



8.1 PORTS AND SHIPPING

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INTRODUCTION



Maritime trade has been a feature of human development for eons, not least in South Africa, with its trade route around the Cape.



Globalisation has served to accentuate the dependence on shipping as a key element of economic and industrial



development (UN 2019), with developing countries accounting for the largest share of global seaborne trade. They account for 58% loaded and 65% unloaded goods of the world total (UNCTAD 2020).



For Africa, maritime transport remains the main gateway to the global marketplace (UNCTAD 2020), with South Africa, particularly KZN,



playing an important role. KwaZulu-Natal has two of South Africa's three major commercial ports; Durban and Richards Bay. The former is Africa's busiest port,



primarily serving as a regional container hub, while the latter is specially designated for bulk cargo, including coal, timber and non-ferrous metals. The combined performance of the two ports is of national importance, accounting for 63% of cargo, 62% of containers and 51% of ships (Jones 2014).



Ports represent an asset to economic development and attract many industries, generally through the establishment of Industrial Development Zones (IDZs) and they serve to increase employment and economic activity.

However, ports are often centres for environmental disturbance, firstly, through the establishment of industries, but over the long-term industries may dispose of waste via stormwater systems. This requires dedicated management. In addition, the management of port infrastructure often calls for dredging and removal of fragile ecosystems such as mangroves and seagrass beds to make space for shipping activities. Shipping itself creates potential environmental problems by their frequent lack of proper on-board waste and sewage management facilities.

DRIVERS

Maritime transport is considered one of the priority economic sectors towards unlocking the country's economy, through a focus on the 'Blue Economy'. Maritime activities will stimulate trade, increasing its contribution to the Gross Domestic Product (GDP), whilst at the same time creating employment opportunities for South Africans (DoT 2017). Since 1994, there have been various national growth and development strategies. The most recent of these is called Operation Phakisa which focuses on unlocking the ocean economic potential of South Africa (Section 2.1).

PRESSURES

South Africa is set to grow its economy, with the 'Blue Economy' (under Operation Phakisa) being identified as one avenue to facilitate this. This growth will see an increase in trade and a likely need to expand port operations which, in addition to daily port activities, is likely to result in significant pressures for the receiving environment. Thus, a GDP growth strategy is likely to add increasing pressure on the environment, unless this can be ameliorated through good management and planning towards a steady state.

STATE

The origin of ports is variable. Given that some are created out of bays, estuaries, lagoons or river mouths, it follows that the smaller systems are likely to be more vulnerable to environmental perturbations. The two KZN ports were both created out of originally quite shallow estuaries: Durban Bay and the uMhlathuze Estuary.

The Port of Durban has been progressively developed over 200 years, during which time different phases removed important sections of the estuarine biota. Historical development of the port was limited because of the semi-permanent siltation of the port entrance, due to littoral drift of beach sand up the coast. The Port of Durban is now the largest container port in Sub-Saharan Africa and the leading port for the

SADC region, serving KZN and the Gauteng region as well as the Southern African hinterland (Humphreys *et al.* 2019). Its geographic location further enhances its appeal for relay transportation and hub-and-spoke networks, providing a strategic position for the transportation of goods from North and South America to Africa (Humphreys *et al.* 2019).

The Port of Richards Bay was opened on 1 April 1976. The Richards Bay site was considered favorable for several reasons, including the ease of dredging, the availability of land for back-of-port developments and port-related industries, and the proximity of the site to the Mpumalanga coalfields and the industrial and market-heartland of Gauteng (Jones 2014). It is essentially a dry bulk and neo-bulk port, albeit with a wide cargo base. Cargo shipped exceeds cargo landed by 18:1, with the key imports being metallurgical or coking coal and alumina. Exports are dominated by coal, followed by a broad range of products including ferro-alloys and chrome ore; woodchips; titanium slag and mineral sand products from the Richards Bay Minerals' dune mining operations; pig iron, steel



The Port of Richards Bay on KZN's north coast
Photo: ORI

and base metals; and liquid-bulk acids and chemicals (Jones 2014). Potential future expansion of the Port of Richards Bay is unlikely to affect the KZN coastline directly, aside from the potential deepening of port approaches and access channels (Jones 2014).

The ocean economy is considered a priority area for South Africa, with maritime transport being a key sector in fostering trade and thus heightening its contribution to the Gross Domestic Product (GDP) through employment opportunities. It also offers a means to achieve the objectives outlined in the 2030 National Development Plan and the New Growth Path (NGP) (DoT 2017). While maritime transport is relatively flourishing, the same cannot be said for ancillary activities such as ship repair, ship building and dry docking - all activities that have declined following the COVID-19 pandemic.

The two ports on the KZN coast offer complementary services, with Durban strengthening its role as a general cargo (mainly containerised), liquid bulk and automotive port; while Richards Bay will continue to serve the needs of the bulk trades, through increased coal volumes. Together, the two ports are also almost certain to continue to dominate South African seaborne commerce into the future (Jones 2014).

IMPACT

Shipping activities bring a range of environmental impacts, such as air, water and noise pollution. Ships, cargo handling equipment and transport trucks concentrating in port areas often result in poor air quality and polluted waters (Braathen 2011). The greatest concern remains the pollution caused by non-native species following the discharge of untreated ballast water from ships. Ships use ballast water for draught control and gravity: these tanks are

filled and emptied with sea water. Thus ballast water accrued in one region may be released elsewhere and introduce alien species into a new environment (Braathen 2011). These introduced species may not naturally occur in the 'new' environment, resulting in significant environmental harm which threatens biodiversity (UN 2019). In 2017, the International Convention for the Control and Management of Ships' Ballast Water and Sediments (ICCMSBW) entered into force. The Convention aims to prevent the introduction and proliferation of non-native species because of the discharge of untreated ballast water from ships. One way to reduce this risk is to install ballast water treatment systems (UN 2019). South Africa drafted a Ballast Water Management Bill (2013) which provides for the prevention of the introduction of invasive species via ships ballast water and sediment, while ensuring the implementation of the ICCMSBW and matters related thereto.

RESPONSE



Issues related to pollution are ongoing but being addressed through the ICCMSBW and the Ballast Water Management Bill (2013). Additionally, the National Transport Master Plan 2050 provides guidance for some of the challenges facing maritime transport infrastructure. The proposed critical interventions identified for maritime transport infrastructure should receive high priority if 2030 targets are to be met (DoT 2017).

While KZN port development may appear to have reached a maximum capacity, several innovative concepts are being explored. For example, the establishment of industrial development zones (IDZ) adjacent to ports created an opportunity for enterprise dependent on sea imports or

exports. Such proposed zones need to be strategically located to derive maximum economic benefits while minimising environmental impact (DoT 2011).

The Port of Durban is a mature port with increasingly congested operations. However, innovation, reconfiguration and rationalisation of the current operations can lead to extensive improvement and greater capacity, while also improving sustainability (Humphreys et al. 2019).

Data requirements

Information pertaining to port operations is largely obtained from the Department of Transport, and is valuable in understanding changes in operations, which can result in increased environmental pressures. Ports are important for the economy of South Africa and KZN; and the ocean economy is a priority going forward (under Operation Phakisa).

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