CGE approach to assessing the economic impacts of changes in tourism expenditure are many and vary, and they include the ability to model business and household demand for goods and services, relative price changes and substitution effects; take account of the interrelationships between tourism, other sectors in the domestic economy and foreign producers and consumers; incorporate endogenous price determination mechanisms; identify and test underlying assumptions; and allow initial expenditure shocks to originate from anywhere in the economy. Dywer and Spurr (nd) add that CGE models can guide policy makers in a variety of scenarios.
- Tourism Satellite Account (TSA): According to Frechtling (2013), the TSA is the single most important new macro-economic policy analysis tool developed in the last several decades to measure

tourism demand and its implications for a national economy. He adds that the TSA is a distinctive method of measuring the direct economic contributions of tourism expenditure to a national economy. Its unique approach derives from employing the principles and structure of the internationally adopted System of National Accounts (SNA) to measuring the direct economic impact of tourism. (Frechtling, 2013) He further adds that the TSA comprises of a set of inter-related tables that show the size and distribution of the different forms of tourism expenditure in a country and direct contribution to the GDP, employment and other macro-economic measures of a national economy. The UNWTO (2014) defines the TSA as the second international standard on tourism statistics that has been developed in order to present economic data relative to tourism within a framework on internal and external consistency with the rest of the statistical system through its link to the SNA. Frechtling (2013) indicates that to measure economic impacts, secondary data from governmental economic statistics, economic base models, I-O models, multipliers and visitor spending surveys need to be analysed.

- Time-series forecasting methods: Claveria and Torra (2014) assert that the increasing interest aroused by more advanced forecasting techniques, together with the requirement for more accurate forecasts of tourism demand at the destination level due to the constant growth of world tourism, has lead us to evaluate the forecasting performance of neural modelling relative to that of time series methods at a regional level. They indicate that since seasonality and volatility are important features of tourism data, there is a need to compare the forecasting accuracy of different techniques. This is also supported by Baggio and Sainaghi (2016) who highlight the complex dynamics of tourism systems and the usefulness of mapping time series into networks. Time-series forecasting methods can also be used to predict tourism demand for specific tourism locations.

CMT poses challenges given that the sites and activities are not discrete or venue-based to permit accurate estimations of numbers. Volumes are also a problem since there can be repeat visitors to a site or those participating in activities on the same day.

5. Piloting Methodological Approach

Given the above findings, a pilot study framework to assess the economic impacts of CMT in South Africa was developed. It was noted that there remains contestations pertaining to what constitutes spatially a CMT “zone”/location, specifically in relation to distance from the shore. Furthermore, it is unclear whether freshwater coastlines (such as dams) should be included. For the purposes of this research, the focus was on oceanic coastal area limited to the four coastal provinces (Eastern Cape, KwaZulu-Natal, Northern Cape and Western Cape). This is in line with other international and national CMT studies that focuses on ocean shorelines. Furthermore, while the data collection was concentrated in tourist areas close to the shoreline, the main focus was on CMT activities as summarised in Table 1. This delineated the scope of the study.

The first step was to decide on which of the five economic models identified during the literature review should be considered for the pilot. Based on a Key Economists Experts Forum Workshop held on the 28 June 2017 in Cape Town, it was agreed that time-series forecasting could not be undertaken at this stage given that this model requires panel data for a number of years and baseline information on key indicators which was not currently available at a national level. Furthermore, it was decided that the general equilibrium models were inappropriate given their complexities and the types of information needed. Thus, from the five models that was identified, three were piloted:

- CBA

- I-O
- TSA

From the literature review undertaken and during the Key Economists Experts Forum Workshop, key indicators were identified for application in the economic models in the pilot study. This is also a critical step to inform the development of the surveys for piloting. The approach adopted was to delineate supply and demand side variables required for the economic modelling. A range of indicators and sources of specific types of information were identified. Specifically, the following aspects were highlighted:

- Definitions of coastal and CMT (spatial scope): the scope of CMT was limited to four coastal provinces and oceans shoreline for the purposes of this project as indicated earlier;
- Validity and reliability of methodologies and sampling framework is important to consider. In terms of the sampling framework specifically, it is important to establish the number of target populations for data collection;
- Extent to which impacts can be disaggregated is also important to consider. Specifically, to what extent can the expenditure by a user/tourist or job creation be attributed to CMT? Questions in the survey were included to permit this type of analysis to be undertaken.

