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Department:
Transport
REPUBLIC OF SOUTH AFRICA

SAMSA
SOUTH AFRICAN

South African Maritime Safety Authority (SAMSA)

Maritime Sector Skills Development Study

Transforming the National and Regional Maritime Landscape

21 September 2011

"Located as we are on the coast we cannot ignore the maritime economy of our country. We therefore require a battery of specialized maritime and harbor engineering skills which are not only in short supply in South Africa but in the world. We also know that the International Maritime Organisation has declared 2010 the Year of the Seafarer. The IMO has also indicated that there are some 200 000 jobs available internationally for people coming out of our institutions. This means we can act locally but make a global impact in this sector."

Address by Minister of Transport

Mr Sibusiso Ndebele, MP

On occasion of his installation as

Chancellor of the University of Zululand

30 April 2010

Appreciation

To the various stakeholders in the sector who contributed to this report, we would like to extend our sincere gratitude for the inputs provided over the duration of the project.

This report was compiled by Deloitte Consulting, Skills Development Solutions.

The project team included the following key team members:

- Trish Heimann (Lead Researcher and report-writer);
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- Johannie Bayman (Skills Development Expert); and
- Terence Beney (Research Expert).

Executive Summary

Introduction

The South African Maritime Safety Authority (SAMSA), an Agency of Government, is pursuing a growth strategy that prioritises the development and retention of quality critical and scarce skills within the maritime sector. SAMSA, the South African Navy and the maritime industry including the private sector, are most important partners for skills development in the maritime sector.

The maritime sector includes all enterprises engaged in the business of designing, constructing, manufacturing, acquiring, operating, supplying, repairing and/or maintaining vessels, or component parts thereof; the management and/or operating of shipping lines; stevedoring, arrastre and customs brokerage services; the management and operation of shipyards, dry docks, harbours, marinas, slipways and marine repair shops; shipping and freight forwarding services and similar enterprises. In addition to shipping transport and ports services, maritime related enterprises and activities are also concerned with resource exploitation at sea, the leisure and tourism industries, professional business services and the public service.

The bringing together of Higher Education Institutions (HET), Further Education and Training (FET) Colleges and the Sector Education and Training Authorities (SETAs) into a single Ministry of Higher Education and Training provides a powerful basis for addressing skills development in an integrated way. The Ministry has the responsibility to develop the country's education and training institutional capacity and resources into a coherent but diverse and differentiated post school learning system, serving adults and youth within the framework of the HRD-SA. This skills study was conducted at the same point in time as the legislative landscape in the skills development arena was changing and to some extent is intended to inform the effective coalescing of the new policy and institutional environment.

Deloitte was appointed by the South African Maritime Safety Authority (SAMSA) to conduct the Maritime Industry Skills Study, which would contribute to SAMSA's informed efforts to strategically position the maritime industry as a key economic sector.

In terms of the South African context within which the maritime sector finds itself, a number of social conditions endorse the pertinence of commissioning a maritime skills study at this time. South Africa finds itself within the following skills development space currently:

- The recommitment of government to its developmental mandate of prioritising social development in economic growth;
- The policy review process that culminated in the launch of the most thorough and binding version of the National Skills Development Strategy in 2010;
- The institutional reform process of the skills system initiated under the new Department of Higher Education and Training (DHET);
- The increasing focus on maritime in South Africa as a sector with significant growth potential; and

- A global maritime sector skills crisis with maritime nations of the authoritative BIMCO/ISF Manpower Study (1990; with updates in 1995, 2000 and 2005), which was published at the end of 2010.

Purpose of the study

The terms of reference underpinning this study, highlight five broad study objectives, namely:

- Study objective 1: Conduct a review of the maritime sector in South Africa;
- Study objective 2: Explore trends in the supply and demand of maritime skills globally and consider opportunities for South Africa in light of global trends;
- Study objective 3: Explore policies, funding mechanisms and partnerships that relate to skills development in the South African maritime sector;
- Study objective 4: Determine the number and types of skills available in South Africa and supply and demand dynamics surrounding South African maritime skills; and
- Study objective 5: Determine skills offering and skills development gaps in South Africa.

To meet the objectives of the study, three methodological approaches were used to inform the study objectives and triangulate data findings. These approaches include extensive desktop review and analysis of literature available locally and globally; the analysis of secondary data available through complementary research efforts and outputs; and the analysis of primary data generated through surveys and in-depth interviews with key stakeholders and organisations across the sector.

Limitations to the study

The collation of findings on demand side data across industries has been provided to the extent that the data is available. Enormous effort went into determining skills supply and demand data and study findings indicate that industries generally do not have up-to-date numbers on skills supply and demand, with no consolidated database existing across industries in the maritime sector. Where data is available, it is fragmented and found either within various SETA's, with SAMSA or private organisations leading industries.

Available data has been collated during this study and is presented in this report. Skills supply and demand side dynamics are qualitative in nature where quantitative data is not available.

Findings

A review of the maritime sector

There have been no prior in-depth sector skills studies conducted in the maritime sector in South Africa that have attempted to operationally define the maritime sector value chain. With the intent of aligning this sector skills study with the national skills development agenda, as well exploring economic growth and job creation opportunities more widely along the maritime value chain, a South African maritime sector model was developed that incorporates all identifiable segments of South Africa's maritime sector.

Based on the data emerging from this research study, the maritime sector has been divided into seven clusters, representing sub-sectors of the maritime sector. The maritime sector model distinguishes between three primary and four secondary industry clusters. The three primary industry clusters include all those maritime industries that represent the economic foundation of the sector: (1) shipping and transport, which is broken down into maritime logistics infrastructure, shipping transport and ports, marine services and coastal administration; (2) marine resources, which is broken down into fisheries, pharmaceuticals and aquaculture; as well as off-shore energy and mining; and (3) marine tourism, which is broken down into boating and cruising, sports and recreation and leisure.

From the local literature review it was found that of all the industries within the Maritime Sector in South Africa, Commercial Fishing has substantially more detailed economic and sectoral study findings available than could be found for the other industries.

The four secondary industry clusters include (1) operational support services, which is broken down into shipping logistics and marine technologies; (2) manufacturing and construction which is broken down into marine and civil engineering; (3) business services, which look at maritime specialised professionals within the banking and consulting domain; and (4) the public interest cluster, which considers public maritime functions and services (maritime regulatory and naval defence).

A comprehensive skills development strategy for the maritime sector would need to incorporate skills development requirements in all seven clusters. The three primary industries are each equally important for growth of South Africa's maritime sector. This study has revealed the need for additional research focused on each of the primary industries to better understand the skills supply and demand dynamics and accurately determine the number of skills required so as to better inform the maritime skills development strategy. A key finding is that all primary industry clusters (shipping; resources and leisure) serve global industries and there is a need for the skills development model to align local training and certification requirements with international standards. For each industry the key challenge is the gap in middle-management and supervisory skills and each industry has emphasised the gap between schooling / formal training structures and what is being demanded in the workplace. In terms of collating accurate statistics, data within each industry and across all industries is scattered, with no central database with a set of standard reporting requirements. SETA information can currently not be verified. The difficulty in obtaining accurate numbers for skills within the maritime sector is indicative of the need to do proper data collection and centralise data with defined standards.

Trends in the supply and demand of maritime skills globally and their implications for South Africa

Global desktop research covered both seafaring and non-seafaring skills. However, limitations exist in the data available globally for non-seafaring skills.

Shipping is a key industry within the maritime sector and it is this industry that underpins the international economy. Despite its pivotal contribution, of all the sectors that make up the global transport infrastructure, shipping has arguably the lowest public profile and the least representative public image (IMO, 2006).

A number of trends and key issues can be identified globally across international maritime skills studies. These include (i) the global shortfall of seafarers; exacerbated by (ii) the increasing aggregate age of maritime professionals; and (iii) the difficulties in retaining skills within the maritime sector; as well as (iv) the a decreasing numbers of recruits to the sector; (v) limited management skills; (vi) the poor quality of shipping services delivered by personnel with no seafaring experience; and (vii) the impact of technological innovation.

Solutions implemented by maritime nations in response to global trends and challenges include: (i) launching maritime awareness campaigns; (ii) creating and nurturing international partnerships between maritime training institutions and industries; (iii) devising various employee retention strategies; (iv) centralising the management of national and regional maritime sector skills information; (v) offering tax benefits and financial incentives to not only grow the national maritime sector, but to increase the direct participation of the industry in skills development efforts.

South Africa is positioned to exploit emerging shifts in the patterns of global shipping. The nation's ports benefit from a prime location on the growing south-south trade route. In addition the increasing shipping traffic may be augmented by rerouting from other shipping lanes, as capacity constraints at the Suez Canal and piracy risk in the Gulf of Aden persist.

Changes in shipping traffic and the global maritime skills deficit both present opportunities for South Africa, such as: (i) growing shipping related services by improving ports productivity, cargo-handling operations, and professional support services; (ii) prioritising and incentivising additional maritime sector growth, through strategies such as cabotage; (iii) becoming a seafarer supply nation, with a specific focus on officers, by incrementally increasing the capacity and output of the skills development system; (iv) becoming a regional supplier of seafarer training; (v) creating a competitive advantage by centralising and significantly improving the management of national and regional maritime sector skills information. The possibilities for exploiting the global maritime skills deficit are enhanced by the fact that South Africa is an English-speaking nation and our officer training is widely regarded as being of high quality.

Determining the number and types of skills available in South Africa and supply and demand dynamics surrounding the South African maritime sector

This report provides a detailed matrix of maritime education and training institutions in the country. The matrix offers a good baseline document for developing a more comprehensive South African Maritime Education and Training (MET) Provider database.

This report further provides an indication of the types of skills and occupations as well as estimate numbers within each industry of the maritime sector.

It is noted that the database will need to be continually upgraded as the sector grows and other similar databases should be identified, sourced and used to improve the database.

The supply and demand skills survey conducted during this study identified the following:

- There are a total of 314 qualifications registered with various quality assurance bodies in South Africa, offered across various types of training institutions. Based on the inclusion of non-seafarer occupations as a focus of this skills study, these become applicable to the maritime sector. The distribution of the maritime applicable qualifications by level of relevance includes 200 maritime relevant qualifications, 71 maritime related qualifications and 43 maritime specific qualifications.
- Findings relating to skills across maritime industries in South Africa suggest that in terms of technical skills there is an explicit ability deficit that needs to be addressed. It is not only the absence of training options but the quality of training that leads to capacity deficits. The mismatch between the available pool of employees and the market demand for specific qualifications and expertise – the foundation of South Africa's skills crisis - has been attributed to a number of causes, one of the most prominent being the state of the education system. The lack of correlation between training institution curricula and employability has been attributed in part to the lack or incompleteness of information on the demand and supply dynamics of the labour market[1], as well as poor collaboration between the private enterprise and the education sector in determining optimal content for curricula.
- Supply and demand was determined for seafaring based on statistics available at SAMSA. There are 5,490 qualified officers registered with SAMSA in South Africa. The industries report a total shortage of 1,008 officers. The Transport, Storage & Communications Industries' large sample survey reported that the total employment in the Sea and Coastal Water Transport segment of the Transport industry amounted to 3,043 jobs including contract workers (StatsSA, 2006). The significant difference between the official statistics on employment in the cluster and the SAMSA numbers on officers and ratings highlights the urgency to revise the manner in which national measures are applied to the maritime sector.

  Across the 14 institutions offering seafaring courses accredited by SAMSA that lead to certification, an average (calculated over a 4 year period) of 244 new officers graduate from the theoretical training they receive from accelerated cadet programmes or S1/S2 training annually. In addition, an average (calculated over a 4 year period) of 104 existing officers complete their theoretical component for their senior officer certification annually. However, interview respondents report that of the approximately 120 cadets completing S1 and S2 at our public training institutions on average each year, typically one quarter to a third would find a berth for the following year. Under these conditions South Africa could only produce 35 to 40 junior officers per annum. Considering the officer shortage being reported by industry this number is woefully inadequate.

[1] NHRDS, 2008

- It is estimated that the total employment within the South African Maritime Sector is 116,364. Chapter 8 provides a breakdown across industries.
- Supply and demand was investigated in the offshore oil and gas industry. However, accurate numbers for supply of skills in the offshore oil and gas industry is not available. The offshore oil and gas industry do not have up-to-date numbers on skills supply or demand since systematic studies have not been done. For this reason, inputs from the industry are predominantly qualitative in nature.

  The critical need in the offshore oil and gas industry is for upskilling current skills in the industry to provide higher quality services. A critical area of shortage is people at supervisor level.
- Supply and demand was investigated in the South African boatbuilding industry where 4500 people are employed. Accredited short courses for boat building specific skills, for example, laminating, welding, marine electrical etc are not currently catered for and this is needed to up-skill the existing workforce. Recognition of prior learning is also a priority. In-house training continues to be the back-bone of skills training in the boat building workplace. This is due to the pressures of production, the lack of technical short courses and the red tape involved in accessing SDL funds for training. There is a need for supervisory and management skills to create better articulation between the large number of entry level employees and middle/upper management. There is a gap between schooling/formal training structures and what is being demanded in the workplace. There is a significant need for artisans and technical experts to meet the rigorous demands of new products and innovation and technological developments. In addition the skills needed for high level composite technical work are lacking. As far as manpower is required to build a ship, the majority of skills required are artisans, primarily in the boilermaking, pipe fitting, fitting and welding trades. There is a specific need for theoretical knowledge applicable to marine vessels and marine engineering so that persons can become familiar with the type of work necessary to build and repair a ship[2].

  Similar to offshore oil and gas, the boatbuilding industry could not provide numbers on skills demand.

Legal and policy frameworks governing the maritime sector and impediments thereof

The International Maritime Organisation (IMO) and the Internal Labour Organisation (ILO) are the key institutions determining the **global policy and regulatory environment** governing the international maritime sector. The manner in which the safety, environmental and labour rights agreements are locally enforced has a significant influence on South Africa's status and prospects as a maritime nation.

[2] Irene Batis, HR Manager, Southern African Shipyards (Pty) Ltd. Email correspondence sent to SAMSA 1 April 2011

There are **three regional policy and institutional arrangements** that apply to the maritime industry, namely, (i) the SADC Protocol on Transport, Communications and Meteorology; (ii) the African Maritime Transport Charter; and (iii) NEPAD. Inclusion of the African Maritime Transport Charter in the South African Maritime regulatory framework will speed up its enforcement, resulting in the implementation of development initiatives the Charter provides for, and the realisation of associated benefits such as job opportunities for women and youth, including unemployed matriculants, graduates and rural youth.

Locally, South Africa has a number of policy frameworks and programmes in support of skills development, most prominently (i) the New Growth Path, which is gaining traction; it takes the (ii) the NIPF and IPAP into account; and will influence the content of (iii) future iterations of government's Programme of Action. In addition the (iv) National Skills Development Strategy mobilises Departments and Agencies in a common endeavour to ensure that skills supply will meet the demands that national growth policies imply. These policy frameworks and programmes provide the facilitating environment for maritime sector growth and the necessary skills development such growth implies.

The most adverse impediments in the policy and legislative environments hampering growth of the maritime sector in South Africa include the following:

- The lack of consensus among key policy level institutions, most particularly DOT and TETA, on what constitutes the South African maritime sector.
- DOTs emphasis on road and rail transport, coupled with resource constraints and limited maritime specific skills in the Department, has severely constrained the development and implementation of government led maritime sector growth and legislative reform programmes and initiatives.
- The lack of a specific maritime sector policy hampers planning, including skills development planning.
- A lack of co-ordinated accreditation and quality assurance for maritime skills training.
- Delays in the adoption of the Integrated Transport Sector BBBEE Charter have also delayed the implementation of associated skills development provisions.
- The South African tax regime does not as yet offer shipping a favourable operating environment and is widely regarded as the major impediment to reviving the South African Ships Register.
- Unresolved conflicts between local and international labour legislation including:
- The fact that the Employment Equity Act contradicts international conditions of employment.
- The fact that the Merchant Shipping Act overrides the Basic Conditions of Employment Act and this factor inhibits the opportunity for learnerships to students who cannot then obtain a berth, which is a pre-requisite to become a qualified seafarer.

Funding mechanisms and collaborative partnerships

Various funding opportunities for skills development are highlighted in this study. SAMSA's strategy is aligned with the special emphasis that the DHET has placed on strengthening the skills and human resource base in South Africa. Consequently, SAMSA should be in a position to access the formal funding arrangements that the national skills development system provides.

The NSF needs to make a substantial contribution to enable growth and job creation. However, there is a need to market the maritime industry and create awareness of the critical skills needs to be funded before the NSF considers contributing through funding. In the same light, all Agencies that provide funding need to be aware of the skills needs that exist in the maritime sector. SAMSA may want to identify those funding agencies that are likely to support maritime sector skills development interests and target them with a focussed marketing and fund raising strategy.

This approach to raising funds for skills development can be adopted at provincial and local levels. Localised PPPs should be equipped and encouraged to leverage the maximum possible funding from various funding agencies for the local development of maritime sector skills. SAMSA might be the institution to assume the facilitating role, together with local development funding institutions.

The establishment of skills development partnerships between training institutions and industry, independent of the skills development system, is already bearing fruit. A prominent example is the collaboration between SAMTRA and a number of shipping companies to increase the availability of training berths for candidate officers. The success of this initiative is dependent on subsidising the costs incurred by the private sector (in this instance facilitated by SAMSA) and is the key to the replication of such models of public-private collaboration in skills development in other sub-sectors of maritime industry.

The current institutional arrangements within the skills development system are detrimental to effective skills development within the South African maritime sector. Initially this might be mitigated by a number of partnerships at institutional level. Partnerships focussing on maritime sector skills development should be formalised between the Department of Transport, SAMSA, the DHET, TETA and MERSETA (who are critical for boat building and ship building). This can only be a first step however.

The footprint of the maritime sector is such that a wide diversity of scarce and critical skills are required, while the nature of the SETA system is such that the responsibility for maritime skills development is incidentally fragmented across numerous SETAs, including but not limited to TETA, The Foodbev SETA, AgriSETA, Services SETA, MERSETA and the MQA. Although a partnership between relevant SETAs will go some way to addressing the enormous challenges confronting the disjuncture between the SETA system and the maritime sector's skills development needs, it is unlikely that the current skills development system will be able to service the sector without significant reform, including the introduction of a maritime specific skills development authority.

A strong emphasis should be placed on developing regional partnerships that include African maritime authorities, training institutions and governments. Not only would this align with and facilitate the exploitation of potential benefits to South Africa identified by this study, but also offer benefits to other nations across the region by focussing efforts on developing the regional market for maritime services.

Potential international partners should be engaged and relationships nurtured continually, not only when funding is provided. Strategic partnerships should be developed so that South Africa's maritime sector stakeholders and local partners can understand international requirements and identify international opportunities. International partners should include the IMO, ILO, the EU and international maritime authorities.

Determining skills offering and skills development gaps in South Africa

Since this study will ultimately lead to re-positioning the maritime industry, findings are presented by means of a SWOT analysis that places the themes and information shared by stakeholders into strengths, weaknesses, opportunities and threats for the industry currently. The SWOT analysis can be summarised as follows:

- Strengths include the high quality of theoretical training provided for seafarers; services provided in the off-shore oil, gas and mining industry; the advantage of South Africa being an English-speaking and multi-cultural nation; and favourable exchange rates making South Africans competitive for global placement in the maritime sector.
- Opportunities include inter alia the global demand for seafarers; the challenges in transit costs in the Suez Canal and piracy – which are influencing ships to pass the Cape of Good Hope; the opportunity for South Africa to grow our coastal shipping industry and improve ports services.
- Weaknesses identified that create a current threat to the maritime industry include unfavourable legislation; South Africa's limited ability to provide training berths for learners aboard ships; limited research and benchmarking informing the future direction of the sector; a lack of consolidated national maritime database; and numerous challenges pertaining to training. These include limited type of training offered; lack of training facilities; lack of high calibre teachers with no incentives to attract them; lack of on-the-job training and management skills.
- Two types of threats have been identified, namely, (i) those that hamper South Africa to become a global maritime nation and (ii) those that hamper the growth of the maritime sector within South Africa. Threats that hamper South Africa to become a global maritime nation include the perception and experience of poor quality of maritime services in South Africa; South Africa not being cost competitive in the shipping industry; and insufficient shore-side infrastructure. Threats that hamper the growth of the maritime sector within South Africa include the cost of training with lack of subsidies; limited investment by government in the industry; the aging workforce and limited skills transfer; hampering institutional arrangements due to the industry being fragmented; low maritime awareness; limited partnerships and career pathing being unclear.

Conclusion and recommendations

This research study has identified what is required to build the maritime economy of the country with regards to its skills pool. The findings from this study identified various challenges within the maritime sector. Of significant value to this study is the Maritime Sector Skills Development Model, which provides an indication of the maritime footprint within South Africa. Exploratory research has provided an understanding of the maritime sector footprint, which did not exist before this study. Numbers presented for maritime industries are indicative as they provide an initial first impression of each industry.

Attributes to ensure effective re-positioning of the maritime sector as a leading maritime nation include the following:

- Collaborative efforts between stakeholders across the industry;
- Strategic partnerships;
- Ensuring buy-in and action from relevant drivers within the industry;
- Understanding successes and shortfalls and strengthening feedback loops;
- Information that is up-to-date, relevant and accessible to the industry;
- Good communication to raise awareness and market service offerings, as well as effective service offerings.
- A comprehensive talent development and funding model and implementation plan;

Recommendations

Implementation of a Maritime Skills Development Strategy should be guided by a long range Maritime Skills Development Plan based on sound analytics of data collected via continued research, monitoring and evaluation (M&E) and quality management processes, resulting in a sustainable Maritime Talent Development Model. The development of a competent skills pool, job creation and employment, should be the focus. As a next step, it is imperative that SAMSA focus on collating a database of every company within the maritime sector in South Africa. Once a directory exists of the entire population of organisations within the maritime sector (something that does not exist but is required to determine accurate numbers for the sector), a survey could be sent out annually to gain an accurate sense of actual real-time skills shortages for each industry within the maritime sector. Only once the entire population of organisations are identified within the maritime sector, can a representative sample of companies be selected for an annual survey. An annual maritime sector survey that is based on a representative sampling frame could determine current skills shortages, would provide an accurate reflection of the skills gaps within the maritime sector; current and projected revenue for the sector; and accurate and reliable growth strategies that a Maritime Sector Skills Development Strategy could prioritise to grow South Africa into a leading maritime nation globally

A Maritime Sector Skills Plan that links to the Talent Development Model should inform a Maritime Skills Development Strategy. It will be critical to determine whether scarce and critical skills should be bought, developed or redeployed to meet the vision of growing the maritime sector to become a key contributor to the South African economy.

The Maritime Skills Development Strategy should be steered by SAMSA in collaboration with strategic public private partnerships including stakeholders from government (including other Department of Transport agencies), industry, Sector Education and Training Authorities (SETAs), education and training providers as well as regional and global stakeholders. Seven pillars of the Strategy should include (1) a Maritime Talent Development Model, (2) a Maritime Competency Framework, (3) an informed Sector Skills Plan, (4) a sustainable Funding Model, (5) strategic Public Private Partnerships that include all maritime clusters, (6) Public and Private Training Provision (7) a Sustainable Talent Pool and (8) absorption of skills.