The CMT stakeholders identified to undertake an economic analysis were, from a supply side perspective, CMT business/enterprise owners and CMT and hospitality businesses (specifically accommodation, tour operators and restaurants and retail outlets, including a short customer survey to accompany these surveys to establish whether CMT was the main reason for visiting the location). On the demand-side, CMT visitors/ tourists (clients/customers/users) were identified.

Surveys were developed for each of these stakeholders. The key indicators identified which were covered in the surveys included:

- Tourism/visitor information (from visitors – including locals, accommodation sector, businesses, etc.)
 - Room occupancy vs bed occupancy;
 - Where are tourists staying and for how long; (types of accommodation and agreements)
 - Domestic versus foreign visitors;
 - Spending patterns on specific categories; (accommodation – tourists only, transport, cost for CMT products, food and beverages, coastal and marine tourism activity merchandise, shopping, other costs)
 - Size of immediate group; (spending money together)
 - Motivation and main reasons for travel to location.
- Businesses (accommodation, tour operators, restaurants and retailers)
 - Monthly expenditure; (capital expenditure, salaries and wages, advertising and marketing, travelling, rates and taxes and other costs)
 - Monthly income; (sales of CMT products, sponsorships, income from merchandise sales and other costs)

- Use of CMT service providers such as caterers, cleaning services, security and transport; (number and amount paid on a monthly basis)
- Number of clients/customers and cost per client/customer;
- Occupancy rates for accommodation sector.
- Job creation (actual, type, potential and transformation imperatives)
 - Duration of employment;
 - Permanent versus temporary/casual;
 - Disaggregation in relation to gender, historical racial category and location. (local, regional or national)

As a result of time and budgetary constraints, engagements with stakeholders were limited to a smaller size of representatives from CMT organisations and service providers. Furthermore, provincial consultation with tourism officials were undertaken to solicit comments on the survey instruments and recommendations for revision, identification of types of data and information and its availability, at provincial levels, identification of current research projects on coastal and marine tourism, enquiry on CMT stakeholder associations/ organisations to ensure that as many are approached for inputs and to participate in completing the survey, establish if contact details/lists are available in relation to groups/stakeholders that are targeted for survey-based data collection and ascertain how the information can be sourced, if they exist, and underscore the importance of consistency in the chosen methodologies across all provinces to ensure aggregation and comparative analyses.

6. Fieldwork Implementation and Reflections

Table 3 indicates the sampling distribution framework that was compiled in terms of targeted numbers and the final number of surveys completed per stakeholder group and per province. Specifically, 201 clients/tourists/users, 13 coastal and marine tourism business owners, 21 accommodation establishments, 12 tour operators and 26 restaurants and retail outlets (together with 97 short customer surveys to accompany these surveys to establish whether CMT was the main reason for visiting the location) were interviewed. Table 3 shows that with the exception of customer/tourist/user surveys, none of the other stakeholder targeted sample sizes were achieved. The challenges experienced are detailed later. It is also important to note in terms of data collection, surveys were not completed in the Northern Cape despite attempts to engage with provincial tourism officials to facilitate this.