Recommended priority focus areas to inform South Africa's maritime skills development strategy should include the following:

- Creating and nurturing local and international partnerships.
- Conducting maritime awareness campaigns.
- Developing maritime retention strategies.
- Ensuring maritime qualifications meet international convention standards.
- Benchmarking against leading global maritime nations.
- Increase recruitment and training.
- Develop a national maritime database.
- Introduce government training subsidies.
- Introduce a Maritime Levy Fund to assist in developing skills for the industry.
- Introduce tax benefits.
- A dedicated Maritime Ministry would be beneficial to the industry.
- Introduce tonnage tax.
- Revise policy with regards to HIV/Aids.

This skills study has lead to the planting of a seed that needs to be watered. It is recommended that the momentum be maintained by building on the primary findings presented from this study, putting in place dedicated resources to drive the improvement of SAMSA's authority, roles and responsibilities in the aim of closing the gaps identified through this study.

It is recommended that Government invest in the following key focal priorities:

- A **skills development strategy** is required for the maritime sector. Government is urged to investigate the most appropriate model for skills development in the sector. It will be beneficial to develop a skills development strategic plan utilising the broadened footprint of the maritime sector value chain presented as a result of this study.

Implementation of a Maritime Skills Development Strategy should be guided by a long range Maritime Skills Development Plan based on sound analysis of data collected via continued research, M&E and quality management processes, resulting in a sustainable Maritime Talent Development Model. The main benefit of Maritime Talent Development Model developed via a collaborative approach involving all stakeholders, is that short and long term skills planning can be done using a predictive model to evaluate skills demand versus skills supply.

- It is furthermore recommended that SAMSA follow a collaborative process involving all relevant and key stakeholders including SETAs residing over Maritime clusters in order to **establish a comprehensive Maritime Competency Framework**. Such a framework should be benchmarked globally and form the basis for the development of the South African Maritime OFO and relevant qualifications. A thorough well planned process will result in a standardised framework for all future skills development planning for the maritime sector.
- Vital to the success of the process should be a rigorous and targeted communication strategy inclusive of a **Maritime Marketing Campaign**. It is necessary to engage with stakeholders in each maritime industry in-depth to determine how to promote maritime services which our country can offer internationally.
- To promote maritime skills locally, a **Maritime Career Awareness Campaign** is required.
- The maritime sector is an international environment. For South Africa's maritime sector to grow, the South African maritime sector must **create a social / educational environment that is aligned to the international convention standards** and a legal environment that is attractive to international maritime nations. The current challenge for maritime industries does not seem to be the need for additional numbers of skilled people rather than the need for skilled people capable of providing a quality service. Improving the quality of basic and tertiary education will be critical to minimise the gap that exists between the trained population and the requirement in the workplace. A focus on producing quality will impact on growth of the maritime sector by attracting business to the sector and thereby creating more job opportunities. It is necessary for Government to embark on data collection and engagement with stakeholders specialising within each industry to understand the skills needs of each industry within the maritime sector. Identifying best practice for each maritime industry in terms of training the requisite quality for the local and global industry and ensuring that local training requirements are aligned to global standards, is critical to grow South Africa as a maritime nation.
- Invest in the development of **a central database** (linkages platform) that defines data collection requirements. The benefit of a central database is the ability to accurately describe skills supply and demand, the opportunity to utilise skills/resources across different industries within and outside the maritime sector and the accessibility to skills and resources for training and employment on an as-needed basis;

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1 Introduction

SAMSA is one of eleven public entities and agencies created by the Department of Transport to provide efficient operational services to the public, reporting directly to the Minister of Transport. SAMSA's tag line "SAFE SHIPS • CLEAN SEAS" clearly and simply epitomises its duties as South Africa's maritime safety authority. In addition to its responsibility for monitoring and enforcing marine environment and safety standards within South Africa's territorial waters, SAMSA is the authority mandated with promoting the nation's maritime interests. SAMSA also acts as a quality assurance body within the South African skills development system, by virtue of its role as steward of the International Maritime Organisation (IMO) seafarer certification standards (STCW 95). Consequently SAMSA is also responsible for ensuring that maritime skills are optimally developed in line with the nation's maritime interests. This includes skills development of the Republic of South Africa, including its waters within the exclusive economic zone.

> *"My vision for SAMSA is of an authority that plays its technical role as a centre of excellence to provide pollution control, safety, and environmental health, in a manner that will make it a world-class player, but at the same time to aggressively pursue the economic agenda that SAMSA should have played from the beginning"*
>
> *Tsietsi Mokhele SAMSA CEO*

In its bid to emerge as a leading maritime authority worldwide, SAMSA has adopted the Department of Transport's long-term vision to develop South Africa into one of the world's top 35 maritime nations by the year 2014. SAMSA aims to substantially increase the number of South African flagged vessels and develop new South African shipping companies that are globally competitive.

SAMSA's ultimate goal is aimed at the transformation of the Maritime Sector, which includes creating an understanding and an awareness in South Africa (as in other maritime administrations, such as those in the United Kingdom (UK), Norway, Singapore and other countries all over the world) that the focus should not only be on complying with the national or international standards of safety, but also on a range of other aspects that include growing and developing the maritime economy.

The "Broad-Based BEE Charter for the Maritime Transport Industry" seeks to encourage all stakeholders to pursue an aggressive transformation agenda according to the broad guidelines set out in the National Strategy and BEE Scorecard. SAMSA is therefore pursuing a growth strategy that prioritises the development and retention of quality critical and scarce skills. SAMSA realises that for this vision to become a reality, SAMSA will require a deliberate strategy to increase access to skills, capital and economic opportunities and therefore raise the economic value add (or productivity) of every employee and enterprise across all sub-sectors of the SA maritime sector. SAMSA envisages working in close partnership with its stakeholders: Department of Transport (DOT); Department of Agriculture, Forestry and Fisheries (DAFF), Department of Environmental Affairs (DEA), Department of Water Affairs (DWA); National Department of Tourism (NDT); Department of Higher Education and Training (DHET); South African Maritime Transport and Services Industry (MT&SI); Seafarers; International MT&SI; International Maritime Organisation

(IMO); International Labour Organisation (ILO) and other relevant strategic partners to meet its skills development goals.

The economic contribution of the maritime sector

SAMSA acknowledges the impact the Authority can make on the South African economy and therefore aims to ensure successful implementation of all services offered. There is anecdotal evidence that the pool of qualified and experienced maritime skills capable of advancing the nation's interest has been declining for quite some time. The need to arrest and reverse this trend is therefore crucial and urgent for the sector but also for the economy as a whole.

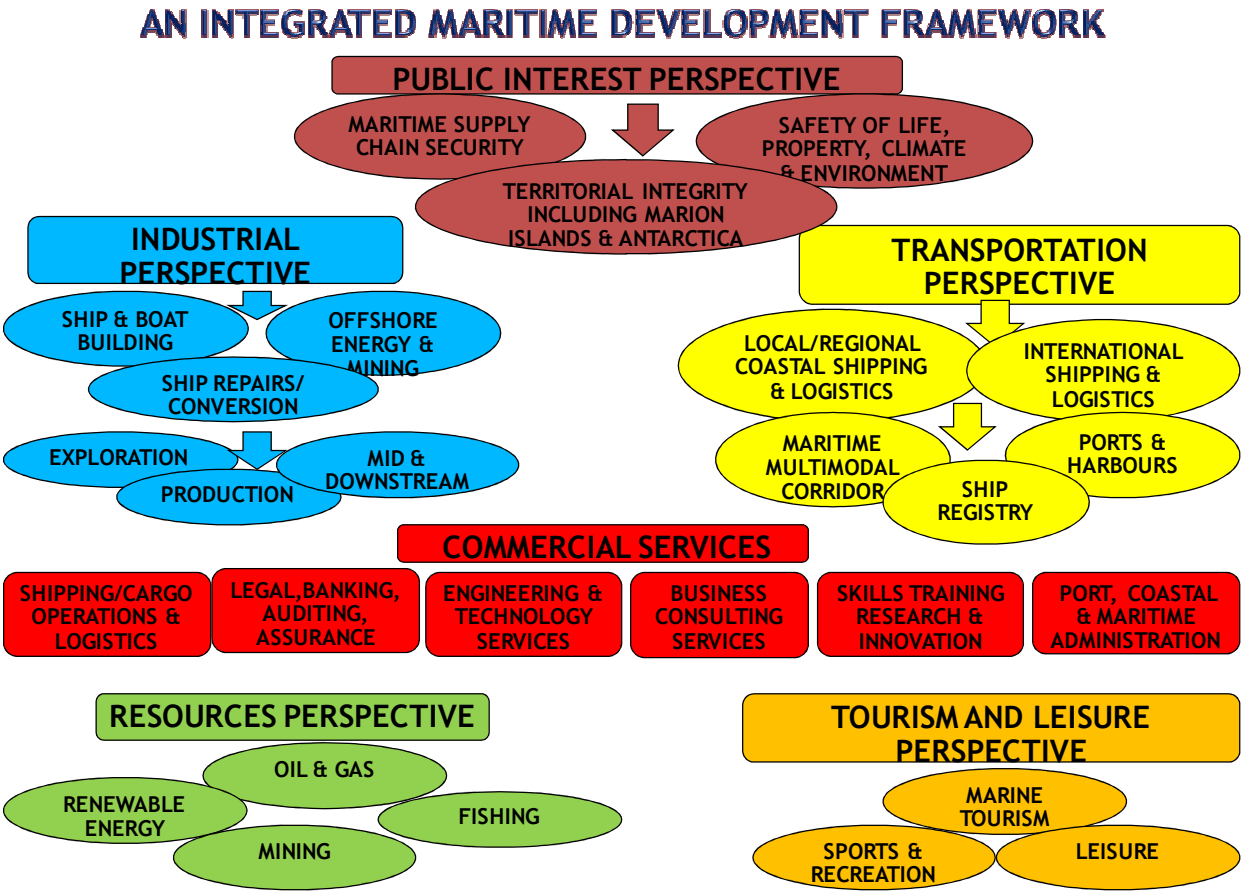
"SAMSA has, as one of its goals, to create a maritime economy centred round international maritime services. To this end, sets of maritime skills have to be developed, maintained or attracted.

Until recently, the maritime sector in South Africa has been defined as ports and shipping and their immediate activities. The maritime sector has not been mapped previously in terms of all industries that fall within the sector. A significant proportion of maritime relevant skills are distributed across a number of Sector Education and Training Authorities (SETAs) other than the Transport Education and Training Authority (TETA). Thus, there has been ambiguity in the past of what sort of skills will constitute maritime and would be crucial for driving the maritime economy.

The Maritime Transport Industry (MTI) constitutes economic activities that have some direct and indirect relationship with the sea. Several maritime activities are concerned with the exploitation of the resources of the sea and the seabed off South Africa's shores. Many others are involved in some way or another with the sea trade on which the South African economy largely depends. To some extent a variety of activities derive their purpose from the supply of marine transport for different purposes. The contribution of the maritime sector to the South African economy is discussed in more detail in later chapters of this report.

The following diagram (courtesy of SAMSA) illustrates the impact of the maritime sector's contribution to job creation and skills development:

Figure 1: The Shipping Economy from a South African Perspective



The diagram illustrates the scope of the shipping economy from a South African perspective. SAMSA recognises that actualising its organisational goal and the national vision for maritime competitiveness, requires a comprehensive strategy that provides for, among other indispensable aspects, the optimal development of maritime skills to meet current and future demand which includes increasing access to skills, capital and economic opportunities. Achieving this will raise the economic value added (or productivity) of every employee and enterprise in the sector.

It is in order to inform the strategic conversation concerning maritime skills development that SAMSA commissioned the Maritime Sector Skills Study.

The Maritime Sector Skills Study

Conventionally research into the availability of maritime skills focuses on seafaring occupations. A typical example is the Australian Maritime skills study[3].

Maritime skills studies that include skills sets additional to seafaring typically have the maritime sector and its industries as focus, rather than the occupation of seafaring, as demonstrated in a UK Maritime Sector Labour Market Assessment[4].

The rationale underpinning the effort to identify the broad spectrum of maritime specific, related and relevant skills stems from the importance placed on South Africa's national development priorities, succinctly captured in government's mandate to halve poverty and unemployment by 2014.

This South African study has provided a maritime sector footprint that presents a broadened understanding of the maritime sector by outlining the maritime related industries of which the maritime sector is comprised. A comprehensive analysis of the maritime sector in South Africa has not previously been provided hence there was little data available at the start of the study. This study presents an evidence base that increases the understanding of strategic priorities and opportunities for the maritime sector. By emphasising the seafaring occupations appropriately, along with other key occupations in the maritime value chain, this study allows for the identification and consideration of multiple skills development, job creation and economic growth opportunities. This study also provides an initial contribution to a maritime skills development strategy that can be based on evidence of the current status quo of the sector.

SAMSA appointed Deloitte to conduct a maritime sector skills study that would provide an evidence base for planning skills development. This study has been conducted bearing in mind that the NSDS III demands that sector skills planning rests firmly on reliable data and research. The study offers an analysis of economic development and employment trends including a consideration of national and sector growth and development strategies, particularly those related to the national economic and development strategy, the National Human Resources Development Strategy and those related to the Industrial Policy Framework, innovation and technology and Rural Development, it has been designed to form the framework for a "Maritime Sector Skills Plan".

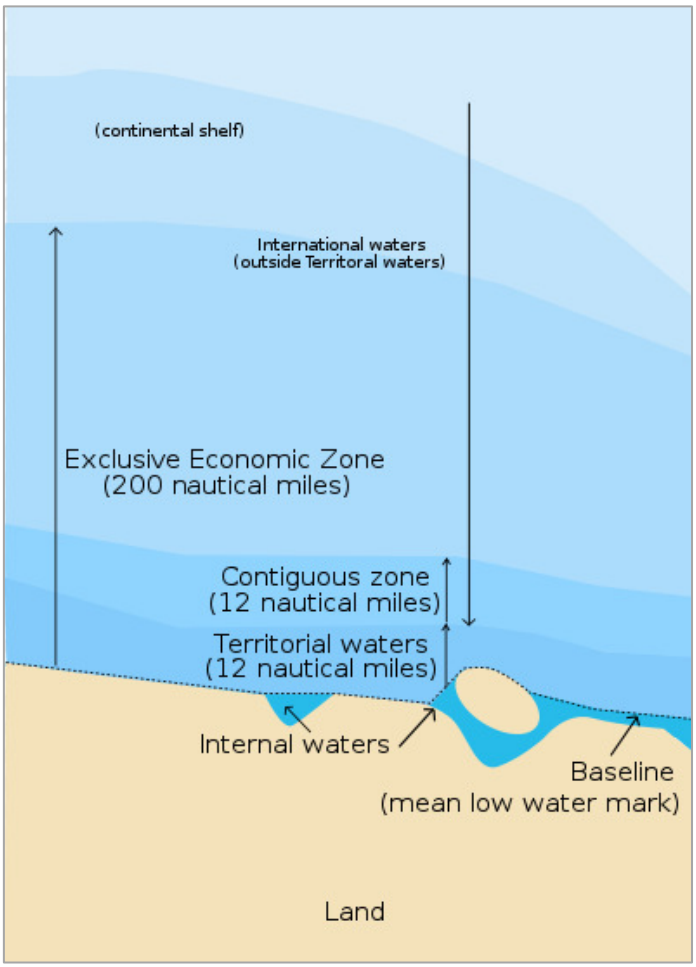
[3] AMSA 2002

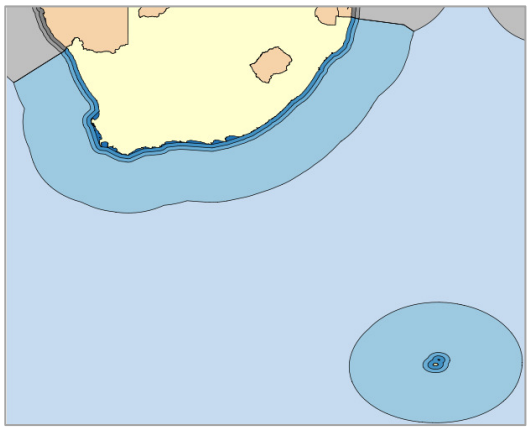
[4] UK Maritime Alliance, 2005

1.1 Understanding the jurisdiction of the maritime sector in the Republic of South Africa

In all other sectors such as mining, health and agriculture, a map is able to demarcate activities by identifying areas of jurisdiction and illustrating where the types of activities occur. To understand what is meant by maritime, it is also necessary to illustrate the maritime jurisdiction. The following map illustrates that maritime goes beyond the borders of the physical land, notwithstanding the inland waterways.

Figure 2: The sea-zone belonging to a republic and maritime zones of South Africa[5]





Under the law of the sea, an exclusive economic zone (EEZ) is a sea-zone over which a state has special rights over the exploration and use of marine resources. It stretches from the seaward edge of the state's territorial sea out to 200 nautical miles from its coast. In casual usage, the term may include the territorial sea and even the continental shelf beyond the 200 mile limit[6].

The Republic of South Africa includes a coastal area of 12 nautical miles (22.224 kilometres) and an Exclusive Economic Zone (EEZ), which includes 200 nautical miles (370.4 kilometres) of water surrounding the Republic of South Africa.

[5] http://en.wikipedia.org/wiki/File:Maritime_zones_of_South_Africa.svg

[6] http://en.wikipedia.org/wiki/Exclusive_Economic_Zone

According to an article provided by SAMSA[7], South Africa has an EEZ of 1,5 million km² and 90% of imports / exports measured in tons (75% in monitory value) pass through our ports. Ships passing within the 12 nautical mile zone are also required to abide by South Africa's laws.

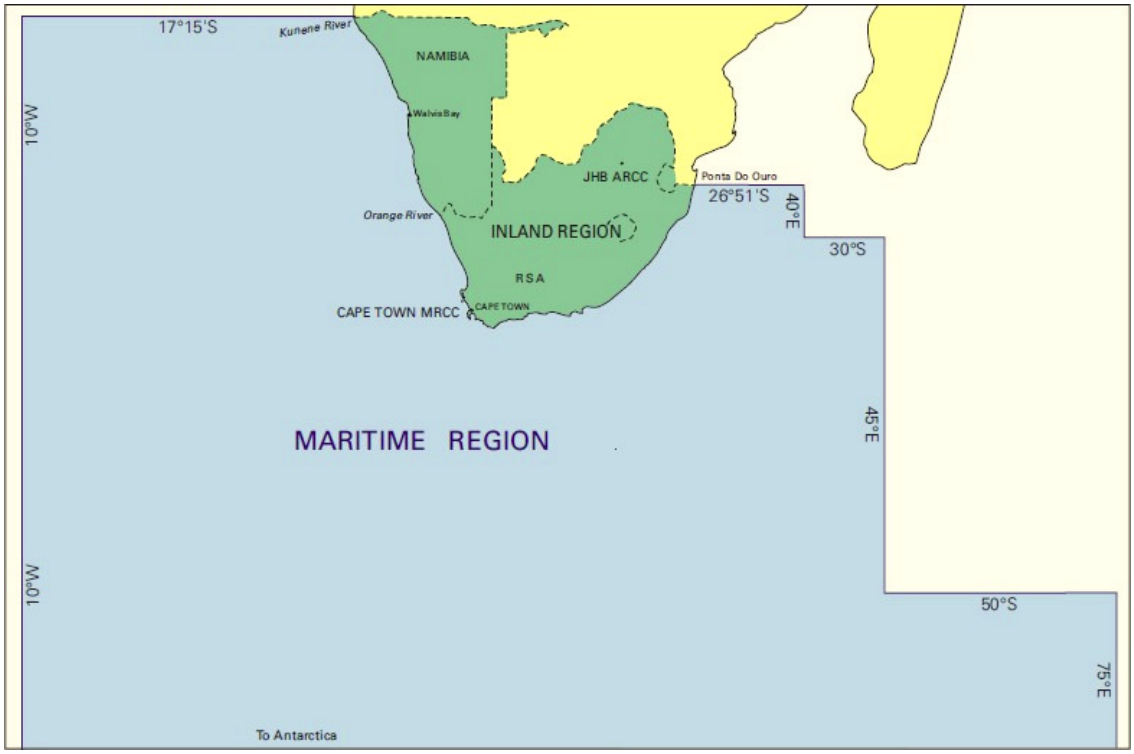
There is another layer of required jurisdiction, based on international treaties. This jurisdiction includes:

- Search and rescue regions;
- Long Range Identification and Tracking zone (LRIT);
- Maritime traffic patterns;
- Antarctica; and
- Islands that form part of the Republic of South Africa.

Each of these jurisdictions is elaborated on briefly below[8]:

Search and rescue regions: The entire globe is divided into Search and Rescue (SAR) areas. The International Maritime Organisation (IMO) allocated an area to South Africa for purposes of search and rescue which extends well beyond South Africa's EEZ. This requirement places the responsibility on South Africa, enacted through the South African Search and Rescue ACT (SASAR Act), to respond to vessels in distress in the area depicted in the diagram below.

Figure 3: South Africa's search and rescue region



[7] A Sail Training Vessel for South Africa. Article provided by SAMSA (6 December 2010)

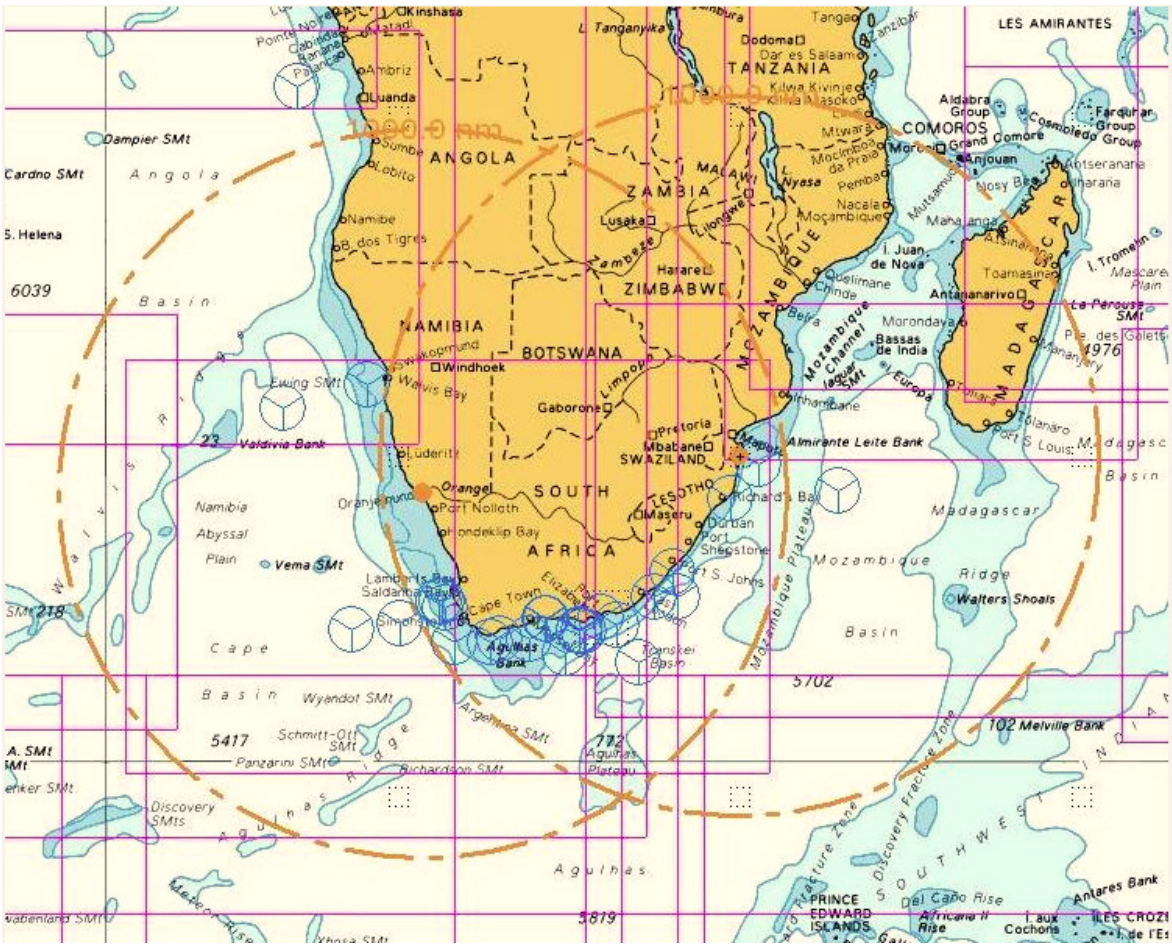
[8] Information on jurisdictions and diagrams provided, courtesy of SAMSA's Executive Head: Centre for Sea Watch and Response

Long Range Identification and Tracking zone: The Long Range Identification and Tracking of ships (LRIT) is a system implemented by the IMO to enhance maritime security, especially since piracy is on the rise. IMO Member States must ensure that trading vessels registered in their country must be compliant. This means that a South African-flagged vessel can be tracked anywhere in the world. In addition, a Coastal State may wish to track compliant vessels in their waters – up to a maximum range of 1000 nautical miles from their coastline – and may track vessels in the overlap of the national border, as depicted in the diagram below. Countries may reduce the range of tracking or switch-off their tracking system if they do not wish to track. The decision to do so is most often a monetary issue.

South Africa's LRIT system allows SAMSA to identify, monitor and track vessels great distances from our borders. South Africa has a Maritime Security Advisory Committee (MSAC), chaired by DoT, that meets bi-monthly in Pretoria. Ships are identified and when necessary, data is shared with other maritime Security entities such as the Department of Transport, Department of Defence, National Intelligence Agency, SANDF, the South African Navy, State Security, SAPS (criminal acts, firearms, etc), SARS (counterfeit goods), DIRCO (international relations and protocols), DHA (crew, stowaways), DEA (illegal fishing), etc.

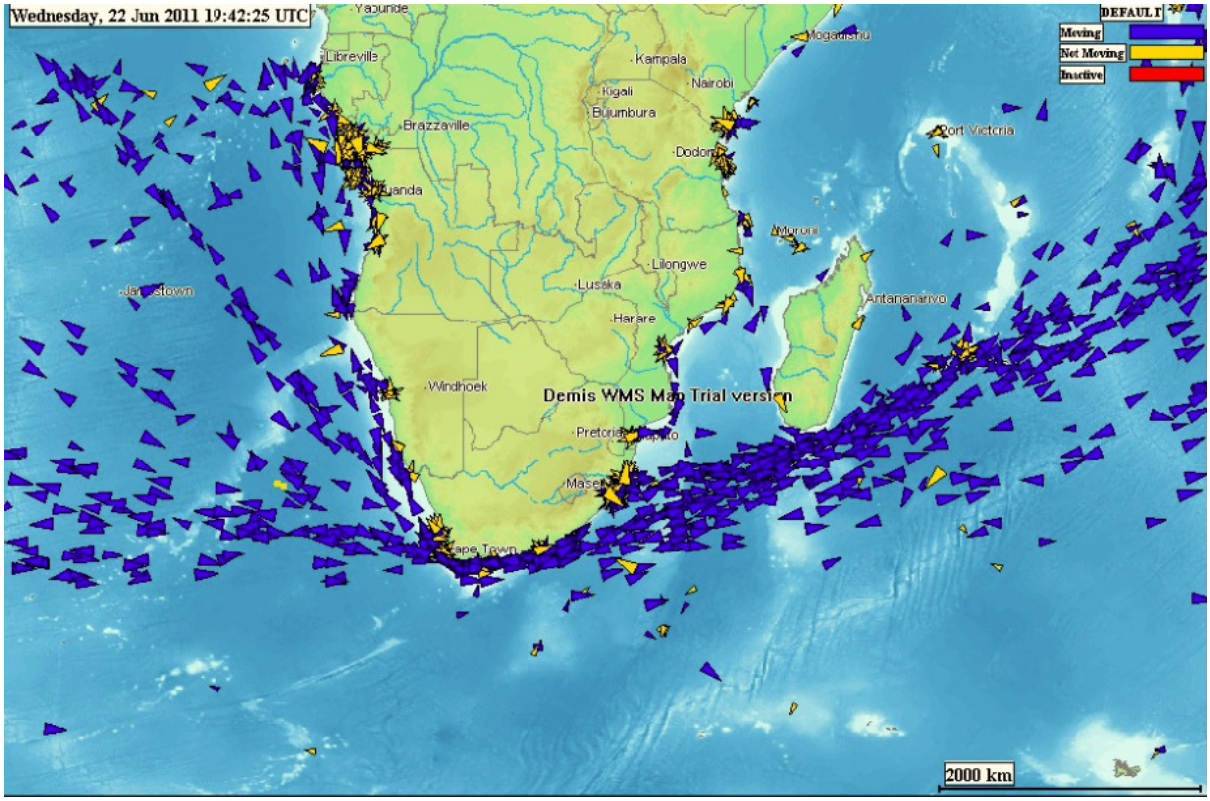
All oil, gas and minerals, abalone, fish, etc. that are found within the EEZ belong to South Africa.

Figure 4: South Africa's Long Range Identification and Tracking zone with a 1000 nautical mile radius



Maritime Traffic patterns: A component of monitoring and tracking includes gathering data on traffic patterns as it relates to safety of navigation. This data is also valuable for maritime intelligence, strategy and marketing. The change in the increasing size of tankers with more crude oil, for example, implies that the risk profile of the coastline changes. This requires greater vigilance as well as an improved response capability to incidents. The diagram below depicts traffic patterns identified through monitoring and tracking.

Figure 5: Maritime Traffic patterns

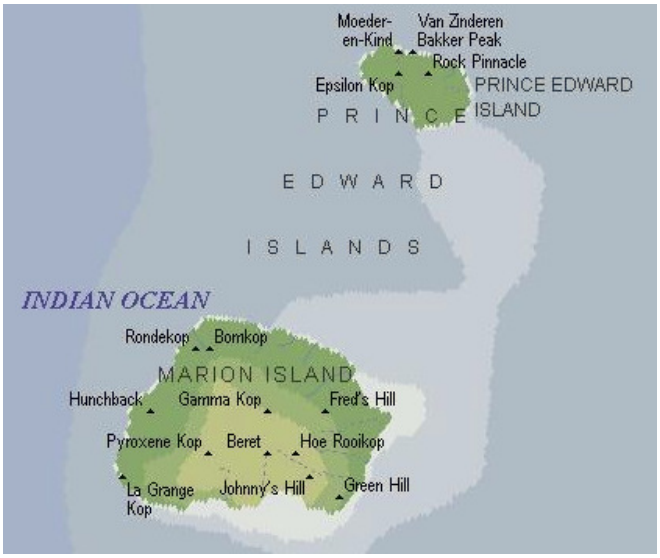


Antarctica: This area does not fall under one country's jurisdiction. Antarctica is unique in that it is governed by an Antarctic Treaty System (that commenced in 1961) that of approximately 45 countries, of which South Africa is the only African country. There are a number of Treaties/Protocols that have been agreed on between the 45 countries.

South Africa has an area of responsibility in Antarctica, which includes the South African base camp in Antarctica. The South African National Antarctic Expedition (SANAE) came into operation in 1961, thereafter the Programme (SANAP) headed up by Department of Environmental Affairs was implemented, which includes expeditions, scientific surveys, etc.

Islands:

South Africa has two islands within its jurisdiction, namely, the Prince Edward Island and Marion Island. These islands (referred to as the Prince Edward Islands), are located approximately 950 miles south-east of South Africa.



1.2 The purpose and objectives of the study

"Be globally competitive and think beyond – be accepted globally and lead"

Government Stakeholder interviewed

SAMSA aims at positioning itself to become a comprehensive Maritime Authority capable of leading South Africa's maritime interests and enabling the industry's contribution in skills development and job creation in line with Government's Growth Path, Accelerated and Shared Growth Initiative for South Africa (ASGISA) and related policy pronouncements.

The intended Maritime Industry Skills Study is evidence of SAMSA's initiatives to improve the skills shortage in the industry.

Study objectives

The terms of reference underpinning this study, highlight five broad study objectives, namely:

Study objective 1: Conduct a review of the maritime sector in South Africa (Chapter 4)
Study objective 2: Explore trends in the supply and demand of maritime skills globally and consider opportunities for South Africa in light of global trends (Chapter 5)
Study objective 3a: Explore policies that relate to skills development in the South African maritime sector (Chapter 6)

Study objective 3b: Explore funding mechanisms and partnerships that relate to skills development in the South African maritime sector **(Chapter 7)**
Study objective 4: Determine the number and types of skills available in South Africa and supply and demand dynamics surrounding South African maritime skills. **(Chapter 8)**
Study objective 5: Determine skills offering and skills development gaps in South Africa **(Chapter 9)**

The first study objective lends itself to a combination of the collection and analysis of secondary data as well as interviews with maritime-focused training institutions, maritime sector companies and key stakeholders in the industry. Through a detailed process of analysis and clarification with the industries within the maritime sector engagement, along with qualitative data analysis sourced from key stakeholder interviews across the South African maritime sector, a South African Maritime Sector Skills Development model was developed and is presented.

The second study objective requires an in-depth global literature review and desktop analysis, supported by qualitative data analysis sourced from key stakeholder interviews across the South African maritime sector.

The third study objectives require a combination of in-depth desktop analysis, along with qualitative data analysis sourced from key stakeholder interviews across the South African maritime sector.

The fourth study objective is quantitative in nature. It lends itself to the collation of quantitative data from secondary sources such as those from Statistics South Africa, (StatsSA), Sector Skills Plans (SSPs) and all available published and unpublished sources of data that refer to number of maritime sector skills supplied by training institutions. The problem statement further requires the engagement with maritime sector training institutions and companies to source quantitative data from for descriptive analysis.

The fifth study objective lends to a qualitative methodology to explore and gain an in-depth understanding of skills offerings and skills gaps in South Africa.

The section below demonstrates how each problem statement is responded to in the report.

1.3 Structure of the Report

The methodological design and conceptual framework underpinning this skills study is described in chapter 2 and processes that were put in place to ensure valid, reliable and authentic findings are highlighted.

The cornerstone of this report is presented in the findings and analyses chapters three to seven. Each chapter is introduced for easy reference. Throughout the report, key findings and recommendations are highlighted in green blocks so that these can be referred to, as required.

Chapter 3 sets the scene for this sector skills study by describing the South African context within which the maritime sector finds itself.

Chapter 4 responds to the **first study objective**. The chapter begins with findings from exploratory research that assisted in providing indicative data that was scrutinised to present the footprint of the maritime sector. The chapter then presents a South African Maritime Sector Skills Development model that provides a greater understanding of the broad types of skills available in South Africa that are required, relevant or related to the maritime sector.

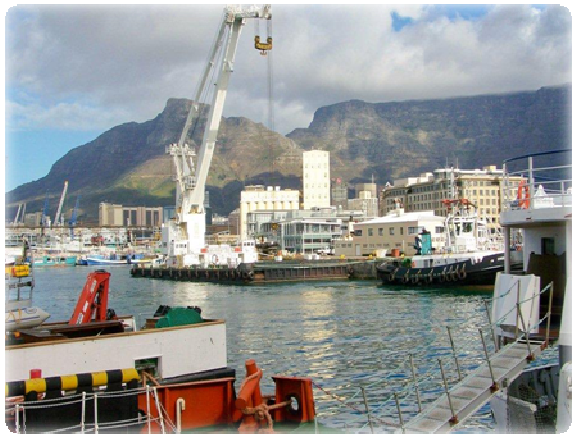
Chapter 5 reflects on trends in the supply and demand of maritime skills globally and in so doing, responds to the **second study objective**. The chapter presents the findings of a thorough literature review and analysis of desktop findings. The key industry of focus within the maritime sector is described. The global maritime shift in trade around the Cape of Good Hope as well as global trends in the supply and demand of skills, are highlighted. Solutions are considered that maritime nations are applying in response to skills development challenges. Once these findings are presented, the implications for South Africa are highlighted, followed by a summary of the chapter findings with recommendations.

Chapters 6 and 7 respond to the **third study objectives** underpinning this study. In chapter 6 the legal and policy frameworks governing the development of maritime skills and those relevant to the maritime sector, are described. Key supportive factors and impediments are discussed, based on an analysis of the interview data provided by the range of maritime stakeholders engaged with throughout the study presents a review of the maritime sector in South Africa. In chapter 7, a sample of public and private funding/donor agencies that fund skills development interventions to individuals and institutions, are listed together with a description and criteria. Stakeholder inputs are also considered based on an analysis of interview data. Furthermore, possible strategic partnerships to advance the development of skills are investigated. The chapter eludes to a case study (presented in Annexure F) to illustrate how partnerships between various stakeholders can enable large scale skills development and job creation.

Chapter 8 responds to the **fourth study objective** by indicating the current number and type of maritime skills available in the key maritime industry clusters in South Africa and demonstrating supply (training providers) and demand dynamics surrounding South African maritime skills. The content of the comprehensive list developed to describe the sector was vetted through key informant interviews and a skills supply and demand survey. In support of the chapter, a list of all skills training institutions in South Africa is compiled as supported in Annexure G.

Chapter 9 consolidates the wealth of findings provided through in-depth stakeholder interviews with key maritime sector specialists. The chapter responds to the **fifth study objective**. Thematic content analysis is used as the basis to identify themes that affect skills development in the maritime sector in a positive or negative way. Prevalent themes supported by quotes provided by stakeholders across the sector, are presented. Themes that may affect the development of skills in the country are placed into four quadrants to complete a SWOT analysis that informs the strengths, weaknesses, opportunities and threats of the current South African maritime sector within the skills development context. This chapter analyses the benefits and constraints in the skills development regime in South Africa, making recommendations to resolve factors hampering the development of the sector. The chapter also indicates those maritime skills that are not offered in South Africa, yet crucial for advancing the nation's maritime interests.

Chapter 10 moulds together the findings presented throughout the report into a conclusion and recommendations chapter. The chapter summarises the key findings of the study and paves the way forward for recommendations that will guide decision-makers to re-position the maritime sector in South Africa. The chapter then presents the future ideal state that South Africa's maritime sector should be driving towards to ensure that South Africa becomes a leading maritime nation.



Annexures are provided in support of the report as follows:

- Annexure A: A list of market study data used for desktop review, a list of documents used for desktop review and a list of acronyms
- Annexure B: List of 68 private enterprises and 30 training institutions contacted
- Annexure C: Key stakeholder survey: Interview schedule of interviews completed and secured
- Annexure D: Letter from SAMSA mandating the research study
- Annexure E: Examples of global solutions to the maritime skills shortage

  Overview of global maritime education and training: examples of the UK, Australia, China, Singapore, Greece and India
- Annexure F: A BPO&O SSF Case Study

- Annexure G: A matrix of relevant training institutions in South Africa
- Annexure H: The changing legislative landscape in the skills development arena
- Annexure I: Interview schedules
- Annexure J: Additional information on supply and demand data

2 Research Design

For this maritime sector skills study to inform and assist the development of a maritime sector strategy that aims to improve the competitiveness of South Africa as a maritime nation, the skills study needs to accomplish the following:

- Provide a reliable overview of the current state of maritime skills in South Africa;
- Capture the trends in the global maritime sector that might influence South Africa's competitiveness;
- Identify the implications of these trends for developing a South African maritime sector strategy; and
- Articulate the skills development needs implicit in a South African maritime sector strategy.

This chapter illustrates the three methodological approaches used to respond to the study objectives underpinning this study. The project challenges and limitations are also highlighted.

2.1 Methodological approaches for data collection

The general approach to addressing the research was to collect, consolidate, and review secondary data; identify gaps in data that inhibits a satisfactory response to the research objectives and address the data gaps by generating primary research data where possible.

To meet the stated objectives of the study, three methodological approaches were introduced in the research design, namely:

- (i) Literature review and desktop analysis of secondary data to inform trends in the supply and demand of maritime skills globally (chapter 5) and to report on policies, funding mechanisms and partnerships that relate to skills development in the South African Maritime Sector (chapters 6 and 7);
- (ii) Primary data collection and analysis to inform the maritime sector footprint (chapter 4) and to determine the number and types of skills available in South Africa as well as supply and demand dynamics (chapter 8); and
- (iii) Primary data collection and analysis to determine skills offerings and skills development gaps in South Africa (chapter 9).

Although data collection methodologies described above link to specific chapters, these methodologies were used throughout the research to inform all chapters presented in this report.

Each of these approaches is discussed in more detail in the following sections

2.1.1 Literature review and desktop analysis of secondary data

An in-depth literature review was conducted to assist the research team to determine trends in the supply and demand of skills globally.

Secondary data was collected and an in-depth desktop review was conducted to assist the research team to structure their thoughts and conceptualise the South African maritime sector in a way that best informed the Maritime Sector Skills Development Model.

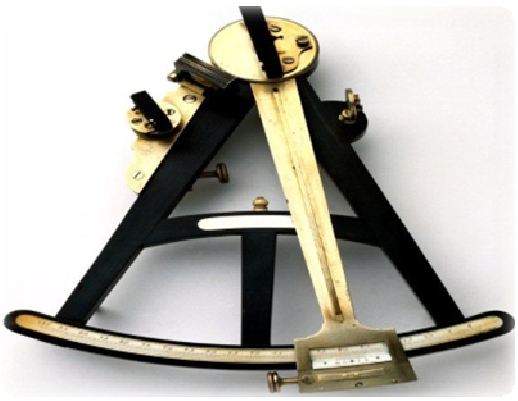
Desktop analysis strategy

An extensive secondary data collection and analysis process was completed in which over 300 sources were reviewed. A number of different types of data were sourced, the utilisation and analysis of which differed. The data included official statistics releases from sources such as StatsSA, other statistical output, research reports, academic articles, books, policy documents, strategic analyses and plans, newspaper and new media articles, legislative documents and policies sourced both locally and internationally.

A general search strategy was devised to guide the sourcing of secondary data. Topics of interest were listed, based on the objectives of the study and input from key informants with extensive knowledge of the maritime sector. Located sources were downloaded and arranged into categories which informed the structure of the research report to some degree.

Scrutinising the sources located in the general search, gaps in data were identified and specific search strategies were devised to locate missing data. All search terms were documented to ensure that, upon review, it could be determined that the online search for sources had been exhaustive. In cases where specific searches yielded no results, potential institutional sources were identified and contacted with data inquiries.

Where data was available from such sources it was either obtained electronically, or in hard copy. The range of market study data is categorised in Annexure A, along with the list of references.



2.1.2 Primary data collection and analysis to determine skills supply and demand

An intensive data collection process was applied to inform the maritime sector footprint and to determine the number and types of skills available in South Africa as well as supply and demand dynamics.

The Maritime Sector Skills Study focused on providing an initial footprint the sector, which was necessary since there was no sector anatomy before the study was conducted, focussing on determining the existing skills in the sector and the skills gaps of the sector.

The skills supply and demand survey is designed to provide basic descriptive analyses of data on skills demand obtained from a sample of private enterprises in the maritime sector, and compare that demand to an analysis of supply data obtained from a sample of education and training institutions in the maritime sector.

The sampling processes and outcomes are described below:

2.1.2.1 Sample of Companies

To explore the maritime sector in South Africa, the research team had to use as its point of departure, existing online directories that were non maritime specific, since no maritime specific database currently exists to represent a basis for conceptualising a maritime sector footprint model. Two surveys were conducted with samples of companies during this study:

- At the onset of the study, to gain an understanding of the maritime landscape in South Africa, secondary data collection and analysis was conducted using existing online directory listings. Data was scrutinised and companies were identified that represent various industries within the maritime sector. Companies were then purposively sampled from each of the industries identified and primary data was sourced from a sample of private enterprises in the maritime sector. Telephonic interviews confirmed the types of skills within each of the industries as well as the broad range of industries.

- Once a maritime sector footprint was established and confirmed by SAMSA, a second survey was conducted with a sample of companies identified as being integral to each industry within the maritime sector. The purpose of the second survey was to collate an estimate number of employees within each of the maritime sector industries. Secondary data was also collected and analysed, together with inputs from stakeholders within these industries, to gain a more comprehensive understanding of the skills supply and demand dynamics within these industries.

The following sections provide an indication of the companies sampled for each survey and key considerations that must be highlighted.

Scrutinising existing data from online databases

The combination of scrutinising online databases and analysing primary data sourced from a sample of companies, assisted in providing an indication of the industries within the maritime sector as well as the types of skills in each industry within the maritime sector, where prior to the study there was no indicative data for the sector.

The electronic data sourced from the online directories was subjected to descriptive statistical analysis used within the MS Excel environment, with tabular and graphical output produced. The combined listing and rationalisation resulted in a sampling frame of approximately 450 companies. The directory listings did not include commercial fishing enterprises. Commercial Fishing enterprises were subsequently added for a more comprehensive overview of the maritime sector.

The following considerations are highlighted in terms of sourcing data from online directories to better understand the maritime sector:

- Findings from the sample can only be said to be **indicative** of the enterprises and skills within the scope of the maritime sector focussed on.

- Since existing online directory listings are a voluntary act entered into by individual companies, limitations existed for this study for determining the number of skills across industries identified as belonging to the maritime sector. For this reason, a second survey was conducted, as described below.

Sampling companies to gain an understanding of the maritime sector footprint

A sample of 70 companies was purposively sampled from the online directories that were reviewed and rationalised. Data for commercial fishing enterprises was purposively added on review in order to ensure representation from that industry[9]. With the addition of three commercial fishing enterprises the total sample was finalised at 73 companies.

Purposive or judgemental sampling is a form of non-probability sampling and unlike stratified sampling does not have a quota to fill from within various strata[10]. Purposive sampling refers to when a sample is selected "on the basis of available information" that can be judged by the researcher to be representative of the total population[11].

A concise data collection instrument was developed for administration telephonically and the most appropriate representative to participate in the survey was interviewed. The data included a very limited number of quantitative responses regarding employee numbers and vacancy rates, as well as categorical variables on maritime occupations.

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9 The data from commercial fishing enterprises included in the sample was not collected in the telephonic surveys, but subsequently from secondary data sources or during the in-depth interviews with sector stakeholders

[10] Bailey K.D., (1987). Methods of Social Research. 3rd Edition. Collier Macmillian Publishers. London.