Table 3. Sampling distribution framework and number of surveys completed

Surveys	KZN	WC	EC	NC	Total	Number completed
Customers/tourists/users	80	70	30	20	200	201
Accommodation establishments	20	15	10	5	50	21
CMT business owners	25	20	15	10	70	13
Retail outlets and establishments (+ 5 customer surveys per site)	20	15	10	5	50	26 (97 customer surveys completed)
Tour operators	10	10	5	5	30	13

Source: Author compilation

Key: KwaZulu-Natal (KZN), Western Cape (WC), Eastern Cape (EC) and Northern Cape (NC)

In terms of data collection, a combination of face-to-face, telephonic and email interviews were conducted with the supply side stakeholders while solely face-to-face interviews were undertaken for customers/tourists/users. A key challenge experienced relates to the low response rates for all stakeholder categories, with the exception of the customer/ tourist/user surveys. This was similar to the challenges experienced by the New Zealand Tourism Institute (2009) who during their study only received 36 business surveys. The main reasons for the low response rates in this study were:

- Unwillingness to participate (especially among the supply side stakeholders such as accommodation and CMT businesses). In many instances, stakeholders refused to participate when approached despite being reassured of confidentiality, the purpose of the research being explained and a letter from the university being provided. This may have been linked to time constraints (although attempts were made to set up appointments for interviews to be conducted at the convenience of the respondent) and being busy. Furthermore, in cases when persons agreed to be interviewed, they did not wish to continue when asked for economic data regarding income and expenditure. Even when interviews were completed, many of these questions were not answered because the respondent did not know the information needed (especially disaggregated for the last 12 months) or considered it confidential. While customers/users/tourists were generally willing to participate, there were instances when some respondents/interviewees did not want to complete the survey because they felt that it was a disturbance to their leisure time;
- Unable to get permission to undertake surveys. Many CMT businesses are located within malls or shopping areas such as the V & A Waterfront in Cape Town and the uShaka Marine Mall in Durban. The fieldworkers were prevented from undertaking research in these areas;
- Unable to locate/access stakeholders (such as CMT businesses and tour operators). In the absence of contact lists for the different types of businesses it was difficult to locate some of the businesses such as tour operators and CMT businesses (for example, whale watching, fishing, boat cruises and shark diving businesses). Attempts were made to interview these groups at the sites of operation. Consumers/ users/tourists were also interviewed while participating in activities that were more leisurely, for example, the isiMangaliso Estuary and Robben Island cruises.

In terms of issues relating to the data collection instruments specifically, the following general aspects were noted:

- Surveys too lengthy: the level of disaggregated information needed (per month for the last 12 months in terms of income and expenditure as well as consumption) resulted in surveys being too long which was the feedback received from respondents and fieldworkers. The consumers/users/tourists survey seemed to work well;
- Quality of data collected (especially self-completion surveys that were received via emails): as indicated earlier, respondents were often unlikely to recall or chose not to provide income and expenditure information (including information about service providers used by the business). It is important to note that in the few instances when completed email surveys were received, questions were incomplete or there was evidence of the respondent not fully understanding the questions. This again related to the income and expenditure questions as well as the number of persons employed in the business;
- In relation to the restaurants and retail outlets, owners of the outlets were apprehensive towards data collectors interviewing their customers as they felt that it would be an inconvenience or irritation for them.

In terms of specific questions in the survey, the following were noted:

- There was generally poor recollection of monthly information among all stakeholder groups;
- Difficulties were experienced in estimating proportions in relation to tour operators indicating proportion of clients interested in different tourism products, proportion of clients who were domestic and international visitors and proportion of clients attracted to location because of CMT products/activities. In the accommodation survey, the proportionate questions on occupancy rates was also deemed to be difficult to answer. Some respondents even indicated that they were guessing since there was no basis/ information to validate these proportional estimations;
- Generally there were poor responses of questions relating to service providers used, amounts paid and the profiles of these service providers;
- Confidentiality challenges were experienced in relation to information on number of employees and income and expenditure information. In many instances, respondents indicated that they were not sure whether they could provide this information although they were reassured that the information will be anonymous and generalised for purposes of data analysis. In relation to the accommodation and retail surveys, respondents (who were generally managers) did not have the authority or access to the information required. They indicated that the information needs to be sourced from other departments and it is unlikely that the types of information will be provided given that economic and employment information is regarded as sensitive and confidential.

It is also important to note that the piloting exercise revealed that CBA is unlikely to be implemented in South Africa as information is required on coastal and/ or marine projects, hypothetical or otherwise, whose viability should be examined. To carry out a CBA for any CMT project, all the applicable benefits and costs (just as the term CBA suggests) need to be identified. This information is currently not available.

From the desktop study undertaken as well as piloting experiences, three major lessons emerge that need to be considered to inform research that attempts to undertake an economic impact assessment of CMT in South Africa. Firstly, there is a need to focus on demand side data collection (customer/user/tourist surveys) given the challenges experienced in relation to collecting primary data from other stakeholders. Secondly, it is important to revise specific survey questions to shorten the surveys and rethink approaches to collect information to cover seasonality rather than asking questions for each month over the last year period. These questions should be revised to collect data on an annual basis. The actual fieldwork should be undertaken over a year to cover seasonality (peak and off off-peak periods). Finally, there is a need to rethink the sampling approach. In this regard it is imperative that access to national and provincial databases is facilitated for the supply side stakeholders (for example, accommodation establishments and tour operators) so that online and email surveys can be an option for survey completion. The piloting experience indicates that face-to-face interviews do not have a high response rate for these stakeholders.

7. Conclusion

This article underscores the importance of CMT in South Africa. However, the limited data available relating to the economic impact of CMT limits the understanding of the economic contribution of CMT and its potential influence on the tourism sector in South Africa. Specifically, in the context of Operation Phakisa, investments in CMT promotion and development will be more effective if

economic impacts are better understood. Thus, this research is contributing to developing a standardised framework to assess the economic impacts of CMT which can assist in measuring, monitoring and managing the economic impacts of CMT in South Africa.

This article provides an overview of the piloting processes undertaken to developing a framework to assess the economic impacts of CMT in South Africa, reflecting on challenges and opportunities. The methodological approach adopted was the implementation of stakeholder survey-based data collection tools. The key stakeholders identified were coastal and marine tourists/users/customers and CMT business (including the accommodation sector, CMT business owners, retail outlets and tour operators). The challenges in terms of data collection included ensuring a geographical and representative spread across all four coastal provinces, willingness to participate, quality of data collected (especially in relation to self-completion surveys) and the length of the surveys. Access to stakeholder contact details also emerged as a challenge. Finally, key recommendations in terms of developing the framework for implementation included the need to revise some of the questions and rethink the number and types of stakeholders from whom primary data needs to be sourced.

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9. References

- Abdullah, A.; Arof, Z.M. & Tajam, J. (2013). Marine cadastre issue and conceptual for implementation in Malaysia. *Journal Intelek*, Vol. 8, No. 1, pp. 24-30.
- Baggio, R. & Sainaghi, R. (2016). Mapping time series into networks as a tool to assess the complex dynamics of tourism systems. *Tourism Management*, Vol. 54, pp. 23-33.
- Biggs, D.; Hicks, C.C.; Cinner, J.E. & Hall, C.M. (2015). Marine tourism in the face of global change: The resilience of enterprises to crises in Thailand and Australia. *Ocean and Coastal Management*, Vol. 105, pp. 65-74.
- Borch, T.; Moilanen, M. & Olsen, F. (2011). *Marine fishing tourism in Norway: Structure and economic effects*. Retrieved from <http://okonomiskfiskeriforskning.no/wp-content/uploads/sites/4/2014/05/Borch-Moilanen-og-Olsen.pdf>.
- Centre for Industrial Studies (2008). The Impact of Tourism on Coastal Areas: Regional Development Aspects. Retrieved from http://www.europarl.europa.eu/meetdocs/2004_2009/documents/dv/pe_397260/_pe_397260_en.pdf.
- Cheung, W.W.L.; Sarmiento, J.L.; Dunne, J.; Frölicher, T.L.; Lam, V.W.Y.; Deng Palomares, M.L. & Pauly, D. (2012). Shrinking of fishes exacerbates impacts of global ocean changes on marine ecosystems. *Nature Climate Change*, Vol. 3, No. 3, pp. 254-258.
- Claveria, O. & Torra, S. (2014). Forecasting tourism demand to Catalonia: Neural networks vs. time series models. *Economic Modelling*, Vol. 36, pp. 220-228.
- DPME (2014). Operation Phakisa - Oceans Economy: Coastal and Marine Tourism. Retrieved from <http://www.operationphakisa.gov.za/Pages/Home.aspx>.
- DPME (2015). Maritime Cluster - Operation Phakisa Ocean Economy: Coastal and Marine Tourism. Retrieved from <http://maritimecluster.co.za/phocadownloadpap/Cruise%20Tourism%20Summit.pdf>.
- DEA (2016). President Jacob Zuma's address on progress made in respect of the implementation of the Operation Phakisa: Oceans Economy initiatives. Retrieved from https://www.environment.gov.za/speech/presidentjacobzuma_progressonoperationphakisa1.