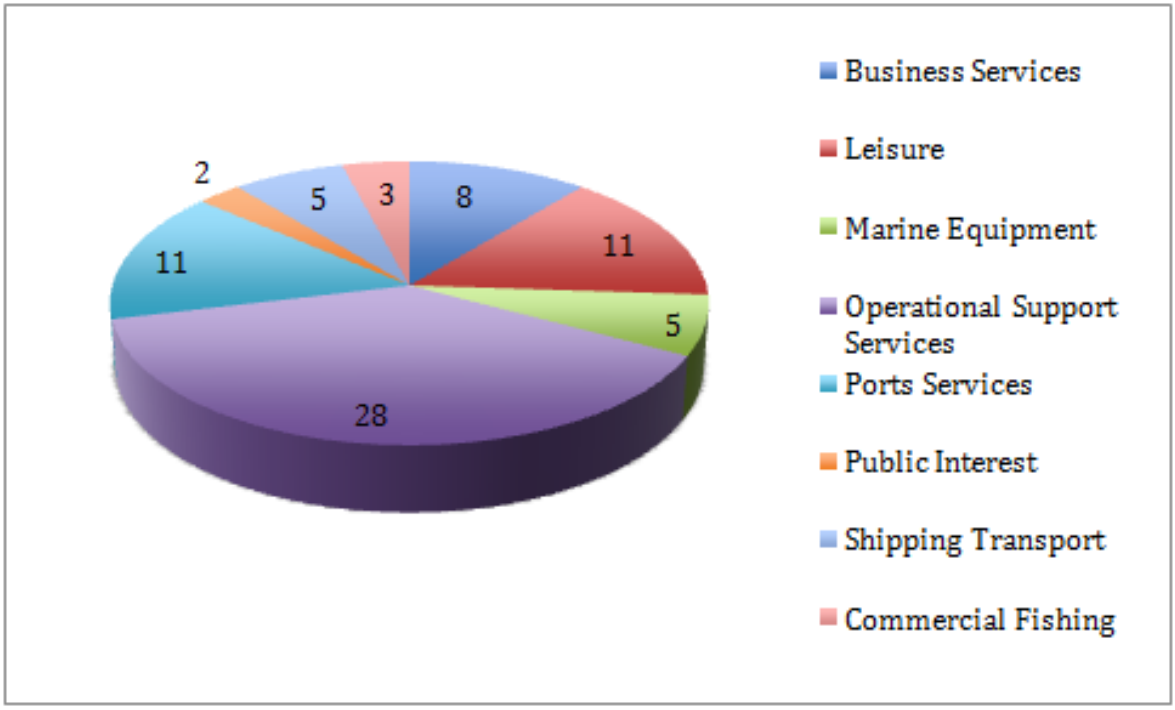
[11] Guy R.F. Edgley C.E. Arafat I. Allen D.E., (1987). Social Research Methods: Puzzles and Solutions. Allyn and Bacon, Inc. United States of America.

The following considerations are highlighted in terms of sourcing data from a sample of companies to better understand the maritime sector:

- The sample of companies selected for the study at hand provided indicative data that assisted in determining the maritime landscape. The sample is not representative since its purpose was to explore the Maritime sector and gain an understanding of the sector footprint. The sample creates a first impression of industries within the Maritime Sector and the companies in the sample indicate the types of maritime skills necessary for each industry.

Figure 6 represents the number of companies per cluster in the first sample of companies surveyed to gain an understanding of the maritime sector landscape and types of skills within each industry (n=73):

Figure 6: Companies per cluster in the sample



The proportions in which the maritime footprint categories are represented in the directories provide an indicative reflection of the relative proportional size of the industries within the maritime sector, with the exception of the representation offered of the Commercial Fishing industry.

The following table provides a list of companies included in the survey:

Table 1: List of companies sampled for initial survey to understand the maritime sector footprint and types of skills within each industry

Clusters & Industries	Companies included in the survey
Shipping	**Companies included for shipping transport:** • Diamond Shipping • Mitsui OSK Lines • Phoenix Shipping • Smit Amandla Marine • Trade Ocean Shipping Services **Companies included for shipping ports and marine services:** • ABX Turners Warehousing • API Holdings Ltd • Bay Stevedores • Crane Hire • Cross Country Containers • Indian Ocean Terminals • NPA Light House Services • Oceana Group • Omega Containers • Unitainer • Versatille Container Handling
Maritime Resources	**Companies included:** • Irvin & Johnson (I&J) • Sea Harvest • Viking Fishing • South African Oil and Gas Alliance (SAOGA)
Marine Tourism	**Companies included:** • Classic Cape Charters • Durban Marina • Honda Marine • Isle of Capri Pleasure Cruises • JS Exclusive Boating • My African Sky • Parasail Africa • Pieter Volschenk Naval Architecture CC • Rodman • Sarie Marie Pleasure Cruises

Clusters & Industries	Companies included in the survey
Operational Support Services	**Companies included:** • Airwaves • B W T Electronics Marine Automation & Repair • BMT Marine & Offshore Surveyors • Cape Diving • Cotenca Inspection • D & M Freight • Dormac Ship Repair Southern Africa • Dorman Labour Services • Drizit Environment • Fumigation & marine Services • General Insulation • Greystone Cargo systems • Hency Transportation • Intertek Caleb Brett • Johnson Crane Hire • Main Port Africa • Marthinuser LH • Micor • Poane Ship Chandlers • Rainbow Marine and Industrial Services • Rotan K Z N • SACD Freight • Seek and Bark Storaway Detection • SSI Engineers and Environmental Consultants • Switches International • Vasco da Gama Ship Chandlers • Vouga Marine Services
Manufacturing	**Companies included:** • Cape Crating • Cato • PDP • Absorb Products CC • Petrel Engineers
Business Services	**Companies included:** • Advanced Customs Solutions

Clusters & Industries	Companies included in the survey
	• Aviocean Natal CC • Bureau Veritas Cape Town • Deneys Reitz • Lebefu Trading • Offshore Marine Services • Russell Cleaver
Public Interest Services	**Companies included:** • Ocean Sailing Academy • Panama and South African Registry Services SA

Sampling companies to determine estimate number of employees within each industry of the maritime sector

Once an understanding of the maritime sector footprint was provided and the Maritime Sector Skills Development Model was refined by SAMSA, a second survey was conducted with companies identified within each sector that are regarded as providing significant maritime skills and employees.

Sixteen companies were purposively sampled and contacted telephonically to ask about numbers within the company. Documentary evidence provided further insights on numbers (annual reports reviewed).

It is noted that numbers have been challenging to obtain for each of the industries. There are major gaps in the data and it is difficult to get hold of exact data even with the appropriate contact persons at companies. Numbers are not readily available - no proper numbers are collated currently for the maritime sector. The focus of a follow-up study should be to obtain proper numbers for all companies involved in each of the seven maritime sector industries.

Table 2: List of companies sampled for a follow-up survey to determine the number of skills (employment) within the maritime sector

Clusters & Industries	Companies included in the survey
Shipping	**Companies included:** • South African Association of Shipping Operators and Agencies • National Ports Authority • Transnet Ports Terminals • Transnet Freight Rail
Marine Resources	**Companies included:** • Food and Agriculture Organisation • Petro SA

Clusters & Industries	Companies included in the survey
	• Forest Oil • Pioneer Engineering • South African Oil and Gas Alliance
Marine Tourism	**Companies included:** • Department of Tourism • Cruise Tourism Study • Diving companies
Operational Logistics	**Companies included:** • South African Association of Shipping Operators and Agencies
Manufacturing	**Companies included:** • Cape Town Boatbuilding and Technology Initiative • Marine Technologies
Business Services	**Companies included:** • Private Training Providers

A key recommendation to SAMSA is that in order to obtain proper numbers for the maritime sector, a sector audit should be conducted and a database built of all companies within the maritime sector across clusters / industries identified. This database could be maintained through revision on an annual basis via an electronic survey.

An outcome should be to determine the population of companies within each industry of the maritime sector as well as numbers of employees with maritime specific skills in each company. Once this is available, a random sample of companies can be selected for detailed collation of employee specific data. With a representative sample for each industry, numbers can be inferred for each industry and the maritime sector as a whole.

2.1.2.2Sample of maritime education and training institutions

A sample of 30 maritime education and training institutions was randomly selected from a sampling frame of 47 offering accredited training courses in maritime disciplines using stratified sampling. Stratified sampling is a form of probability sampling that involves dividing the population into layers, or strata. "Stratification is especially useful when a population is characterised as heterogeneous but consists of a number of homogeneous subpopulations or strata"[12]. Stratified sampling is also a modification of a simple random sample.

[12] Guy R.F. Edgley C.E. Arafat I. Allen D.E., (1987). Social Research Methods: Puzzles and Solutions. Allyn and Bacon, Inc. United States of America.

The sample included universities, other tertiary institutions, private training academies and secondary schools. The stratified random sample can be considered representative, with a confidence level of 95% and a confidence interval of 10%.

2.1.3 Primary data collection and analysis of maritime stakeholder interviews

Primary data was sourced through detailed interviewing with a sample of key stakeholders involved in the maritime sector as either leaders in industry, civil society or the public sector.

A robust data collection methodology is critical to the success of any research project. Since this study required interviews with high-level stakeholders, all data was collected by competent, experienced interviewers. Interviewers were part of the project team, fully briefed on what was required from data collection and were able to interpret both verbal and non-verbal cues to supply not only a completed instrument, but a holistic interpretation of the results of the interview.

Interview schedules were designed to engage the public, private and education sector interviewees specifically and appropriately. The schedules provided guidance in a semi-structured interview process, with the discretion of the skilled interviewer determining the direction of each individual interview. The interviewer led the conversation towards the most fruitful areas of inquiry for meeting the purpose and objectives of the study.

Initial contact was made telephonically and an interview scheduled for a convenient time. Upon request for additional detail interviewees were provided with a letter from SAMSA introducing the study. Refer to Annexure D for the letter from SAMSA mandating the research.

Interviewees were distributed institutionally across:

- Government and regulatory authorities: strategic input for sector wide development, with an emphasis on social development objectives;
- Industry associations: the strategic skills development priorities of constituents;
- Private enterprise in the maritime sector: operationally grounded skills development priorities in light of enterprise growth objectives;
- Educational institutions: the responsiveness to emerging skills development imperatives and perceived capacity to deliver.

Interviews lasted between 30 to 60 minutes.

Refer to Annexure C for the full list of interviews completed or secured, with contact details.

Interview notes were used as primary documents for content analysis. The maritime stakeholder survey data provided information that complements the findings chapters of this report and assists in the proposal of recommendations contained in this study.

Data analysis strategy

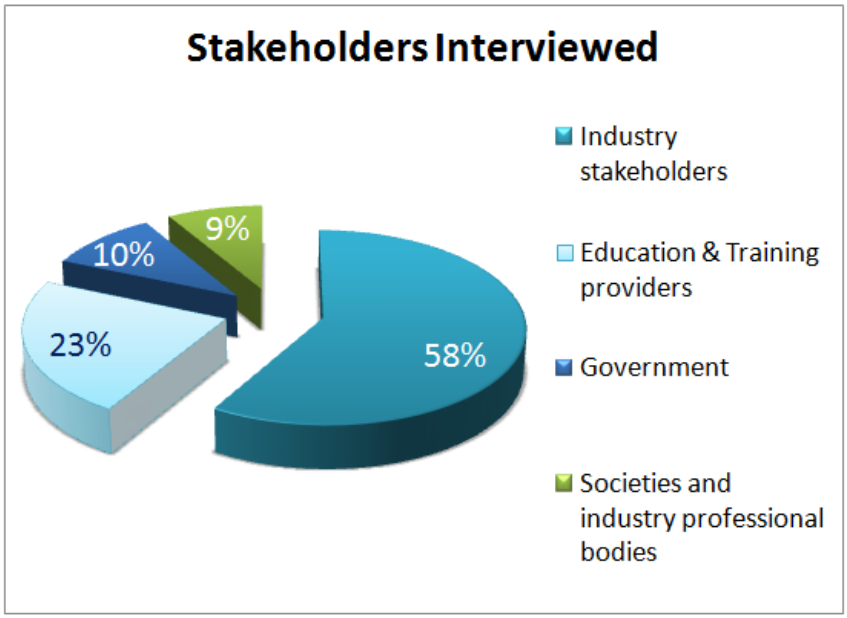
Face-to-face and telephonic interviews were scheduled. Senior interviewers conducted qualitative interviews with stakeholders across the maritime sector. Interviews and data collected was submitted to the Deloitte Project Management Office (PMO) for quality assurance, where the lead researcher reviewed each interview and clarified meanings that were unclear to ensure that all data and messages were understood. Data was transferred into a format in preparation for descriptive and qualitative analysis. Content analysis was used to identify key themes relevant across stakeholders.

Content analysis is referred to by Berelson (in Guy et.al, 1987, 300) as "a research technique for the objective, systematic, and quantitative description of the manifest content of communication"[13].

Data analysis instrument

Through the process of content analysis, an analysis instrument was developed that forms the basis from which stakeholder findings are presented throughout the findings and analysis chapters. Stakeholders are grouped into four categories as depicted by the following Figure:

Figure 7: Percentage of stakeholders interviewed per stakeholder category



Industry stakeholders represented 58% of those interviewed. Education and training providers represented 23% of those interviewed. Government stakeholders represented 10% of those interviewed, and societies and industry professional bodies represented 9% of those interviewed. Table 3 presents the analysis instrument and illustrates which overall themes were apparent to each stakeholder group by means of the following key:

[13] Guy R.F. Edgley C.E. Arafat I. Allen D.E., (1987). Social Research Methods: Puzzles and Solutions. Allyn and Bacon, Inc. United States of America.

Figure 8: Key used to indicate the extent to which a stakeholder group identified a theme

○	◔	◑	●
No response	A small minority responded	Only half of the respondents agree	All respondents agree

Table 3: Analysis instrument of stakeholder interviews

	Theme	Stakeholder response	Stakeholder group A Government	B Industry incl. employers	C Education & Training Providers	D Societies & Professional Bodies
Skills supply and demand	1. Maritime Education & Training	**1.1 Global demand for SA seafarers (non-seafarers not included)** 1.1.1 All group A, B, C and D respondents stated that SA has traditionally globally been perceived as a provider of quality maritime training.	●	●	●	●
		1.2 Lack of berths 1.2.1 Respondents from all Groups expressed concern that government's drive for targets in public institutions' maritime studies are severely impacting opportunities for berths with many students unable to be certified due to lack of sea time. 1.2.2 Further concern was expressed by Group B, C and D that the drive for "numbers" is impacting standards & quality of training due to the fact that programmes are accelerated to accommodate more students, threatening SA's international "White Status" as a maritime education and training provider. 1.2.3 Group B and C respondents also indicated that despondent students are seeking employment elsewhere (not in the maritime sector), a factor which severely impacts industry skills needs and growth.	●	●	●	●
		1.3 Limited career awareness 1.3.1 Group A respondents expressed satisfaction with national career awareness programmes but all other stakeholder groups stated that programmes are limited to certain regions and focused on seafaring only.	●	●	●	●
Infrastructure	2. Maritime sector infrastructure and capacity building	**2.1 Port services is not meeting global standards** 2.1.1 Half of the respondents from group A and C strongly commented that national government intervention is required to upgrade port services to enable SA global competiveness. 2.1.2 All the respondents from group B and D agreed and strongly expressed the need for massive government	◑	●	◑	●

		intervention to upgrade infrastructure. Major stakeholders expressed concern that lack of infrastructure upgrade is impacting vital services such as ship repair.				
		2.2 Education & Training institutional capacity building				
		2.2.1 Major concern has been expressed by all Group B, C and D respondents regarding scarce skills currently residing with an aging workforce and no incentives are in place to attract ex-seafarers to lecturing positions for maritime studies. Alarmingly only one respondent from Group A agreed.	◔	●	●	●
Theme		**Stakeholder response**	**Stakeholder group**			
			A Government	**B Industry incl. employers**	**C Education & Training Providers**	**D Societies and Professional Bodies**
Skills Development Strategy	**3. Maritime Sector Skills Development Strategy**	**3.1 Skills pool is shrinking drastically**				
		3.1.1 All respondents from group A, B, C and D stated that urgent national government intervention which includes funding & training incentives is required to build a skills pool and address the sector's scarce skills need.	●	●	●	●
		3.1.2 All respondents commented that the current "management" structure of the sector is under threat due to an aging workforce and limited to no recognition of prior learning is in place.				
		3.2 No national maritime skills development plan				
		3.2.1 Group A, B, C and D stressed that the sector's growth is threatened by aging subject matter experts and experienced seafarers with no coherent national sector skills development strategy to meet future skills demand.	●	●	●	●
		3.3 South Africa as a global maritime skills hub				
		3.3.1 Although all respondents from group B, C and D suggested that SA is perfectly positioned to become a skills hub for the global maritime market, respondents from group A stressed that only once the SA ships register is upgraded will the skills pool grow. Only one group A stakeholder suggested that SA could become a supplier of quality skills to the global maritime sector.	◔	●	●	●
		3.3.2 Non-government respondents furthermore expressed concern that Government's focus is on development of seafarer skills only limiting growth opportunities in other maritime sub-sectors such as the fishing, ship building and ship repair skills.				

Funding	4. Funding	**4.1**	**SETA skills development grants**			
		4.1.1	Respondents from group A and B indicated that a good relationship has been established with the Transport SETA and funding has been obtained for skills development at organisational level.			
		4.1.2	Respondents from all 4 groups stated that strategic government funding from e.g. the National Skills Fund is urgently required to enable development of a critical and scarce skills pool matching the economic growth of the sector.	●	●	●	●
		4.1.3	All large employers from Group B stated that they will continue to self – fund, co-fund and partner with institutions but expressed concern that their efforts are not sustainable without government assistance.			

Theme	Stakeholder response	Stakeholder group A Government	B Industry incl. employers	C Education & Training Providers	D Societies & Professional Bodies
Policy and regulatory Framework	5. Legislative framework	**5.1**	**Employment Equity**				
		5.1.1	Excluding Group A, all respondents, especially large employers, indicated that all efforts are being made to aid accelerated industry transformation, but found that government is Employment Equity target driven and not focused on transformation. Statements were made that anybody not supporting transformation is hampering growth and global competitiveness.	○	●	●	●
		5.2	**Maritime legislative and policy framework**				
		5.2.1	All respondents emphatically agreed that drastic and urgent measures need to be taken to review the SA maritime legislative framework inclusive of the tax regime to aid industry growth.				
		5.2.2	Suggestions were made that government should introduce an alternative shipping tax regime such as tonnage tax and other incentives to attract foreign ship owners in line with other major maritime nations. Respondents also suggested training incentives to ship owners to address the dire need for cadet berths. All respondents stated that industry growth, job creation and global competitiveness are hampered by an unattractive and non-competitive legislative and policy framework.	●	●	●	●

Research	6. Maritime sector data collection, research and development	6.1	**Maritime database, research and monitoring & evaluation**				
		6.1.1	All respondents commented that an urgent need exists for a national and consolidated maritime skills database, with easy access to all stakeholders containing current information regarding skills demand, skills supply and employment opportunities. Respondents were furthermore in agreement regarding the value of monitoring SA seafarers especially cadets working on foreign vessels, however currently Insufficient shore-side infrastructure exists to enable research and benchmarking.	●	●	●	●
Partnerships	7. Partnerships	7.1	**Strategic partnerships**				
		7.1.1	The majority of respondents stated that only strategic partnerships involving, funding, infrastructure and other resources will enable maritime sector growth but blamed the fragmentation of the SA maritime sector on the one hand and the lack of national government support and recognition of the sector as a major contributor to the SA economy for hampering institutional arrangements and strategic partnerships across sub-sectors, maritime economic clusters and government departments. Respondents provided examples of successful partnerships and stated that funding is required to replicate.	●	●	●	●

2.2 Confidentiality

Information obtained from stakeholders is highly confidential and report findings do not make reference to any stakeholders in a way that will disclose sensitive information.

2.3 Limitations and challenges of the study

2.3.1 Limitations to this study

- This study does not attempt to provide a skills audit for training capacity in the Maritime Industry. The terms of reference ask for a qualitative study on the one hand and a detailed desktop review on the other hand to gain an in-depth understanding of skills shortages, training offerings in the sector, legislative inputs, a gap analysis of skills currently not offered in South Africa that could advance the country's maritime industry, supply and demand, funding options and possible partnerships to advance the development of skills.
- Limitations of exploring trends in the supply and demand of maritime skills globally: Desktop research on global trends included both seafaring and non-seafaring skills. Limitations exist in the availability of data globally for non-seafaring skills.
- Limitations of the Key Stakeholder Survey: The key stakeholder survey is designed to elicit the perspectives and insights of leading figures in the maritime sub-sectors. It is not intended to collect data exhaustively representing the views of people in those sub-sectors, but rather to obtain the opinion of a panel of experts. Provided the findings are not asserted as representative of the views of a larger population, external validity should not be a concern.

  It is noted that the qualitative analysis of stakeholder interviews is based on perceptions captured by respondents interviewed. The positioning of key findings are subjective, hence, there may be some comments presented that may need to be tested for accuracy of content.

  A further caution is that to a notable extent, the perceptions and opinions of respondents are not informed by solid evidence because the maritime sector in South Africa, with perhaps the exception of the fishing industry, is not a beneficiary of regular studies and consolidated reporting. The opinions of stakeholders are intuitive judgements based on exposure and experience but also subject to the errors in judgement common to people drawing conclusions from anecdotal evidence.
- Limitations of the Company Surveys: The challenge in collating the number and types of skills still exists because there is no maritime database that consolidates companies within the sector and its industries. A significant gap in the sector currently exists in that no company register exists for the Maritime sector and there is no population of companies listed for each industry within the sector from which a random sample can be selected to determine actual numbers of staff employed.

Hence, the results of the demand side analysis are based on data from a sample that cannot be considered representative of all private enterprises/employers across clusters/industries in the maritime sector.

A purposive sampling strategy was settled on to collect data for both company surveys. The data reported in this study should therefore be regarded as indicative rather than representative of the demand side dynamics of the private businesses operating in the maritime sector.

- Limitations of the Market Study: Although key skills data applicable to the maritime sector as demarcated by SAMSA fall within the scope of TETA, a significant proportion of maritime relevant skills data is distributed across a number of other Sector Education and Training Authorities (SETAs) such as MERSETA, AgriSETA etc., a function of the rationale employed in the institutional restructuring of the SA skills development framework. Stakeholders across sectors indicated that data is flawed as it comes from company Workplace Skills Plans (WSPs) and normally companies rush to pull these together and do not provide solid data that is fed into the Sector Skills Plan (SSP). This also underpins NSDS III placing strong emphasis on accurate SSPs containing validated data to provide strategic guidance for skills planning in each sector.
- To fulfil the SAMSA mandate of promoting South African maritime interests and facilitating job creation, any meaningful skills development strategy would have to be embedded in a broader maritime sector development strategy. The actual composition of such a strategy is beyond the scope of this study.

  However this study did collect, consolidate and analyse data that circumscribed maritime market conditions that would have to be a considered in the devising of an appropriate strategy for the growth and development of the SA maritime sector.

2.3.2 Challenges to this study

- There were challenges with setting up a number of the interviews, since high-level stakeholders who committed to interview times would not be available when called, as per the scheduled time.
- Additional data requested from sampled respondent companies in the skills supply and demand survey was frequently not forthcoming.
- The absence of a Skills Development Model for the South African maritime sector implied that the scope of this skills study required the inclusion of a conceptual framework for the Skills Development footprint of the maritime industry.

3 Setting the scene: The Social Context within which the South African Maritime Sector finds itself

A number of social conditions endorse the pertinence of commissioning a maritime skills study at this time. South Africa finds itself within the following skills development space currently:

- The recommitment of government to its developmental mandate of prioritising social development in economic growth;
- The policy review process that culminated in the launch of the most thorough and binding version of the National Skills Development Strategy in 2010;
- The institutional reform process of the skills system initiated under the new Department of Higher Education and Training (DHET);
- The increasing focus on maritime in South Africa as a sector with significant growth potential; and
- A global maritime sector skills crisis with maritime nations of the authoritative BIMCO/ISF Manpower Study (1990; with updates in 1995, 2000 and 2005), which was published at the end of 2010.

This chapter elaborates on each of the above to describe the context within which the South African maritime sector skills study presents itself.

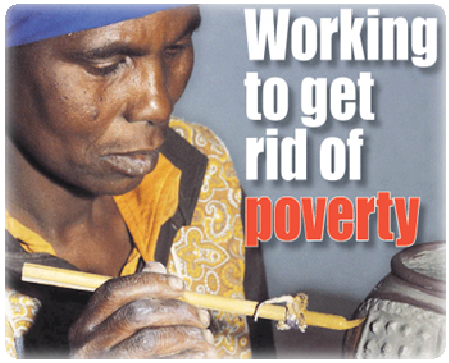
3.1 United Nations Millennium Development Goals (MDGs)

At the United Nations Millennium Summit in 2000, the international community reached consensus on working to achieve eight critical economic and social development priorities by 2015:

- MDG 1: To eradicate extreme poverty and hunger
- MDG 2: To achieve universal primary education
- MDG 3: To promote gender equality and empower women
- MDG 4: To reduce child mortality
- MDG 5: To improve maternal health
- MDG 6: To combat HIV/AIDS, malaria and other diseases
- MDG 7: To ensure environmental sustainability
- MDG 8: To develop a global partnership for development

Meeting the special needs of Africa is one of the key objectives of the Millennium Declaration. In line with several resolutions adopted by the UN General Assembly, the IMO has since the mid-1990s continued to give priority to Africa in the allocation of its technical co-operation resources, taking into account the special needs of the LDCs and SIDS, as well as the particular maritime transport needs of Africa. The MDG Africa Steering Group, launched in September 2007, brings together the leaders of multilateral development organizations to identify the practical steps needed to achieve the MDGs and other internationally agreed development goals in Africa[14].

South Africa has committed to the eight Millennium Development Goals (MDGs) and embraced them into a national set of ten priorities referred to as the Medium Term Strategic Framework (MTSF, 2009–2014) and the New Growth Path.



[14] Source: International Marine Organisation

3.2 Recommitment of Government to the developmental mandate of prioritising social development in economic growth

The recommitment of Government to the developmental mandate is demonstrated by the Medium Term Strategic Framework (MTSF, 2009–2014) and ASGISA.

3.2.1 The Medium Term Strategic Framework (MTSF)

The MTSF (2009–2014) is a statement of government intent. It identifies the development challenges facing South Africa and outlines the medium-term strategy for improving living conditions of South Africans. As a statement of intent, the MTSF will serve as the principal guide to planning and resource allocation across all spheres of government.

The MTSF identifies the following five development objectives:

- Halve poverty and unemployment by 2014;
- Ensure a more equitable distribution of the benefits of economic growth and reduce inequality;
- Improve the nation's health profile and skills base and ensure universal access to basic services;
- Build a nation free of all forms of racism, sexism, tribalism and xenophobia; and
- Improve the safety of citizens by reducing incidents of crime and corruption

Government has renewed its commitment to these key social development objectives in its Medium Term Strategic Framework (MTSF), by including in its strategic priorities the following directly relevant to maritime sector skills planning:

- Speeding up growth and transforming the economy to create decent work and sustainable livelihoods; and
- Strengthen the skills and human resource base.

In relation to strengthening global partnerships, South Africa has rapidly opened up trade, especially to LDCs and developing countries. South Africa is seen as a country characterised by a remarkably stable macro-economic framework. Its major challenge is to increase its economic growth potential. Failure to do so, will limit its ability to address many of the goals set out by the MDG process, major amongst them, the creation of jobs[15].

[15] Source: Millennium Development Goals – Country Report. (2010), p.1-139

3.2.2 The Accelerated Shared Growth Initiative (ASGISA)

In 2004, the South African Government undertook to halve poverty and unemployment by 2014, in its Accelerated and Shared Growth Initiative (ASGISA). To meet its ASGISA targets, the Government estimated that the level of economic growth would need to average 4.5% or higher during the period 2005 to 2009, and 6% or higher during the period 2010 through 2014.

The Accelerated Shared Growth Initiative (ASGISA) of 2006 articulated government's mandate to halve poverty and unemployment by 2014, as well as the means of achieving it (raising economic growth to a consistent 6% per annum). The analysis upon which ASGISA was formulated identified the shortage of skilled labour as a binding constraint to realising its poverty alleviation and job creation goals.

"The single greatest contributors to poverty are unemployment and low paid work. Government's position is clear: the new development and growth path for South Africa requires the participation of all economically active South Africans in productive activity"

Framework for the National Skills Development Strategy, April 2010

The South African economy has grown at an average annual rate of 3.2% between 2005 and 2009, which demonstrates that ASGISA growth targets have not been met. The ASGISA identified the following six binding constraints to the achievement of these overriding economic goals[16]:

1. The volatility and level of the currency, which was felt to deter investors and, during periods of systematic over-valuation, result in sustained current account deficits;
2. An inadequate national logistics system. The limited capacity, lack of competitiveness and high prices of the transport sector were felt to be of concern given South Africa's status as a long-haul destination;
3. Shortages of skilled labour;
4. A highly concentrated domestic economy with little evidence of competition;
5. A high regulatory burden on small and medium businesses, constraining their ability to act as an engine of growth; and
6. Deficiencies in state organisation, capacity and leadership, particularly in economic services and policy.

[16] Source: Millennium Development Goals – Country Report. (2010), p.1-139

3.2.3 The New Growth Path

There is growing consensus that creating decent work, reducing inequality and defeating poverty can only happen through a new growth path founded on a restructuring of the South African economy to improve its performance in terms of labour absorption as well as the composition and rate of growth. To achieve that step change in growth and transformation of economic conditions requires hard choices and a shared determination as South Africans to see it through. The South African Government is committed to forging such a consensus and leading the way by identifying areas where employment creation is possible on a large scale as a result of substantial changes in conditions in South Africa and globally; and by developing a policy package to facilitate employment creation in these areas[17].

The New Growth Path aims to target South Africa's limited capital and capacity at activities that maximise the creation of decent work opportunities. Both macro and micro economic policies are key to create a favourable overall environment and to support more labour-absorbing activities. The main indicators of success will be jobs (the number and quality of jobs created), growth (the rate, labour intensity and composition of economic growth), equity (lower income inequality and poverty) and environmental outcomes.

Achieving Government's goal to grow employment by five million jobs by 2020 can only be realised if all sectors focus consistently on areas that have the potential for creating employment on a large scale. This is referred to as "jobs drivers" in the New Growth Path.

Two key variables will affect the target of five million new jobs, namely, (i) the rate of economic growth and (ii) the employment intensity of that growth – that is, the rate of growth in employment relative to the rate of growth in GDP. Growth must be maximised in a way that it generates more employment, mostly in the private sector.

Stepping up education and skills development[18]

Improvements in education and skill levels are a fundamental prerequisite for achieving many of the goals in this growth path. General education must equip all South Africans to participate in our democracy and economy, and higher education must do more to meet the needs of broad-based development. The growth path also requires a radical review of the training system to address shortfalls in artisanal and technical skills. The draft Human Resource Development Strategy for South Africa addresses these goals. Key skills identified as important economic skills are as follows:

- Engineers: Target at least 30 000 additional engineers by 2014, changing subsidy formulae for universities as appropriate. Strengthen measures to ensure greater and more equitable access to science and maths education at secondary level and expand bridging programmes to tertiary courses.
- Artisans: Target at least 50 000 additional artisans by 2015, with annual targets for state-owned enterprises. SETAs must agree to numerical targets for completed apprenticeships, with systems to track progress, particularly in construction, mining, manufacturing and new industries such as in the green economy. Apprenticeship systems must be reviewed to support broader access.

[17] Source: The New Growth Path: The Framework. Sourced from http://www.info.gov.za/view/DownloadFileAction?id=135748

[18] Source: The New Growth Path: The Framework. Sourced from http://www.info.gov.za/view/DownloadFileAction?id=135748

- Workplace skills: Improve skills in every job and target 1,2 million workers for certified on-the-job skills improvement programmes annually from 2013. Every SETA should aim to facilitate and co-finance training for 10% of the workforce annually. Improve SETA performance by strengthening governance, accountability and administrative systems. SETAs must prioritise identifying and funding the main sector skill needs based on the New Growth Path.
- Further education and training (FET) colleges have a central role in providing important middle-level skills for young people. An immediate goal is to expand enrolment at FET colleges, targeting a million students in FET colleges by 2014. To be effective, however, their graduation rates must also rise significantly. This target will require appropriate resourcing of the FET system.
- Information and communications technology (ICT) skills: The departments of education should ensure that computer skills are taught in all secondary schools and form part of the standard adult basic education and training (ABET) curriculum by 2015. All public servants should also receive ICT training. Achieving this aim urgently requires a plan to train educators, access relevant teaching skills elsewhere and establish computer centres for learners and communities.
- Policy framework: Finalise the National Skills Development Strategy taking into account the needs emerging from the growth path. In addition, the overall supply of highly skilled labour should be increased by continued efforts to streamline the immigration system in ways conducive to the inflow of skills, linked to a skills-transfer programme and an on-going commitment to upgrade domestic education on a broad basis.

3.3 The National Skills Development Strategy (NSDS)

Integrated and coordinated skills planning

A new framework draft has been finalised for the National Skills Development Strategy (April 2010) commits NSDS III (2011-2016) to integrated and co-ordinated planning, optimising the functionality of the skills development system and evidence-based decision making. Not only will NSDS III support the development of the skills base on which the achievement of MTSF goals will depend, but the framework document affirms the necessity of skills planning that is integrated into the breadth of government's economic and social transformation strategy, invoking key policy documents such as the National Human Resource Development Strategy of South Africa; the National Industrial Policy Framework and the Industrial Policy Action Plan; the Anti-Poverty Strategy; the Technology and Innovations Strategy; the HRD Strategy for the Public Sector; and any new sector-specific plans that might emerge. Furthermore the framework document indicates that there will be a mechanism in NSDS III to accommodate cross-sectoral planning where necessary, and that sector skills planning will not be approved if it does not demonstrate that "there has been demonstrable high-level engagement with government and its social partners at the highest level".

Improving the evidence base of skills planning

NSDS III will award greater centrality and credence to the Sector Skills Plans, which are to be compiled in compliance to a more exacting standard, and subject to approval by the Technical Working Group of the HRDSA Council.

3.4 Institutional reform of the skills system initiated under the new Department of Higher Education and Training (DHET)

The year 2010 witnessed a major development in South Africa's Skills Development, Education & Training governance structure, public institutions of learning and institutions of the skills development sector merged into one department, the Department of Higher Education and Training (DHET). Total administration of skills development, including the National Skills Fund (NSF), has moved from Department of Labour (DOL) to DHET.

With the birth of the Department of Higher Education and Training (DHET) public institutions of learning and institutions of the skills development sector is now under one direct authority. The work of 'Skills Development', with its Sector Education and Training Authorities (SETAs) and National Skills Fund (NSF), can now more easily complement that of the colleges, the universities of technology, comprehensive universities and universities, while workplace learning can become the visible supplement to institutional learning and "need no longer be seen as the invisible dimension of learning for those on the road to professional, vocational or other occupational status."

There is another important institutional reform that DHET introduces: whilst historically the public providers were junior partners on the skills development agenda, they are now at centre stage and the need to equip them to play their new role is an urgent national priority. This does not mean that private providers no longer have a role to play. For the duration of this NSDS, priority will be given to upgrading the public colleges, universities of technology and universities so that quality provision can be made accessible to many more learners.

3.5 The increasing focus on maritime in South Africa as a sector with significant growth potential

With more than 95% of South Africa's trade volume seaborne or about 80% in value terms, the country is strategically dependent upon the maritime transport industry[19]. South Africa's commercial ports and established international shipping network have served not only a strategic role of trade facilitation, but have also helped to shape the economic growth and development of the entire Southern African region[20]. South Africa's interests in terms of maritime have predominantly been shipping and seaborne trade. Seaborne trade contributes to approximately 55% of South Africa's GDP towards the economy.

Measured in terms of cargo volumes, South African port traffic doubled from 40 million tons in 1969/70 to 80 million tons by 1977/78, and roughly doubled again to reach 160 million tons by the mid 1990s[21]. By 2002, total cargo handled stood at some 190 million tons (Ports of Southern Africa and Mauritius, 2003), representing roughly 3.5 percent of world sea trade volumes[22]. Due to South Africa's geographic location, substantial hauls are required to link this country to its major international markets and suppliers.

[19] Siko, 1996: 4; Jones, 2004

[20] Chasomeris, 2005

[21] Jones, 2002b: 144

[22] ISL, 2002

Consequently, South Africa accounts for approximately six percent of global tonne-miles[23].

There is a tremendous potential for growth in the maritime sector in South Africa and further chapters highlight the opportunities and areas to be focused on to achieve growth in the sector.

3.6 A global maritime sector skills crisis

Various studies across the world have identified that the pool of qualified and experienced maritime skills has been declining for quite some time. Almost all of these studies focus primarily on seafarers.

The BIMCO/ISF Manpower Update provides the most comprehensive assessment of the global supply and demand for merchant seafarers that is currently available. The 2010 update[24] is based on data collected from questionnaires sent to governments, shipping companies and crewing experts. It also incorporates the views and perceptions of senior executives in shipping companies and maritime administrations, and detailed statistical analysis provided by the Warwick Institute for Employment Research.

Despite the global economic downturn, and the dramatic reduction in demand for shipping services in 2009, while the supply and demand for ratings are more or less balanced, there are still some shortages for officers, particularly for certain grades and for ship types such as tankers and offshore support vessels. However, notwithstanding the challenging trading conditions, levels of training of new entrants seem to have been maintained or increased in many countries compared with 2005.

The worldwide supply of seafarers in 2010 is now estimated to be 624,000 officers and 747,000 ratings. This is based on the numbers holding STCW certificates and is therefore somewhat broader and not directly comparable to estimates in previous studies. It reflects significant increases in seafarer supply in some countries, notably in China, India and the Philippines, as well as in several European nations[25].

Global demand estimates are based on a detailed review of the number, size and type of ships in the world fleet, and revised estimates of manning levels and back-up ratios currently applicable to different national fleets. The current estimate of worldwide demand for seafarers in 2010 is 637,000 officers and 747,000 ratings[26].

These results suggest that the situation in 2010 is one of approximate balance between demand and supply for ratings with a modest overall shortage of officers (about 2%); the implication being there is currently not a serious shortage problem for officers in aggregate. This does not, of course, mean that individual shipping companies are not experiencing serious recruitment problems, but simply that overall supply and demand are currently more or less in balance.

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[23] Jones, 2002b
[24] MANPOWER 2010 UPDATE. The Worldwide Demand for and Supply of Seafarers. HIGHLIGHTS
[25] MANPOWER 2010 UPDATE. The Worldwide Demand for and Supply of Seafarers. HIGHLIGHTS
[26] MANPOWER 2010 UPDATE. The Worldwide Demand for and Supply of Seafarers. Highlights.

Findings from the BIMCO study also show some evidence of continuing recruitment and retention problems, especially in certain segments of the industry such as tankers and offshore support vessels. The study also indicates that any training programme provided must ensure quality is not compromised in the quest for increasing quantity.

It is noted that global desktop research covered both seafaring and non-seafaring skills. However, limitations exist in the data available globally for non-seafaring skills. It is recommended that SAMSA identify think tanks within the maritime sector globally and engage with them to determine challenges that exist within each of the industries identified within the Maritime Sector Skills Development Model (presented in Chapter 4). Such insights could aid comparative analysis.

The summary block below highlights key considerations to direct the maritime skills development strategy:

The implication of trends in the supply and demand of skills:

The South African Government has put in place social development objectives to speed up growth of the economy and strengthen the skills base. The maritime sector has legislative support in terms of skills development legislation to drive the skills development requirements of the maritime sector.

The DHET is a newly formed central entity and will need to be a key partner to SAMSA and TETA. The DHET will need to gain a comprehensive understanding of the skills needs within the maritime sector.

There is a tremendous potential for growth in the maritime sector in South Africa. One area of growth for South Africa's maritime sector is to become a labour supply nation to fill the current global skills gap that exists.

The Maritime Sector Skills Development Model presented in the next chapter provides an indication of the industries within the maritime sector. There are think tanks within the maritime sector globally that could be accessed in a future study to identify challenges globally within each of the industries found within the maritime sector.

4 Findings and Analysis: Modelling the Maritime Sector

"Some sensible conception of maritime skills development activity as a sector will be essential if the intention of elevating South Africa's maritime nation rank is to be realised. The model proposed here is an incremental step towards such a conceptualization"

Skills Development researcher

This chapter responds to the following study objective:

Study objective 1: Conduct a review of the maritime sector in South Africa

There have been limited prior in-depth sector skills studies conducted in the maritime sector in South Africa that have attempted to operationally define the maritime sector skills development value chain. Consequently there was no specific model of the maritime sector skills development footprint that would facilitate the building of a comprehensive skills development strategic plan to direct the growth of skills to elevate the maritime sector as a recognised contributor to South Africa's economy.

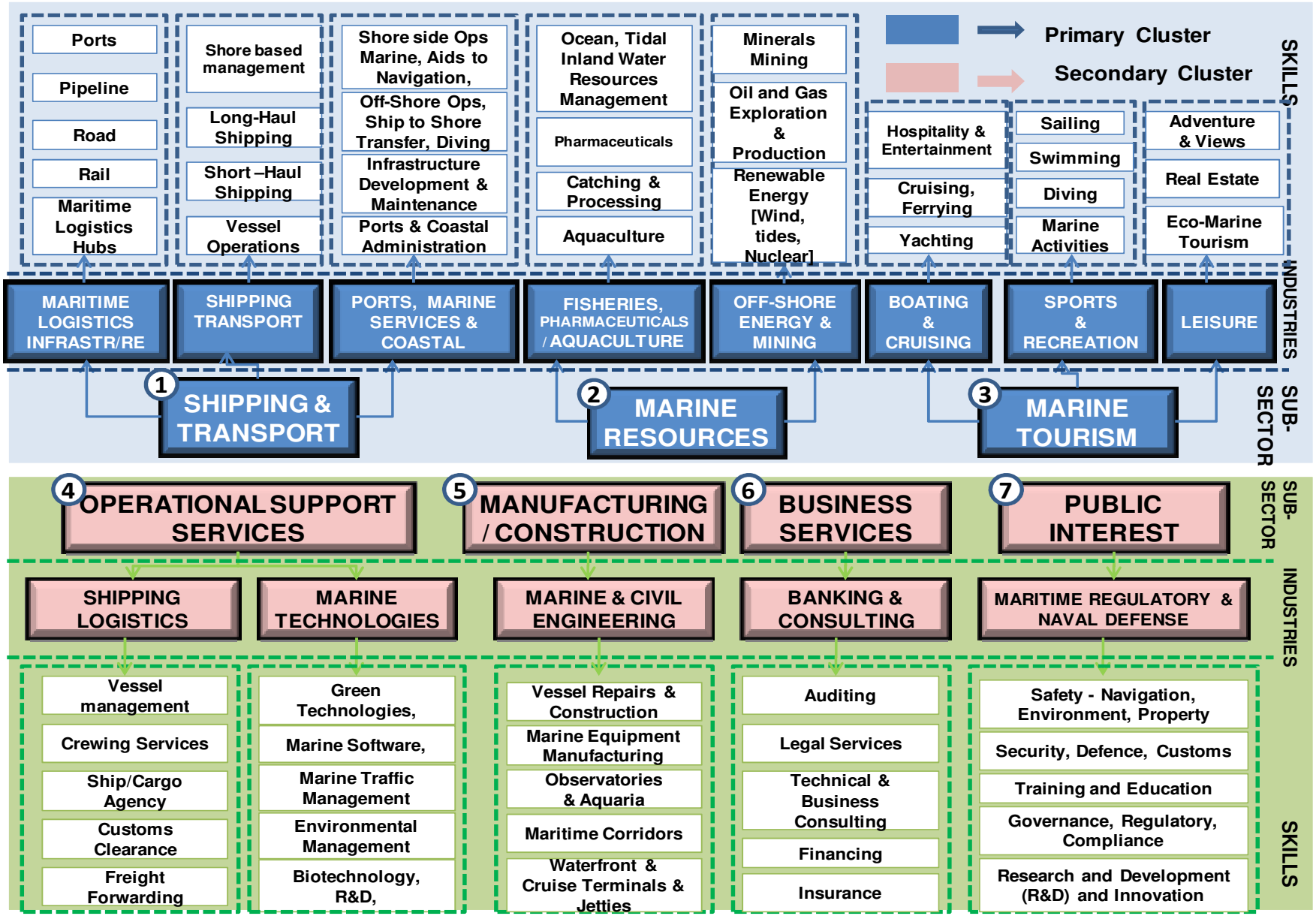
The maritime sector is commonly conceived of as that domain of activity encompassing the merchant marine, specifically shipping transport and ports services. This conception is persistent in the literature, in the frameworks instituted for national and official statistical research, and in the responses of the majority of key informants participating in this study. With the intent of aligning this research exercise with the national skills development agenda, as well exploring economic growth and job creation opportunities more widely along the maritime value chain, the logic of the study dictates that a broadened footprint of the maritime sector should be clearly delineated.

This chapter defines the parameters and nature of the broader maritime sector, considering the full maritime value chain. The maritime footprint described here has as its starting point models of the broader sector, and the shipping industry in particular, developed by SAMSA. The earlier conceptualisation of the maritime sector has however been elaborated on and enhanced by the data obtained during the research process.

Although it is not authoritative, the Maritime Sector Skills Development Model is a valid and reliable reflection of the clusters and pools of skills needs that comprise the maritime sector.

Figure 6 illustrates the broadened maritime skills development sector footprint:

Figure 9: South African Maritime Sector Skills Development Model



4.1 Elements of the Model Developed for this Study

The maritime sector has been divided into seven clusters (referred to as industries), as reflected in Figure 9. The model presented in this chapter was developed from the collation of data from in-depth literature review and desktop analysis as well as back-and-forth engagement with stakeholders across the maritime sector.

Maritime industry clusters represent sub-sectors of the maritime sector. The three primary industry clusters include all those maritime industries that represent the economic foundation of the sector. The secondary Services industry clusters are categories of enterprise that are dependent on the primary industry clusters for economic viability.

As depicted in the above figure, the three primary industry clusters include (1) Shipping and Transport, which is broken down into maritime logistics infrastructure; shipping transport; as well as ports, marine and coastal services; (2) Marine Resources, which are broken down into fisheries, pharmaceuticals and aquaculture; as well as off-shore energy and mining; and (3) Maritime Tourism, which is broken down into boating and cruising; sports and recreation; as well as leisure.