- Department of Economic Development, Environmental Affairs and Tourism (2015). Eastern Cape Annual Tourism Barometer. Retrieved from <http://www.dedea.gov.za/Newsletters%20and%20Publications/ECT%20Stats%20Report%202015%20Final.pdf>. 6.
- Department of Environmental Affairs and Tourism in South Africa (2004). Environmental Economics. Retrieved from https://www.environment.gov.za/sites/default/files/docs/series16_environmental_economics.pdf.
- Dwyer, L. & Spurr, R. (nd). Tourism economic summary. Retrieved from <http://www.sustainabletourisonline.com/1001/tourism-economics/tourism-economics-summary>.
- Frechtling, D.C. (2013). The Economic Impact of Tourism: Overview and Examples of Macro-analysis. Retrieved from http://www.tourism-generis.com/_res/file/4184/49/0/UNWTO_TheEconomicImpactOfTourism_OverviewExamplesOfMacroeconomicAnalysis.pdf.
- Gallagher, A.J. & Hammerschlag, N. (2011). Global shark currency: the distribution, frequency, and economic value of shark ecotourism. *Current Issues in Tourism*, Vol. 14, No. 8, pp. 797-812.
- HM Treasury. (2014). Supporting public service transformation: Cost Benefit Analysis guidance for local partnerships. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/300214/cost_benefit_analysis_guidance_for_local_partnerships.pdf.
- Honey, M. & Krantz, D. (2007). *Global Trends in Coastal Tourism*. Centre on Ecotourism and Sustainable Development. Washington, Stanford University.
- Hoyt, E. (2001). Whale Watching 2001: Worldwide tourism numbers, expenditures, and expanding socio-economic benefits. International Fund for Animal Welfare, Yarmouth Port.
- ICMT. (nd). *What is Coastal and Marine Tourism?* Retrieved from <http://www.coastalmarinetourism.org/what-is-cmt.html>.
- Institute for Global Dialogue (2016). Toward a South and Southern African integrated oceans governance framework South Africa's leadership dilemmas in promoting a global south dialogue on governance in the Indian and South Atlantic oceans. Retrieved from <http://www.igd.org.za/downloads/IGD%20Reports/Proceedings%20Report%20-%20-%20-%20TOWARD%20A%20SOUTH%20AND%20SOUTHERN%20AFRICAN%20INTEGRATED%20OCEANS%20GOVERNANCE%20FRAMEWORK.pdf>.
- McNay, A. (2011). *Input-Output Models and Economic Impact Analysis: What can they and cannot tell us*. Retrieved from <https://www.doleta.gov/performance/results/AnnualReports/PY2012/Economic%20Impact%20Analysis.pdf>.
- Myeza, J.; Mason, R.B. & Peddemors, V.M. (2010). Socio-economic implications of the KwaZulu-Natal sardine run for local indigenous communities. *African Journal of Marine Science*, Vol. 32, No. 2, pp. 399-404.
- NDT (2016). Coastal and marine tourism: stakeholder engagement and sign off. *Unpublished document*.
- New Zealand Tourism Research Institute (2009). Marine tourism, fisheries and community: Creating barometers of economic change. Retrieved from www.nztri.org/node/285.
- NOEP (2005). Coastal economy data. Retrieved from <http://www.oceaneconomics.org/Market/coastal/coastalEcon.asp>.
- Oberholzer, S.; Saayman, M.; Saayman, A. & Slabbert, E. (2010). The socio-economic impact of Africa's oldest marine park. *Koedoe*, Vol. 52, No. 1, pp. 1-9.
- O'Connor, S.; Campbell, R.; Cortez, H. & Knowles, T. (2009). Whale watching worldwide: Tourism numbers, expenditures and expanding economic benefits, A special report from the International Fund for Animal Welfare. Retrieved from <http://www.ecolarge.com/wp-content/uploads/2010/06/WWWW09.pdf>.
- O'Malley, M.P.; Lee-Brooks, K. & Medd, H.B. (2013). The global economic impact of Manta Ray watching tourism. Retrieved from https://www.researchgate.net/publication/237061210_The_Global_Economic_Impact_of_Manta_Ray_Watching_Tourism.
- Onofri, L. & Nunes, P.A. (2013). Beach 'lovers' and 'greens': A worldwide empirical analysis of coastal tourism. *Ecological Economics*, Vol. 88, pp. 49-56.
- Orams, M.B. & Lück, M. (2014). Coastal and marine tourism. *The Wiley Blackwell Companion to Tourism*, pp. 479-489. Wiley: UK.