Four secondary industry clusters include (4) Operational Support Services, which is broken down into shipping logistics and marine technologies; (5) Manufacturing / Construction, which is broken down into marine and civil engineering; (6) Business Services, which looks banking and consulting maritime specialised services; and (7) the Public Interest Cluster, which considers maritime regulatory and naval defense.

4.1.1 Primary Industry Clusters

This section describes each primary industry cluster in more detail.

4.1.1.1 The Shipping and Transport Cluster

The Shipping and Transport Cluster is the portion of the sector commonly labelled maritime and would be the usual focus of studies on maritime skills issues. Shipping and Transport is the heart of the world economy and it is certainly the heart of a competitive maritime sector.

Shipping and Transport is comprised of three industries, namely, maritime logistics infrastructure, shipping transport and ports, marine services and coastal administration. The inclusion of the shipping transport and ports, marine services and coastal administration industries into the same cluster is not only justified by convention but by the close integration of the industries in reality.

Maritime logistics infrastructure includes maritime logistics hubs; as well as rail, road, pipeline and ports.

Shipping transport includes shore-based management of the shipping business; long-haul shipping, short-haul shipping as well as vessel operations. The vast majority of traded goods involve a shipping leg in their distribution to market.

Ports, marine services and coastal management currently represent South Africa's primary involvement in the global shipping economy. The capacity and productivity of our ports are the key determinants of South Africa's present and future competitiveness in the global maritime sector - the provision of ports services is currently dominated by the National Ports Authority, a state owned enterprise.

This industry includes shore side operations that include marine and aids to navigation; off-shore operations that include ship to shore transfer and diving; infrastructure development and maintenance; as well as ports and coastal administration.

Outsourcing of certain operational processes such as personnel transport and aspects of regularly scheduled asset maintenance falls within this industry. Longer-term contractual relationships implied by outsourcing may be increasingly relevant in the Shipping and Transport Cluster where there is an emerging tendency for larger shipping lines to start contracting services from providers that have a presence in multiple locations globally[27].

4.1.1.2The Marine Resources cluster

The Marine Resources Cluster includes the primary industries active in exploiting South African and regional marine resources, namely fisheries, pharmaceuticals and aquaculture; as well as offshore energy and mining.

Fisheries, pharmaceuticals and aquaculture includes aquaculture, catching and processing, pharmaceuticals, as well as ocean, tidal inland water resources management.

Within this industry, **Commercial Fishing** is a significant contributor to the South African economy in terms of revenue generation and employment. From the local literature review it was found that of all the industries within the Maritime Sector in South Africa, Commercial Fishing has substantially more detailed economic and sectoral study findings available than could be found for the other industries.

The main commercial stocks fished in South Africa are sardine and anchovy, Cape hake, horse mackerel, rock lobster ("west" and "south" coast species), tunas and shark, loligo squid and a large group collectively referred to as "linefish"[28]. The per capita consumption of fish products in South Africa (7.6 kg in 2007) is relatively low, but close to the average of sub-Saharan Africa (8.3 kg in 2005). Whereas South Africa's coastal communities have traditionally had diets high in fish, much of the inland population (which is significantly higher than at the coast) eat relatively little fish.

[27] Trade Logistics Branch of the Division on Technology and Logistics, UNCTAD. (2009). Review of Maritime Transport. New York and Geneva: United Nations Publication

[28] Food and Agricultural Organisation. January 2010. National Fishery Sector Overview – South Africa.

Fishing contributes primarily to the economies of the coastal provinces with the majority (approximately 90%) of the contribution to the national fishing industry derived from the Western Cape region[29].

The fishing industry in South Africa is given relatively low priority as it only contributes a very small amount to national GDP. The contribution of fisheries to the South African economy (GDP) was approximately USD 323 million in 2008.

Fisheries play a much more important role in the coastal economies. There are no inland commercial fisheries of any significance in South Africa. Recreational exploitation of freshwater fish on inland rivers and impoundments is extensive, with small subsistence fisheries in places. However, most freshwater or inland fisheries are related to a limited number of aquaculture developments.

The demand for fish and related products is high, driven primarily by the export markets. Locally, demand is also high and the country generally absorbs as much as can be supplied. There are no tax incentives or subsidies for South African fisheries.

South Africa has a large recreational fishing sector. The coastline is extensive and recreational fishing activities around the coast vary and have not been concisely quantified – the economic input of the recreational sector is however known to be substantial and relates to not only direct fishing activity but also all the associated downstream industries such as bait and tackle, boat construction and maintenance, accommodation etc.

The main recreational sectors include rod and line (beaches and estuaries); ski-boat (small harbours and beach launches) – line fish species including tuna; recreational diving – spear fishing; recreational diving for west coast and natal rock lobster; and recreational hoop nets for west coast rock lobster (257 tonnes allocated for 2009/10) [30].

The **offshore energy and mining industry** is operationally limited in South African territorial waters - it is of growing regional significance and an important strategic consideration for the future of the South African maritime sector. This industry includes minerals mining, oil and gas exploration and production, as well as renewable energy (wind, tides, nuclear, etc.)

[29] Karaan, M. and Rossouw, S., 2004. The Microeconomic Strategy Project:: A baseline assessment of the fishing and aquaculture industry in the Western Cape. Study commissioned by the Western Cape Provincial Government. In: Hara, M, de Wit, M., Crookes, D. and T. Jayiya. Working Paper 6: Socio-economic contribution of South African fisheries and their current legal, policy and management frameworks. Institute for Poverty Land and Agrarian Studies.

[30] Food and Agricultural Organisation. January 2010. National Fishery Sector Overview – South Africa.

Sub-saharan Africa is one of the fastest growing and highest potential oil and gas exploration and production areas in the world. It is still in the relatively early stages of what promises to be a huge opportunity to supply the services and equipment that will unlock these resources. Over the coming decade hundreds of billions of dollars[31] will be spent exploring, developing and operating oil and gas fields. After that a decades-long tail of maintenance and operations activity will result in hundreds of billions of additional expenditure.

Within South Africa, upstream oil and gas activity is poised to grow strongly over the next decade with significant opportunities in Mossel Bay, the Orange River Basin off our northwest coast and the onshore shale gas opportunity in the Karoo[32].

As the major economy in the region, underpinned by good infrastructure, a solid base of engineering capability and effective institutions, South Africa is well positioned to become a major hub for the supply of oil and gas services and equipment to the region, which currently imports almost all of what it needs from Europe, North America and Asia.

4.1.1.3 Marine Tourism

There have been high levels of investment in the South African Marine Tourism sector and infrastructure investment in coastal tourist facilities. As a result, the Marine Tourism industry is of growing importance.

The **Boating and Cruising** cluster includes yachting, cruising, ferrying, as well as hospitality and entertainment. In terms of Cruising, Southern Africa is gaining ground as a cruise destination. South Africa supplies labour to the international cruise industry in terms of non-seafaring crew. Passenger liner cruises are also becoming an increasingly attractive vacation option for South Africans.

Cruise Market Watch[33] states that 'Total worldwide cruise capacity at the end of 2009 was 383,093 passengers (a 6% increase over 2008) and 245 ships. Annualized total passengers carried worldwide are estimated at 16 million for 2009, a 2.6% increase over 2008. Of these approximately 60 per cent are US citizens and 25 per cent are Europeans'. The larger cruise vessels carry several thousand passengers and crews of several hundred persons. As an illustration of the number of passengers that can be carried in one trip; the second biggest cruise line RCL has ordered a vessel with a capacity of 5400 passengers to be delivered in the fall of 2009. The American market is the largest cruise market. The Mediterranean and Asian markets are developing fast, however. A special segment is the exploration markets in Arctic and Antarctic waters. Perhaps these should be further investigated by South Africa.

The **Sports and Recreation** cluster includes marine activities, diving, swimming and sailing.

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[31] A recent study by Marintek estimated that the upstream industry in Angola and Nigeria alone would spend USD150 billion in the 2009-2013 period; USD70 billion of this would be in the so-called MMO (maintenance, modifcations, operations) activities that generally need to occur on the continent and occur across the mutli-decade life of projects.

[32] South African Oil and Gas Alliance. (Feb 2011). Upstream Oil and Gas Services & Equipment Sector Plan for inclusion in 2011/12 – 2013/14 Industrial Policy Action Plan. Prepared by Warwick Blythe

[33] Cruise Market Watch (2009) http://www.cruisemarketwatch.com/blog1/

The **Leisure** cluster includes eco-marine tourism, real estate, as well as adventure and viewing (such as whale watching and shark cage diving).

4.1.2 Secondary Industry Clusters

This section describes each secondary industry cluster in more detail:

4.1.2.1The operational support services cluster

The Operational Support Services cluster includes shipping logistics as well as marine technologies.

Shipping logistics includes vessel management, crewing services, ship/cargo agency, customs clearance and freight forwarding.

Marine Technologies is inclusive of green technologies, marine software, marine traffic management, environmental management as well as biotechnology.

4.1.2.2The Manufacturing and Construction cluster

The Manufacturing and Construction Cluster includes all enterprise activity committed to the supply of **marine and civil engineering** to the Primary Industry Clusters. The cluster includes waterfront and cruise terminals and jetties; maritime corridors; Observatories and Aquaria; Marine Equipment manufacturing; as well as Vessel repairs and construction.

As a whole the industry assumes a recognisable retail component.

South Africa has an important boat building industry with a strong export component comprising 85% of production. South Africa's Boat Building industry primarily services the leisure market. Boating includes two segments: the first offering charters and marina based services; the second representing a significant boat building industry. Boat building is included in the Leisure Cluster because the major portion of economic activity is committed to the production of vessels for the leisure market, with the minor portion producing boats for commercial purposes[34].

The annual boat building turnover is in the region of R1.2 billion and the industry employees approximately 4500 people.

The boat building industry produces commercial and leisure craft, as opposed to ship building and repair which fills a different niche market. Hull construction is primarily composite fibreglass/carbon fibre. However, the inflatable boats and aluminium boats are a significant contributor to the industry. Wooden hull construction is very limited due to demand.

[34] CBTI. (2010)

Boat construction incorporates a full range of skills and associated services including: sail making, mast construction, rigging, upholstery, welding, engine installation and maintenance, electronics, hydraulics, electrical, plumbing, systems, air conditioning, fitting, marine equipment and installation, interiors, carpentry, flooring, sea trials. In addition to this, a boat builder will need generic administration and managerial skills: finance, human resources, project management, materials/components ordering, stores, import/export, design, etc[35].

4.1.2.3The Business Services cluster

The Business Services Cluster includes the Banking and Consulting industry.

Banking and Consulting is inclusive of **auditing, legal services, technical and business consulting, financing and insurance**. Globally there is a sizeable community of professionals providing these typical business services to the maritime sector. All of these are characterised by specialisation in maritime. Indications are that such maritime specialised professionals tend to operate multi-nationally and that the number operating out of South Africa is relatively small.

4.1.2.4The public interest cluster

The Public Interest Cluster incorporates Maritime Regulatory and Naval Defence as an industry.

Maritime Regulatory and Naval Defence includes publicly orientated maritime functions and services. The industry is comprised of relevant government departments and agencies, and educational institutions. It includes safety in terms of navigation, the environment and property; Security, Defence and Customs; Training and Education; Governance (organisations such as the Navy and the National Search & Rescue Institute), Regulatory and Compliance; as well as Research and Development (R&D) and Innovation.

The summary block below highlights key findings to direct the maritime skills development strategy:

A broadened maritime sector skills development footprint:

The maritime sector skills development model recognises that the maritime sector is larger than the shipping industry. The maritime sector is comprised of primary and secondary industry clusters and can be divided into seven clusters.

When considering a national skills development agenda that explores economic growth and job creation opportunities, it will be beneficial, as a starting point to developing the skills development strategic plan, to utilise the broadened footprint of the maritime sector value chain presented as a result of this study.

[35] Cape Town Boatbuilding and Technology Initiative (CBTI). (2010). Boat Building Sector Skills Analysis

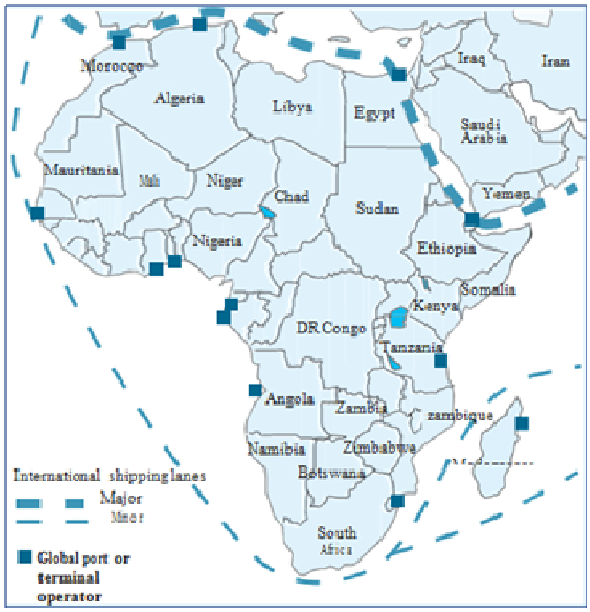
5 Findings: Trends influencing Maritime Skills

"With almost 91% of continental trade by volume being transported by sea in 2008 - Africa is the only major region in the world that does not have its own maritime policy or strategy. African governments need to take control of their own maritime assets and create a co-ordinated policy framework to drive economic development"

Extract from discussion document by the Secretariat

Source: UNCTAD

Brenthurst Foundation



This chapter responds to the following study objective:

Study objective 2: Explore trends in the supply and demand of maritime skills globally and consider opportunities for South Africa in light of global trends

The findings from this chapter present the existing and emerging trends in the global supply and demand of maritime skills abroad, looking at maritime nations as well as development in Africa. Trends in the supply and demand of maritime skills globally have been identified. Refer to Annexure A for a reference list of sources reviewed as background to this Chapter.

Section 5.1 depicts the global contribution of the shipping industry and reflects on import and export in Africa, as well as the global maritime shift in trade routes. Section 5.2 reflects on the global trends relating to the supply and demand of skills.

Section 5.3 exhibits some of the solutions presented by maritime nations in response to skills development challenges within the maritime sector. Annexure E elaborates on the section by provided examples of global solutions to the maritime skills shortage and an overview of global maritime education and training: examples of the UK, Australia, China, Singapore, Greece and India.

In section 5.4, implications for South Africa are considered in light of global and local trends.

5.1 The Global contribution of the Shipping Industry

Maritime sector skills studies tend to focus on the shipping cluster and either exclusively on seafaring occupations[36] or a slightly broader skill set within shipping[37]. The shipping cluster is merely one of the three primary industries reflected in South Africa's skills development maritime model presented in chapter 4. The other two clusters include the Resources Cluster, which includes Commercial Fishing and Off-shore Oil, Gas and Mining, and the Leisure Cluster, which includes Boating and Boat Building, Cruising and Marine Tourism.

Shipping is a key industry within the maritime sector and it is this industry that underpins the international economy. More than 90% of global trade by volume is carried by sea[38]. It is almost impossible to quantify the value of volume of world seaborne trade in monetary terms. However, the United Nations Conference on Trade and Development estimates that the operation of merchant ships contributes about US$380 billion in freight rates within the global economy, equivalent to about 5% of total world trade[39].

Despite its pivotal contribution, of all the sectors that make up the global transport infrastructure, shipping has arguably the lowest public profile and the least representative public image[40].

UNCTAD (2009) states that since the early 2000s, the shipping industry and global seaborne trade expanded at healthy rates, benefiting in particular from the boom in trade driven by the economic expansion of emerging, dynamically developing economies, in particular China and India. The buoyant markets that emerged, and the sustained record-high freight rates made the world almost forget the cyclical nature of shipping and its notorious volatility. However, in the wake of the global economic downturn and sharp decline in world merchandise trade since the last quarter of 2008, the maritime sector is experiencing a challenging period. The vulnerability of shipping to broader market conditions is illustrated by the significant contraction in trade volumes of the early-1980s recession, and also by the slowdown in the growth of global seaborne trade in the late 1990s when the Asian financial crisis erupted. At the same time, these precedents also underscore the ability of shipping and seaborne trade to rebound and recover from economic downturns and reduced trade[41].

Having identified the shipping industry as the focal industry within the maritime sector globally, it is also relevant to determine Africa's contribution.

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[36] For example the Australian Maritime Safety Authority Maritime Skills Availability Study, 2002

[37] For example the UK Maritime Alliance The Maritime Sector Labour Market Assessment, 2005.

[38] IMO. (2006)

[39] Trade Logistics Branch of the Division on Technology and Logistics, UNCTAD. (2009). Review of Maritime Transport. New York and Geneva: United Nations Publication

[40] IMO. (2006).

[41] Trade Logistics Branch of the Division on Technology and Logistics, UNCTAD. (2009). Review of Maritime Transport. New York and Geneva: United Nations Publication

5.1.1 Shipping in and around Africa

"The offshore industry in Africa is growing"

Stakeholder interviewed during this research

With the recession, all industries performed more poorly, with the exception of the offshore industry. A stakeholder interviewed during this research indicated that "*the offshore industry in Africa is actually growing*". The section below considers best-performing African countries and looks at possible reasons for the increase in the growth of the offshore industry in Africa.

Import and export in Africa

The UNCTAD study indicates that the best-performing African countries in terms of GDP growth are the resource-rich exporting countries. As a continent, Africa's share of global trade is 2.7%. Africa's main trading partners are the European Union (accounting for approximately 40 % of exports) and North America (25 % of exports). The leading African exporting countries are Algeria, Nigeria and South Africa. Together, these three countries accounted for an export volume of $195.5 billion or 1.9 % of world merchandise trade in 2007.

The major importing countries in the region are Algeria, Egypt, Morocco, Nigeria, South Africa and Tunisia. In total, they accounted for an import volume in merchandise trade of $225.9 billion or 2.3% of world merchandise trade in 2007[42].

South Africa is one of the leading African countries in terms of maritime transport; hence the need for trade implies the need for skills.

[42] Trade Logistics Branch of the Division on Technology and Logistics, UNCTAD. (2009). Review of Maritime Transport. New York and Geneva: United Nations Publication

Global maritime shift in trade routes

The following trends are applicable:

- **Constraints in the Suez impact ships moving past South Africa**: Physical constraints which include shore-side facilities and infrastructure hamper activity at ports. This has been the case at the Suez Canal, which has influenced an increased number of ships taking the longer route around the Cape of Good Hope. Social, legal, political and economic factors can also be constraints to maritime sector activity in a country[43].
- **The new geography of trade** (e.g. South—South trade, changes in the composition of trade, and a larger share of trade in parts and components) reflects a marked shift in the global maritime economy towards developing regions. In 2008, 60.6 % of goods loaded in the world originated in developing regions. A total of 49.7 % of global seaborne imports were received at developing economies' ports[44].

  Over 86 % of crude oil is exported by sea globally and 55.3 % of total world exports of petroleum products originated in developing economies. In terms of goods unloaded, ports in developing economies accounted for 55.1 % of world dry cargo imports, 43.4 % of world petroleum products, and 37.2 % of crude oil[45].

5.2 Global trends in the supply and demand of skills

A number of trends and key issues can be identified globally across international skills studies. These trends include:

- **Increased age of maritime professionals**: The average age of senior officers continues to increase, which raises a concern for where the next generation of senior officers will come from. There is a dependence on aging officers in the maritime sector. Without adequate numbers of well-trained and experience replacements, the maritime sector could be impacted severely.

Global shortfall of seafarers: The current estimate of worldwide demand in 2010 is 624,000 officers and 747,000 ratings. The current estimated worldwide demand for seafarers is 637,000 officers and 747,000 ratings[46]. Hence, BIMCO study results suggest that the situation in 2010 is one of approximate balance between demand and supply for ratings with a modest overall shortage of officers (about 2%; a shortfall of 13,000); the implication being there is currently not a serious shortage problem for officers in aggregate. This does not imply that individual shipping companies are not experiencing serious recruitment problems, but simply that overall supply and demand are currently more or less in balance

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[43] *Suez Canal - 13th Port of Call –Sunshine Route*

[44] Trade Logistics Branch of the Division on Technology and Logistics, UNCTAD. (2009). Review of Maritime Transport. New York and Geneva: United Nations Publication

[45] Trade Logistics Branch of the Division on Technology and Logistics, UNCTAD. (2009). Review of Maritime Transport. New York and Geneva: United Nations Publication

[46] MANPOWER 2010 UPDATE. The Worldwide Demand for and Supply of Seafarers. HIGHLIGHTS

- **Retaining maritime skills**: There is a global need to reduce wastage by reducing the number of seafarers who leave the industry each year to pursue careers in other industries. This refers to both cadets and qualified maritime professionals.
- **Decreased number of recruits**: In many countries, the number of recruits into the industry has declined. With the world trading fleet increasing, the industry could be confronted with a significant skills deficit, hampering the maritime sector globally. A declining merchant fleet globally seems to have influenced a declined number of cadets on ships.

  Studies suggest that officer recruitment and training levels need to improve. The Australian skills study illustrates maritime nations who have become maritime labour suppliers. The table below provides examples of major suppliers of officers to foreign ships. It is important to note that in global studies that refer to labour supply nations, South Africa does not feature.

Table 4: Examples of major suppliers of officers to foreign ships (2005)[47]

Flag	Supply	Own Demand	Surplus
China	117 800	26 447	91 353
Philippines	49 430	7 251	42 179
India	12 000	3 748	8 252
Italy	14 500	8 507	5 993
Indonesia	14 510	8 743	5 767
UK	11 000	5 264	5 736
Poland	5 500	2 724	2 776
Canada	4 557	2 151	2 406
Pakistan	2 400	273	2 127
Bangladesh	2 554	1 102	1 452
Australia	1 400	397	1 003

Currently, figures combined with Africa and Latin America show a shortage of 90 officers in 2010.

- **Changing nationality of seafarers**: There has been a trend towards the changing nationality of seafarers: Seafarers seem to be coming from the Far East rather than from the key maritime nations around Europe, Japan and North America. As depicted in the Table above, China and the Philippines are currently seen as the world's maritime human resource hubs.

[47] Trade Logistics Branch of the Division on Technology and Logistics, UNCTAD. (2009). Review of Maritime Transport. New York and Geneva: United Nations Publication

- **Limited management skills**: There is a limited supply of officers, including deck officers and engineers at junior and senior levels.
- **Partnerships**: Maritime nations agree that partnerships are key to getting a sector to move in the same direction. For example the United Kingdom is focusing on partnerships between their Government and trade unions to formally commit to training[48].
- **Poor quality of shipping services when using non-seafarers and foreign nationals**: In terms of global trends, a further finding is that the loss in quality of services is explicitly associated with employment of foreign trained seafarers without the preferred breadth of local knowledge, as well as the training of non-seafarer candidates. Foreign nationals or non-seafarer trained professionals are perceived to provide a lower and unacceptable quality in the delivery of shipping services, especially in Australia[49].

  A number of research studies have explored the demand for shore-based personnel with seafaring experience[50]. For shore-based employment of personnel with seafaring experience, the more closely related the employment sector is to the actual operation and safety of a ship, the greater need there is for shore-based personnel to have valid maritime related qualifications[51].
- **Technology**: Technology has been identified as important for major development in the maritime sector, specifically in the shipping industry cluster. A hindrance to maritime countries is either (i) not staying abreast of technology and introducing technological advancements to the countries maritime activities, or (ii) not upskilling maritime sector professionals to use new technology within the sector, creating a skills shortage[52].

[48] Lewarn, B. (2009). *A review of some solutions to the shortage of maritime skills,* Occasional Paper, Australian Maritime College (AMC). Launceston: Tasmania

[49] Thompson Clarke Shipping Pty Ltd. (2002). Maritime Skills Availability Study presented to the Australian Maritime Safety Authority.

[50] British Shipping: Charting a New Course, 1998; UK Independent Enquiry into a Tonnage Tax, 1999; Seafarers and the Land Based Jobs Market, 1999

[51] Thompson Clarke Shipping Pty Ltd. (2002). Maritime Skills Availability Study presented to the Australian Maritime Safety Authority.

[52] Trade Logistics Branch of the Division on Technology and Logistics, UNCTAD. (2009). Review of Maritime Transport. New York and Geneva: United Nations Publication

5.3 Solutions presented by maritime nations in response to skills development challenges

The maritime community internationally is aware of the skills deficit in the sector. This section highlights interventions considered by maritime nations that could add value if applied by other maritime nations that are not taking these to their advantage.

It is noted that these solutions focus primarily on sea-going skills. International studies make little or no mention of other skills within the maritime sector. Hence, recommendations in this study go broader to identify possible solutions to South Africa's skills development challenges for the maritime sector, which are broader than seafaring.

The following solutions could be identified by maritime nations in response to skills development challenges:

- **Creating and nurturing international partnerships**: The International Maritime Organisation (IMO) has taken up the cause of addressing the shortage in seafarers by collaborating with a number of international bodies to encourage governments and industry to take concerted action. The collaborating bodies include the BIMCO, ICS/ISF, INTERCARGO and INTERTANKO and the International Transport Workers' Federation. The generalised nature of the global advocacy campaign is to mobilise governments and private enterprise to attend to the problem and develop localised innovative solutions.
- **Maritime awareness campaigns**: The IMO developed a campaign document in 2008, in which the shipping industry is urged to take the lead and do more to promote maritime awareness through media. Governments are asked to give greater prominence to the maritime sector, by doing more to support and encourage the shipping industry in any initiatives it takes to enhance its image.
- **Maritime sector retention strategies**: There is a high level of wastage on prospective maritime professionals who have completed maritime education (theory) and cannot find a berth[53]. A berth is a space in a ship to let a learner acquire practical training. It is similar to an internship required as practical experience to receive a Masters degree. Trained candidates who cannot find a berth are typically lost to the industry because they are unaware of alternative career pathways within maritime. A number of initiatives in leading maritime nations seek to make seafaring more attractive by creating coherent career pathways which incorporate both seafaring and on-shore employment. These interventions recognise the fact that a majority of seafarers who move ashore remain within the maritime sector. If coherent career paths can be offered through suitable training and enhanced possibilities for job mobility across the maritime sector, seafaring careers become that much more attractive to prospective candidates. The programmes are characterised by proposals focussed on:

[53] Lewarn, B. (2009). *A review of some solutions to the shortage of maritime skills,* Occasional Paper, Australian Maritime College (AMC). Launceston: Tasmania

- Creating a pattern of professional education integrating a university first degree, professional training, work experience, professional registration and the option of higher degrees, along the same lines as other professions such as medicine, architecture, law and so on;
- Creating a pattern of professional career progression integrating seafaring and onshore employment into a lifelong progressive path that offers age appropriate career choices, post experience higher university degrees, and senior management positions.
- The seafarer career path approach primarily aims to improve the attractiveness of seafaring by linking it to shore based maritime employment.
- Another important aspect in terms of retention is financial incentives to remain in the maritime sector.
- Retention tends to focus on financial incentives to retain seafarers at sea and keeping maritime skills in the broader maritime industry by improving career prospects. These approaches include:
- Providing loyalty bonuses for seafarers to remain at sea for 'x' years (with financial penalty for leaving early).
- Improving the professional recognition and treatment of seafarers, as well as providing adequate employment conditions.
- Sponsoring training to progress a career within a company.
- Supporting career progression, sea, sea to shore, and ashore as part of the employment package.

- **A central database of the potential and qualified maritime skills pool**: An example of this is the Australian Ship owners Association (ASA) has developed an online application system, SeaRecruit, which registers people interested in a maritime career. It is intended to provide a single point of contact for all people pursuing a career at sea and will disseminate information about the industry and careers on offer. Employers have direct access to this database of candidates. Importantly, SeaRecruit allows already qualified or partly qualified persons the ability to register and will provide clear advice regarding what they would need to do to upgrade their qualifications. Employers have the benefit of finding qualified skilled candidates without any effort, making placement of qualified seafarers in their career of choice a reality.

  By having all interested people registered in a single place ASA is able to provide advice regarding alternative avenues within the maritime sector.

- **Initiatives to increase the quality of shore-based skills**: In an attempt to increase the quality of shore based maritime sector skills, a traineeship program was recently implemented in Norway by the Norwegian Ship owners Association (NSA). The 'Maritime Trainee' program recruits newly qualified students with a master's degree in economics, technology, law, or equivalent qualifications from maritime university colleges. The intervention involves a number of companies joining forces to mount a program offering trainees great breadth in both their training and networking opportunities. Equally, the trainees gain broader insights into the entire maritime industry than is possible from a traineeship with a single company. The Maritime Trainee scheme currently comprises more than twenty enterprises from across the entire maritime industry: shipping companies and rig operators, shipyard and equipment industry, shipping-related services in classification, banking, brokerage and legal services. The ultimate aim is for the trainees to qualify for key positions in the industry.

- **Government training subsidies**: The literature review conducted shows that several countries provide government assistance for maritime training. These include the United Kingdom, Hong Kong, Germany and Ireland and further information on government assistance is contained in Annexure E. A variety of approaches are evident including assistance to the trainee, assistance to the training provider, assistance to the employer, and linking training requirements to beneficial commercial environments such as a tonnage tax regime. The mechanisms used to deliver this assistance vary from the simple to the complex depending upon the aim to be achieved. Three examples of government subsidisation are provided:

  The UK instigated a training support scheme when it implemented its strategy for reviving the British shipping industry. The support for maritime training scheme (SMarT) was created by amalgamating the Government Assistance for Training (GAFT) scheme and the Development of Certificated Seafarers (DOCS) scheme. It provides support for four areas of training, namely:

  - SMarT 1: training for first seaman's Competency Certificate.
  - SMarT 2: onshore training for second level seaman's Competency Certificate.
  - SMarT 3: onshore training to upgrade ratings' skills.
  - SMarT 4: onshore training for officers in line with the Amended STCW Convention.

  Under the SMarT scheme, the UK Department for Transport through the Marine and Coastguard Agency (MCA) administers financial assistance to training providers for the training of officers and ratings. The support available presently amounts to roughly half of the cost of training provided by maritime colleges. In 2007–2008 the scheme cost GBP 10.835 million, which was a 10% increase on the previous year due to a further increase in the numbers undergoing training (MCA 2008, p. 57).

  The Irish approach, which provides government grants to cover the costs of training both ashore and at sea, seeks to attract new entrants and encourage ship operators to provide training berths.

In Hong Kong it is recognised that some seafaring experience is a valuable precursor to working in the shore-based maritime industry. In order to enhance the supply of local qualified personnel with sea-going experience to work in the maritime industry, the Hong Kong Government, with the full support of the Hong Kong Maritime Industry Council, set up the Sea-going Training Incentive Scheme in 2004.

For more examples of countries where governments provide financial support, refer to Annexure E. The Annexure also provides examples of whole training system solutions for selected maritime nations, including the United Kingdom, Australia, China, Singapore, Greece, and India.

- **Taxpaying benefits**: Global maritime skills studies refer to taxpaying benefits to increase training of maritime scarce skills[54]. The inextricable linking of the tonnage tax regime with training obligations has assisted the UK in reducing its maritime skills shortage by increasing the number of cadets undergoing training. Seafarer training is a key element of the UK tonnage tax, which imposes a minimum training obligation on companies entering the scheme. This is to train one officer trainee per year for every 15 officer posts in the company's effective officer complement. The obligation is cumulative and covers each trainee for up to three years (House of Commons 2007a). If a company is not able to train enough cadets to meets its core training commitment, it has to make payments in lieu of training to the Maritime Training Trust (MTT). The MTT allocates the money received to promote UK based seafarer training. In 2005, the tonnage tax training penalty stood at £7,000 per annum or £24,000 per cadet placement. The UK twin approach which links tonnage tax benefits to training obligations, and provides financial support for training providers, has been successful in increasing the annual intake of cadets; still it appears that the numbers are still insufficient to meet the demands of the maritime skills base. Nevertheless, it is evident that without government commitment and investment any turnaround would have been almost impossible.

- **Incentives to grow the number of ships on a country's register**: This is linked to the above (taxpaying benefits). Increasing the number of ships on a country's register, by using the right incentives to attract ship operators, can increase the number of training berths available. As part of their tonnage tax regime, some countries including the UK and Ireland link a requirement to provide training berths to the incentives used to attract additional ship operators. Well-tried and tested incentives to attract ship operators include:

- **Tonnage tax**: This is a tax based on the tonnage of a vessel, rather than the income it earns. This means that an operator that invests and registers a ship under the national flag can opt into the tonnage tax regime, thus creating certainty and a lower rate of tax which ensures the ship is more internationally competitive.

- **Second register**: This is sometimes referred to as a country's international register. The aim is to minimise the loss of tonnage from a flag by effectively encouraging a ship owner to remain under the auspices of the state while benefiting from a number of enticements such as lower taxation and less regulated crewing requirements (Alderton 2004, pp. 29-32).

- **Financial incentives**: These are often referred to as subsidies and may be direct and/or indirect in nature. Incentives include accelerated depreciation (which lowers taxable income) and cabotage (which reserves coastal trade for national flag shipping, thus protecting it from international ship operators with lower cost structures).

5.4 Implications for South Africa, based on global trends

There are a number of implications that may potentially present opportunities for South Africa when considering global trends. These include:

- **Shortfall in supply of seafarers**: There is a shortfall in the supply of seafarers globally. The shortfall in supply of seafarers in first world markets offers potential employment opportunities for South African seafarers, particularly those intending to advance their careers from offshore to shore-based employment.

  The analysis instrument supports this finding – all stakeholder groups interviewed agreed that there is a shortfall in the supply of seafarers. As quoted:

  "People with the right qualifications or certificates are in short supply".

  This implies that there is an opportunity for South Africa to upskill people for use locally and abroad, provided the quality of training meets international standards and partnerships are developed internationally to absorb the supply of qualified maritime professionals.

  Although South Africa's theoretical training is recognised internationally, becoming a labour supply nation is not possible unless South Africa leverages the right partners to ensure students complete their practical component through obtaining berths.

- **South Africa as an English-speaking nation**: Fewer European youth are choosing maritime careers. There is a high dropout rate from maritime education and training. Youth perceive off-shore seafaring jobs as socially and financially unattractive compared with positions on-shore. An EU statement released in 2002 claimed that shore-based positions in EU firms seeking personnel with seafaring experience are not easily filled due to, amongst other reasons, language differences. South Africans' English language abilities make them preferred candidates for such positions.

- **Remuneration**: EU ship owners are replacing seafarers from the EU with non-EU labour to lower their wage costs. This provides an opportunity to South Africans who still earn more abroad because of favourable exchange rates.

- **Recruitment**: The recruitment for coastal pilots for maritime nations is ideally based on the criteria of those holding valid certificates in navigation. South Africa's certification meets the required international convention standards.

- **Aging workforce**: If an aging workforce is a current future threat to the industry, this presents an opportunity for South Africa in terms of youth employment.

As trade volumes rise to Africa, it is even more important for African ports to improve cargo-handling operations. While most African ports can handle containers, their cargo-handling operations will remain less efficient if special container cranes are not used[55].

- **Quality Training**: The high quality and standards of South African maritime education and training (MET) specifically offered by CPUT and DUT have resulted in the countries MET being given White Status by the IMO. White Status refers to a list of countries (the white list) that are in compliance with the revised STCW (the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers) as amended, which entered into force on 1 February 1997. The amended Convention sets out clearly defined minimum competency requirements for all seafarers and takes into account developments in technology since the original 1978 Convention was adopted. Being listed as having White Status by the IMO provides credibility for a country and implies that they are perceived as acceptable in terms of applying the standards required. If a country loses their White Status, they will fall into the Grey List or the Black List in term of status.

  As a result South African certified seafarers are highly sought after in the global maritime sphere. The opportunity exists to market South Africa to the rest of the world as a high level skills hub for the maritime sector.

- **Incentives to grow the maritime sector**: Recommendations were made during interviews with the industry to consider incentives to grow the maritime sector. As quoted,

> *"South Africa needs to look at things like labour relations – our labour legislations needs to align with the global supply of seafarers".*

  By benchmarking best practices of other maritime nations, South Africa could identify incentives to grow our maritime sector.

- **A national maritime database**: One solution presented by Australia in response to skills development challenges (contained in Section 5.3) assists Australia to identify and interact with potential and qualified maritime cadets. The analysis instrument highlights the need for a database to assist with skills supply and demand as well as with skills development. As quoted:

- "There is a great need for a national maritime database where we can see all the numbers and skills supply and demand. I do not know of any monitoring and evaluation of skills development in the sector. I also don't know of any tracking system of seafarers or people leaving the industry".

[55] Thompson Clarke Shipping Pty Ltd. (2002). Maritime Skills Availability Study presented to the Australian Maritime Safety Authority.

"We need to be learning from models of other maritime nations to see why they are preferred"

Maritime stakeholder interviewed during this study

The summary block below highlights key considerations to direct the maritime skills development strategy:

The implication of trends in the supply and demand of skills:

- **The dependence by African countries for foreign trade makes the quality, efficiency and cost-effectiveness of maritime transport crucial factors in the continent's competitiveness. Increased trade implies the need for high-quality skills in the maritime industry to remain competitive.**

- **The growth of port infrastructure with its ancillary support systems to handle future cargo, will have a direct impact on increased maritime activities and hence the uptake of skills. The uptake of skills (demand) requires that skills are developed for this purpose (supply).**

Key findings and recommendations based on global trends:

- **The global shortfall of seafarers and increased age of maritime professionals is of great concern to the global maritime sector and efforts are being made by maritime nations to address this. Along with the shortfall, there are a decreased number of recruits into the maritime sector and therefore the increased need to attract and retain maritime sector skills. It will be imperative for our maritime sector to determine how other maritime nations have become major labour suppliers so that the maritime skills development strategy is aligned to international requirements for South Africa to become a competitor in the supply of maritime skills. There is a local and global shortage for seafarers in off-shore and on-shore positions.**

- **Management skills were highlighted as limited in the sector with a need to develop these types of skills.**

- **Shore-based skills are of a higher quality when qualified seafarers are recruited for these positions. Reliance on non-seafarers leads to a reduction in quality of services provided. It costs a great amount of money to produce qualified seafarers, however, it is necessary.**

Recommended priority focus areas to inform South Africa's maritime skills development strategy:

- It is recommended that as a first next step, stakeholders conduct a study to determine the feasibility of training seafarers for global supply. Learnings can be taken from global solutions brought forward by maritime nations. These include:

- Creating and nurturing local and international partnerships will be key to growing the industry. Partnerships are regarded as key to getting a sector to move in the same direction.

- Conducting maritime awareness campaigns.

- Developing maritime retention strategies by focusing on creating integrated learning programmes for the sector, coherent career pathing and financial incentives to retain maritime skills.

- Because maritime is an international industry, it is important that maritime qualifications meet international convention standards.

- South Africa should spend a concerted effort benchmarking against leading global maritime nations to identify the factors facilitating their competitive advantage.

- The increased demand of seafarers can only be accommodated if recruitment and training are increased.

- To be a leading maritime nation, the South African maritime sector will need to develop a national maritime database to provide a single point of contact for people pursuing a maritime career.

- Introduce government training subsidies in line with those provided by leading maritime nations that South Africa aspires to compete with in the future.

- Introduce tax benefits: Tax benefits for increased training, as done in the UK, is a similar principle to the 1% skills levy in South Africa. A tax incentive is encouraged to increase training of seafarers and increase employment opportunities. Training costs should be shared amongst maritime stakeholders.

- An income tax rebate for seafarers should be considered, regardless of whether they 'leave' the country or not. This will encourage youngsters to go to sea.

6 Findings and Analysis: Legal and Policy Frameworks Governing the Maritime Sector

"I feel the policy planning and institutional environment is generally poor. There is no coherent and comprehensive maritime policy. With no central policy the different areas of maritime don't hold hands. The current policy is not inclusive of what I consider the maritime sector. And there are too many bodies in skills development"

Stakeholder interviewed

This chapter responds to the following study objective:

Study objective 3a: Explore policies that relate to skills development in the South African maritime sector

Many international, regional and national regulatory instruments and legal principles apply and affect South Africa's maritime industry.

This chapter considers the various global, regional and national policy and regulatory environments in detail. Green text is used throughout the chapter to identify the research team's analysis as well as findings from the analysis instrument that reflect on impediments and enablers towards skills development in the maritime sector.

6.1 The global policy and regulatory environment

South Africa is a member country of the international Maritime Organisation (IMO) and our maritime industry is strategically and operationally guided by the regulations and requirements of the IMO. Furthermore South Africa also subscribes to the regulations of the International Labour Organisation (ILO). Both these organisations significantly influence the South African Maritime industry.

The International Maritime Organisation (IMO)

"We follow the protocols, standards and legislation passed on unto us by the International Maritime Organisation"

Maritime stakeholder interviewed

The international shipping industry is primarily regulated by the International Maritime Organization (IMO). IMO technical regulations are adopted by all member nations in the form of international diplomatic conventions which leads to governance of the safety of ships and protection of the marine environment. The main responsibility for enforcing IMO regulations concerning ship safety and environmental protection rests with the flag states (i.e. the countries in which merchant ships are registered – which may be different to the country in which they are owned). Most IMO regulations are enforced on a global basis.

SAMSA is responsible for introducing and maintaining international standards in the South African maritime and shipping industry set by the **International Maritime Organisation (IMO)** with respect to[56]:

- Ship construction
- **Maritime training and training curricula**
- Watch-keeping
- **Certification of seafarers**
- **Manning and operation of local and foreign ships**
- Maritime search-and-rescue
- Marine communications and radio navigation aids
- Pollution prevention.

When considering legal and policy frameworks governing the maritime sector, it is important to note that the International Maritime Organisation (IMO) is the global maritime body that develops maritime regulation. Countries are all guided by this international regime.

The analysis instrument depicts that all stakeholder groups interviewed indicated that industry growth, job creation and global competitiveness are hampered by an unattractive and non-competitive legislative and policy framework. All stakeholder groups raised concerns with South Africa's national policies supporting a lower level of education that may inhibit South Africa being recognised as having white paper status in the future.

[56] Source: South African Yearbook 2009/2010. Pg. 158

The following quotes illustrate this concern:

"W*hen a country complies with the minimum standards of the IMO it is recognized and it is put on the white paper, so the problem in Africa is that most countries are not even on the white paper, showing that they do not even meet the minimum requirements*". South Africa is one of the few African countries with 'white paper' status.

"A*fter being put on the white paper, there has to be a bilateral agreement between countries that want to trade*".

"*A country has to meet the minimum standards as set out by the IMO. This implies that national policies should be developed in accordance with IMO's international regime*".

Within its Integration of Women in the Maritime Sector (IWMS) Programme, IMO supported the establishment of two sub-regional women's associations in Africa one of which the African Women in Shipping, at their 1st Conference organised by Women International Shipping and Trading Association (WISTA) held in Nigeria from 25th -27th May 2010, concluded that the MDGs targets for 2015 concerning the maritime sector are not being considered by African countries (including South Africa) in their poverty reduction programmes. In the course of the deliberations the following observations were made:

- Maritime sector is skewed towards men particularly in the top echelon.
- "He" who controls trade and transport, controls the resources of the world.
- Women are important players in the world economy and their role in any development agenda in Africa is vital.
- Increased participation of women in shipping and trade is in line with the targets of the Millennium Development Goals (MDGs).
- Inappropriate policy direction by government is militating against women's involvement in shipping and trade in Africa.
- The globalization of Maritime jobs is a challenge to Women's participation in the industry.
- Shipping is capital intensive, and lack of access to credit facilities hinders women's participation.
- In-depth technical know-how is required for sustained participation of women in the industry.
- The fragmentation of businesses limits the success of private sector participation.
- Inadequate security at sea is a threat to women's interest in marine activities.
- The MDGs targets for 2015 concerning the maritime sector are not being considered by African countries in their poverty reduction programmes.
- International convention relating to safety, marine pollution, security and maritime sustainable developments are regional based.
- African countries lack resources to explore the opportunities provided by their seabed.

- Lack of well established academic institutions for training marine personnel in some African countries is an impediment to economic development.
- Information sharing is critical to the growth of shipping and trade in Africa.
- Presently, there are only three chapters of WISTA in Africa that is WISTA – Nigeria, Ghana and South Africa.

The International Labour Organisation (ILO)

The International Labour Organization (ILO) is the tripartite UN agency that brings together governments, employers and workers of its member states in common action to promote decent work throughout the world. The International Labour Organisation (ILO) is also responsible for the development of labour standards applicable to seafarers worldwide.

The ILO's Maritime Labour Convention, 2006 provides comprehensive rights and protection at work for the world's more than 1.2 million seafarers. The Convention sets out seafarers' rights to decent conditions of work on a wide range of subjects, and aims to be globally applicable, easily understandable, readily updatable and uniformly enforced. It has been designed to become a global instrument known as the "fourth pillar" of the international regulatory regime for quality shipping, complementing the key Conventions of the International Maritime Organization (IMO).

The International Labour Organisation (ILO) Conventions were signed by the Department of Labour (DOL) on behalf of South Africa. South Africa is a signatory to the consolidated Maritime Labour Convention of 2006.

6.2 The regional policy and regulatory environment

There are three regional policies that influence the maritime industry and this section addresses policy and regulatory frameworks which could impact skills development planning and job creation in the South African maritime industry. These include:

- **SADC Protocol on Transport, Communications and Meteorology, 1996:**

  The scope of this Protocol comprises the entirety of the transport, communications and meteorology sectors in each Member State and the region, including, but not limited to all policy, legal, regulatory, institutional, operational, logistical, technical, commercial, administrative, financial, human resource and other issues; international, continental, regional and national dimensions; and the public and private sectors in each Member State, as well as collectively in the region, to the degree that their activities overlap with the subject matter of this Protocol.

  SADC member states general objective is to establish transport, communication and meteorology systems which provide efficient, cost-effective, effective and fully integrated infrastructure and operations, which best meet the needs of customers and promote economic and social development while being environmentally and economically sustainable.

- **African Maritime Transport Charter:**

  Placed in regional context, Africa is the only major region in the world that does not have its own maritime policy or strategy, despite the acknowledged importance of this component of any national or regional economy.

  The analysis of this charter by the Deloitte research team suggests that the charter would boost the maritime sector in Africa and drive the continent towards world class shipping and maritime trade standards. The charter confirms the notion that the African maritime industry has the capacity to grow the various economies of its signatory countries and enable large scale job creation.