- Penn, J.; Hu, W.; Cox, L. & Kozloff, L. (2016). Values for recreational beach quality in Oahu, Hawaii. *Marine Resource Economics*, Vol. 31, No. 1, pp. 47-62.
- Rodrigues, J.; Marques, A.; Wood, R. & Tukker, A. (2016). A network approach for assembling and linking input-output models. *Economic Systems Research*, Vol. 28, No. 4, pp. 518-538.
- Saayman, M.; Saayman, A. & Ferreira, M. (2009). The socio-economic impact of the Karoo National Park. *Koedoe*, Vol. 51, No. 1, pp. 1-10.
- Seymour, K. (2012). The perceived value of scuba diving tourists at a marine destination. *Unpublished magister atrium thesis*. Potchefstroom: North-West University.
- Shelembe, S. (2015). *SA's ocean to boost economy*. Retrieved from <https://www.vukuzenzele.gov.za/sa%E2%80%99s-ocean-boost-economy>.
- Statistics SA. (2011). Tourism, 2011. Retrieved from <http://www.statssa.gov.za/publications/Report-03-51-02/Report-03-51-022011.pdf>.
- Statistics SA. (2015). Tourism and migration. Retrieved from <http://www.statssa.gov.za/publications/P0351/P0351March2015.pdf>.
- Surugiu, C. (2009). *The economic impact of tourism: An Input-output analysis*. Retrieved from <http://www.revecon.ro/articles/2009-2/2009-2-8.pdf>.
- UN. (2014). The oceans economy: Opportunities and challenges for small developing island developing states. Retrieved from http://unctad.org/en/PublicationsLibrary/ditcted2014d5_en.pdf.
- UNEP. (2009). Sustainable coastal tourism: An integrated planning and management approach. Retrieved from http://www.unep.org/pdf/DTIE_PDFS/DTIx1091xPA-SustainableCoastalTourism-Planning.pdf.
- UNWTO. (2014). Glossary of tourism terms. Retrieved from <http://cf.cdn.unwto.org/sites/all/files/Glossary+of+terms.pdf>.
- Van Wyk, J.A. (2015). Defining the blue economy as a South African strategic priority: Toward a sustainable 10th province? *Journal of the Indian Ocean Region*, Vol. 11, No. 2, pp. 153-169.
- Vianna, G.M.S.; Meekan, M.G.; Pannell, D.J.; Marsh, S.P. & Meeuwig, J.J. (2012). Socio-economic value and community benefits from shark-diving tourism in Palau: A sustainable use of reef shark populations. *Biological Conservation*, Vol. 145, No. 1, pp. 267-277.