- **NEPAD:**

  The New Partnership for Africa's Development (NEPAD) is a vision and strategic framework for Africa's renewal. The NEPAD strategic framework document arises from a mandate given to the five initiating Heads of State (Algeria, Egypt, Nigeria, Senegal and South Africa) by the Organisation of African Unity (OAU) to develop an integrated socioeconomic development framework for Africa.

  The 37th Summit of the OAU in July 2001 formally adopted the strategic framework document. NEPAD is designed to address the current challenges facing the African continent. Issues such as the escalating poverty levels, underdevelopment and the continued marginalization of Africa needed a new radical intervention, spearheaded by African leaders, to develop a new Vision that would guarantee Africa's Renewal.

6.3 South Africa's policy and regulatory environment

This section considers the four programmes in support of skills development; the transport industry impediments and enablers to maritime sector skills development; the maritime policy regulatory framework; procurement, financial management and labour relations; as well as the skills development education and training environment.

6.3.1 Four programmes in support of skills development

There are four key programmes identified as relevant to support skills development in the maritime industry. These South African government programmes and strategic imperatives aimed at creating a supportive and enabling environment for skills development, job creation and enterprise development which will aid transformation of the South African maritime industry. They include the following:

- **Programme of Action**: The South African government has introduced a Programme of Action in 2003 which emphasises effective implementation of policies with particular focus on creating work opportunities, fighting poverty and building the capacity of government. The scope of improvement lies in the enhancement of educational improvement as South Africa still lags behind in the traditional human development. In the current Programme of Action Government has identified 10 priority areas, from now up to 2014.

  The priority area 'strengthen the skills and human resource base' is supportive of the maritime sector's need to grow the sector through skills development.

- **ASGISA**: Working with its social partners, the Government has developed the Accelerated and Shared Growth Initiative (ASGISA) for South Africa, to raise the trajectory of growth to an average of at least 6% between 2010 and 2014. This acceleration of growth is vital to achieve government's mandate of halving poverty and unemployment by 2014. The Joint Initiative on Priority Skills Acquisition (JIPSA) was later established to address the scarce and critical skills needed to meet ASGISA's objectives.

  ASGISA also takes into account the women and youth sectors in its second economy interventions with assertions to intensify policies relevant to these groups.

  The South African Department of Labour (DOL) publishes an annual list of skills that are in short supply in the public and private sectors approved by the South African Cabinet as the basis for prioritising investments in skills development. Alignment is therefore required between skills planning and skills shortages to address national and sectoral critical skills needs that might stand in the way of growing the maritime sector.

  As an illustration of an extra-ordinary intervention aimed at creating a sustainable skills pool and industry growth, the case study of the ASGISA priority Business Process Outsourcing & Off-shoring (BPO&O) sector is presented in Annexure F.

- National Industrial Policy Framework (NIPF): In January 2007 Cabinet adopted the National Industrial Policy Framework (NIPF) which sets out Government's broad approach to industrialisation with the following core objectives:
  - To facilitate diversification beyond our current reliance on traditional commodities and non-tradable services. This requires the promotion of increased value addition characterised particularly by movement into non-traditional tradable goods and services that compete in export markets as well as against imports;
  - The long-term intensification of South Africa's industrialisation process and movement towards a knowledge economy;
  - The promotion of a more labour-absorbing industrialisation path with a particular emphasis on tradable labour-absorbing goods and services and economic linkages that catalyse employment creation;
  - The promotion of a broader-based industrialisation path characterised by the increased participation of historically disadvantaged people and marginalised regions in the mainstream of the industrial economy, and;
  - Contributing to industrial development on the African continent, with a strong emphasis on building its productive capacity.
- Industrial Policy Action Plan (IPAP): Guided by the NIPF, the implementation of industrial policy is to be set out in an Industrial Policy Action Plan (IPAP). In August 2007 Cabinet approved the first: 2007/8 IPAP which reflected chiefly 'easy-to-do' actions. The 2007/8 IPAP has largely been implemented and the 2010/11 to 2012/13 Industrial Policy Action Plan (IPAP) was launched in February 2010.

IPAP2 represents a significant step forward in scaling up the country's efforts to promote long term industrialisation and industrial diversification beyond its current reliance on traditional commodities and non-tradable services. Its purpose is to expand production in value-added sectors with high employment and growth multipliers that compete in export markets as well as compete in the domestic market against imports. In so doing, the action plan also places emphasis on more labour absorbing production and services sectors, the increased participation of historically disadvantaged people and regions in the country's economy and will facilitate, in the medium term, South Africa's contribution to industrial development in the African region.

It is estimated that the IPAP will result in the creation of 2 477 000 direct and indirect decent jobs over the next ten years. It will diversify and grow exports, improve the trade balance, build long term industrial capability, grow South Africa's domestic technology and catalyse skills development[57].

[57]Source: Speech to National Assembly statement on Industrial Policy Action Plan (IPAP2) by Dr Rob Davies, Minister of Trade and Industry Department of Trade and Industry 18 February 2010

6.3.2 Transport Industry Context

This section addresses policy and regulation within the national transport sector under administration of the Department of Transport. It looks at maritime specific policy and regulation governing SAMSA's mandate highlighting SAMSA's international adherence to IMO regulations. Throughout the section, interview findings are shared.

6.3.2.1The Department of Transport

The Department of Transport (DOT) seeks to align its objectives with Government's strategic plans for growth and development. DOT aims to achieve the following objectives by providing a policy framework, regulation and implementation models:

- Rural access and mobility interventions;
- Safety and security improvements – which include improving Maritime Transport Safety and Security;
- Reduce infrastructure backlogs; and
- Reduce time in transit.

The Department of Transport, as the chair of the Government's Infrastructure Development clusters is in favour of the development of sustainable infrastructure on roads, rail, energy, water, transport and mining so that their targets on job creation, poverty alleviation and economic development can be fast tracked and bear positive results[58].

DOT provides an integrated, sustainable, reliable and safe transport system, through safety and economic regulation, planning, development, coordination, promotion and implementation of transport policies and strategies. DOT states that it creates an enabling environment for regulating all transport modes in South Africa. DOT facilitates the management of a safe and internationally competitive regulatory framework for maritime transport and manages the development and implementation of transport economic regulation frameworks[59].

The DOT is aiming to implement its transport development plans over the next six years in such a way that it becomes clearly conceivable that through transport the movement of goods, services and people would demonstrate that by planning together Department and its Agencies such as SAMSA, can produce the necessary transport infrastructure and services that can through positive spin-offs, add value to New Partnership for Africa's Development (NEPAD) and Accelerated Shared Growth Initiative for South Africa (ASGISA) projects that are at the core of South Africa and Africa's development and facilitate the broader social economic growth agenda.

[58] Address to mark the 2010 South African Maritime Authority (SAMSA) Year of the Seafarers Awards by Mr George Mahlalela Director–General Department of Transport, Cape Town

[59] The Register of all Transport Legislation, Policies and Strategies. (2009).

DOT ensures sound governance through the development of effective systems for financial and risk management and internal control and also to ensure that all the department's agencies such as SAMSA' strategic objectives are aligned to those of the Department and national government[60].

The South African economy has grown faster than the rate of investment in transport infrastructure and the development of logistical systems to support effective and efficient freight transportation systems. The existing models for freight transport are close to its limits. The lack of reliability in the rail network, the reliance by many exporters on costly road freight transport and the poor throughput at most South African ports, is not wholly a consequence of inadequate infrastructure but also linked to outdated managerial and operational practices. The freight logistics system is under review to inform not only the necessary investment in infrastructure, but also to identify operational improvements to gain maximum leverage in order to eliminate the bottlenecks in the freight logistics system. The process of restructuring port administration through the establishment of an independent Ports Regulator is also expected to have a positive impact on the efficiency of freight Logistics[61]. The Department is focused on enabling job creation and meeting the transport sectors' skills demands, a vision which includes promoting growth in the South African Maritime industry.

The section below depicts constraints identified in the skills development regime in South Africa:

The research team analysed the definitions of maritime between the DOT and the TETA. The DOT definition of maritime is incongruent with TETA (described in 7.3.5.1). According to Department of Transport maritime is defined as seafarers, clearing and forwarding - ship agents, stevedoring and port operations. Fishing is excluded. In terms of TETA's mandate port authority, merchant navy and fishing are included.

The analysis instrument depicts that all stakeholder groups interviewed indicated that measures must be taken to review the South African maritime legislative framework. The following quotes specify the impediments related to the maritime sector and DOT:

> Analysis from interviews depicts a **general lack of support from Department of Transport** at National level for maritime training and education. As quoted, "*DOT interacts with the Maritime chamber on rare occasions and it appears that only when they need to report numbers to government, do they contact them".*
>
> Stakeholders indicated that limited assistance is offered to secure **berths** for students requiring sea-time to complete their studies and become certified/certificated seafarers.

[60] The Register of all Transport Legislation, Policies and Strategies. (2009).

[61] Source DOT Website: www.dot.gov.za

There is a need to **increase capacity and authority** to provincial level to drive maritime interests. As stated, *"we need all the regions to be more involved in policy and planning. Everything is too centralized in national policy and the department of transport has no real focus on the needs of the maritime sector".*

The maritime sector has been identified as a sector which is ideally suited for economic growth and job creation. Analysis from interviews shows that there is limited assistance for skills development to help the sector grow in terms of economic growth and job creation. As quoted:

"There is limited assistance to maritime secondary schools and higher education institutions such as the Universities of Technology and Universities specialising in maritime, yet it has been identified as Government intervention is required.

"Learning institutions are unable to attract Master Mariners and Marine Engineers to their faculty staff as no funding framework is in place to pay commensurate salaries – lecturers at both DUT and CPUT are aging and due to the lack of funds these renowned maritime training institutions are unable to attract younger lecturing staff".

Transport policy impediments and enablers to maritime sector skills development:

The following section considers transport policies and whether they are enablers or impediments:

- **National White Paper on Transport Policy, September, 1996**

  The Transport Policy aims to provide safe, reliable, effective, efficient, and fully integrated transport operations and infrastructure which will best meet the needs of freight and passenger customers at improving levels of service and cost in a fashion which supports government strategies for economic and social development whilst being economically and environmentally sustainable.

  This policy is regarded as an enabler to SAMSA Sector Skills Development Planning. However, other than the Draft Maritime Transport Policy, no Maritime Sector Policy exists which is a hindrance to future skills development planning.

  The policy could be an instrument that will detail out the development of future skills for the sector.

  According to the Brenthurst Foundation, 'once these resources are protected and exploited in a sustainable manner, downstream savings will justify any upstream investment'[62].

  There is a link between the maritime sector and the transport policy. However, the transport policy focuses on road and rail – maritime is largely neglected. The Transport Policy should include sea-trade. Currently, the policy is biased towards in-land transport.

  The analysis instrument shows emphasis from stakeholder groups that there is an overriding need for a formalised legal framework at a continental level.

- **Integrated Transport Sector Broad Based Black Economic Empowerment (B-BBEE) Charter, 2009:**

  The Charter was established to create economic growth through ownership, human resource development, procurement and the empowerment in all the elements of the Black Economic Empowerment (BEE) Charter across all modes of transport. The Charter is further to facilitate job creation by expanding the sector through broader participation, and creating Small, Micro and Medium Enterprises (SMME) that would expand job creation. The Charter also seeks to maximally use relevant elements of the Charter to enforce skills development that will boost job creation and job retention and create quality jobs in all the modes of the transport sector.

[62] *Business Day, 28 July 2010*

Poverty alleviation and broad-based economic empowerment which will be the main objective of developing Transport B-BBEE Charter to address past imbalances and create opportunities. The Charter further wants to create a supportive culture for Black talent to thrive and to facilitate the creation of new Black entrepreneurs (and the development of existing ones) who can participate in economic opportunities throughout the transport industry value chain. The Charter also wants to ensure the entry into the industry of women and youth and rural people at all levels and sub-sectors of the industry to break the stranglehold of the industry by urban-based males.

The "Maritime Transport & Services Industry BEE Charter" promotes an aggressive transformation agenda according to the broad guidelines set out in the National Strategy and BEE Scorecard. SAMSA is therefore pursuing a growth strategy that prioritises the development and retention of quality critical and scarce skills.

- **Moving South Africa – A Transport Strategy for 2020:**

  The Moving South Africa project (MSA) was designed to produce a data-driven program for strategic action that extends the short to medium-term policy formulation documented in the Transport White Paper into a long-term strategic formulation embodying the sets of trade-offs and choices necessary to realise the vision as set out in the White Paper.

  Analysis of the Transport Strategy ascertains that alignment needs to be sought in developing a skills development strategy for the maritime industry.

6.3.3 Maritime policy and regulatory framework

The Department of Transport is responsible for South Africa's maritime administration and legislation, which SAMSA controls on its behalf in terms of **the SAMSA Act, 1998 (Act 5 of 1998)**. SAMSA's legislated mandates is to maintain the safety of life and property at sea within South Africa's area of maritime jurisdiction, and to ensure the prevention of marine pollution by oil and other substances emanating from ships and promoting the Republic's maritime interests.

6.3.3.1 The Strategic Commitment of Maritime Transformation Policy

The overarching long-term vision of the South Africa's Black Economic Empowerment (BEE) Charter for the maritime transport industry is "to develop South Africa to become one of the world's top 35 maritime nations by the year 2014"[63]. In particular, the vision of the charter includes the strategic commitment to "substantially increase the number of SA flagged vessels and develop new South African shipping companies that are globally competitive…". A mechanism proposed to achieve this outcome is to reserve significant proportions of South African cargo for transport by South African ships. More specifically, the measurable shorter term objective is "to persuade local cargo owners to increase the cargo carried on South African ships to 25,1% of the total within the next five years subject to review on an annual basis.

[63] BEE MTI, 2003: clause 2.1.1

Within five years, SA companies with particular focus on BEE companies should broker 25,1% of all cargo handled by brokers within the next five years, subject to review on an annual basis."

The **Maritime Transport Policy** which was concluded in 2009 to revise outdated regulations, will inevitably aid SAMSA's transformation strategy (discussed further on in this section). The existence of the policy can enhance delivery of SAMSA's mandates.

Implementation of SAMSA's legislative mandate is greatly assisted by the fact that legislative requirements being administered are of an international nature and non-compliance results in major costs for ship owners and other stakeholders.

6.3.3.2South African Maritime Safety Authority (SAMSA) Act no. 5 of 1998

For the purpose of this study the South African Maritime Safety Authority (SAMSA) Act no. 5 of 1998 has been analysed to determine whether it would enable or restrict the implementation of a Maritime Sector Skills Development Strategy and Talent Development Model. The regulations promulgated under the South African Maritime Safety Authority Act "- to ensure the safety of life and property at sea and which authority oversees the administration of the Merchant Shipping Act and the regulations issued in terms thereof gives SAMSA the legal mandate to certify all maritime training and training curricula as well as the certification of seafarers."

It is clear that although the SAMSA Act does not expect the Authority to train people; it does expect it to ensure that the proper standards for training are in place. In looking at the functional component of the Authority's skills development responsibilities, it is clear that continued development is at the heart of a number of them. SAMSA's third mandate is positioned to facilitate the enhancement of skills development in the maritime sector as a whole. This is clearly stated in the direct references to certification and the charges that could be imposed in individuals wishing to embark on such certification process.

The most obvious component to address is certification, despite the fact that skills development and/or training are not explicitly mentioned in the SAMSA Act. It would also appear that the certification mentioned in the Merchant Shipping Act refers to a certificate that will be used as a "Certificate of Competence" as well as a "License to Operate" as the certificate is also used as professional designation.

- Section 2.2 of the Act refers to the transfer of responsibility of a number of acts under the mandate of SAMSA. This specifically refers to the Merchant Shipping Act (act no. 57 of 1951) and sections 73 to 85 that deals specifically with certification.
- Section 3 (a), (b), (c) if read in conjunction with section 2.2 gives an overarching mandate to perform the authority's skills development functions.
- Section 29 (a), (b) refers to the setting and maintenance of standards and can be read to include standards of competence and proficiency.
- Section 38(4) refers to the issue of funding insofar as the funds of the Authority can only be used for the purpose of furthering its objectives. Since Certification is a stated objective, funding is available and can be used.

The South African Maritime Safety Authority (SAMSA) Amendment Bill, 2009 to Act no. 5 of 1998 is awaiting promulgation. Relevant to skills development, the amendment will:

- Further regulate the constitution and operation of the Authority;
- Reconstitute the Maritime Fund within the accounts of the Authority;
- Enable the making of marine rules by the Authority; and for related matters.

It is hoped that this Amendment will enable the Authority to lead transformation of the maritime sector.

For the purpose of this study, compliance by SAMSA relevant to maritime sector skills planning has been indicated below. Compliance can be defined as being included in the planning process, direct/indirect impacting skills supply and demand, learning programme content, international/national standard or regulated requirement etc.

- **South African Maritime Transport Policy:**

  The South African Maritime Transport Policy aims to compliment and be consistent with the government's broad economic and social developmental policies and strategies, and to contribute to the realisation of these national objectives, which include:

  - Enhancing export growth by anchoring transport and development corridors at ports.
  - Industrial development by creating opportunities for investment in infrastructure as well as shipping support services.
  - Broad Based Black Economic Empowerment (BBBEE), especially small and medium enterprises that support shipping.
  - Job creation both at sea and ashore through maritime skills development and education.
  - Regional development especially by supporting regional trade and integration initiatives as well as the principles of the New Partnerships for Africa's Development (NEPAD) and the African Union (AU).

- **International Maritime Organisation (IMO) Standards of Training, Certification and Watchkeeping regulations 95 (STCW 95):**

  Compliance with the International Maritime Organisation (IMO) Standards of Training Certification and Watchkeeping regulations 95 (STCW 95) which convention sets qualification standards for masters, officers and watch personnel on sea going merchant shipping vessels must be adhered to in so far as is applicable by all training providers.

- **STCW Convention and Code adopted at the Manila Conference:**

  Major revisions to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (the STCW Convention), and its associated Code have been adopted at a Diplomatic Conference in Manila, the Philippines, thereby ensuring that the necessary global standards will be in place to train and certify seafarers to operate technologically advanced ships for some time to come[64].

  The amendments, to be known as "The Manila amendments to the STCW Convention and Code" are set to enter into force on 1 January 2012 under the tacit acceptance procedure and are aimed at bringing the Convention and Code up to date with developments since they were initially adopted in 1978 and further revised in 1995; and to enable them to address issues that are anticipated to emerge in the foreseeable future.

  Amongst the amendments adopted, there are a number of important changes to each chapter of the Convention and Code, that inputs on Skills Development. These changes are reflected in Annexure I.

  These amendments create an enabling environment for SAMSA to ensure a national standard of high quality training provision at all accredited training providers to the maritime industry.

- **National Commercial Ports Policy, 2002:**

  This policy aims to ensure affordable, internationally competitive, efficient and safe port services based on the application of commercial rules in a transparent and competitive environment applied consistently across the transport system.

  The importance of this policy is further highlighted by the fact that globalisation pressures make it essential that nations integrate their transport systems into the global logistics network. Ports are naturally being incorporated into this changing system and have to adjust to the new challenges and environment.

  Strategic partnerships need to be consolidated between transport agencies to enable maritime sector skills development planning.

- **National Ports Act, 2005 (Act No. 12 of 2005):**

  To provide for the establishment of the National Ports Authority and the Ports Regulator; to provide for the administration of certain ports by the National Ports Authority (NPA); and to provide for matters connected therewith.

[64] Conference of Parties to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, Manila, the Philippines, 21-25 June 2010

- **International Convention for the Safety of Life at Sea (SOLAS) – Merchant Shipping Law Act:**

  The International Convention for the Safety of Life at Sea (SOLAS) which was ratified and made law under the Merchant Shipping Law Act and deals with, inter alia, general safety of life and property at sea and certain training requirements such as the training of use of life rafts and the running of fire and other emergency drills onboard ship will have to be considered.

- **International Maritime Dangerous Goods Code**

  Conformity with the International Maritime Dangerous Goods Code, which governs the transport of dangerous goods by sea and, amongst other things, sets out training requirements in respect thereof will have to be ensured.

- **The Merchant Shipping Act 57 of 1951 and the Merchant Shipping (Training and Certification) Regulations**

  The Merchant Shipping Act and the Merchant Shipping (Training and Certification) Regulations issued there under, which regulate, inter alia, the training and certification of seafarers is with the various assessment processes relating to the certification of positions onboard ships and with the detailed provisions regulating the establishment and accreditation of training institutions which will be used for the training of maritime offices.

6.3.3.3Industry tax

The analysis instrument shows that all respondents agreed that the tax regime should be urgently reviewed to aid industry growth.

Suggestions were made that government should introduce an alternative shipping tax regime such as tonnage tax and other incentives to attract foreign ship owners in line with other major maritime nations. Respondents also suggested training incentives to ship owners to address the dire need for cadet berths. All respondents stated that industry growth, job creation and global competitiveness are hampered by an unattractive and non-competitive legislative and policy framework.

6.3.4 Procurement, Financial Management and Labour

Legislation governs procurement, financial management and labour relations, which SAMSA needs to comply with as an agency of the Department of Transport.

Interviewees were asked to identify specific policies and frameworks that they believe are relevant to the development of skills in the maritime sector, with an indication of impediments or enablers surrounding these policies and frameworks. The following were identified:

- **Public Finance Management Act (PFMA)**

  Complying with the uniform treasury norms and standards as set out in the Public Finance Management Act (PFMA), as well as the relevant National Treasury regulations issued (specifically Treasury Regulation 16) in terms thereof will be of central importance to the successful implementation of any Public Private Partnerships SAMSA might engage in to meet the industry's skills development needs.

- **Broad Based Black Economic Empowerment Act (BBBEE) 2003**

  The Broad Based Black Economic Empowerment Act (BBBEE) has been promulgated to establish a legislative framework for the promotion of black economic empowerment; to empower the Minister to issue codes of good practice and to publish transformation charters; to establish the Black Economic Advisory Council; and to provide for matters connected therewith.

  Among the Acts which promote BBBEE and provide the legislative framework for the transformation of the economy are: The Skills Development Act, the Employment Equity Act, the Preferential Procurement Act and the highly developed and detailed Codes promulgated pursuant thereto. At this stage the B-BBEE Act seeks only to bind organs of state, however in doing so, private enterprise is of necessity required to comply should it wish to do business with Government or persons who do business with Government.

- **Preferential Procurement Policy Framework Act (2000)**

  Preferential Procurement Policy Framework Act (2000) has been put into place to award various government contracts and tenders not only on price, capacity or track record but also on race, disability and gender.

  Findings from the stakeholder analysis indicated that in terms of equal gender employment opportunities, stakeholders are not aware of any female leadership development programmes in the sector and indicated that "*although there are female cadets, there are not enough women in leadership positions*".

- **Employment Equity Act (1998)**

  The Employment Equity Act (1998) aims to enforce race considerations in the hiring and promotion policies of anyone employing 50 people or more (or producing turnover above differing sectoral targets). To address unfair discrimination on the basis of sexual orientation, culture, religion or belief, HIV status, disability, etc.

  The analysis instrument depicts that employment equity is affecting the quality of growth of the maritime sector. Excluding Government stakeholders, all respondents, especially large employers, indicated that all efforts are being made to aid accelerated industry transformation, but found that government is Employment Equity target driven and not focused on transformation. Statements were made that anybody not supporting transformation is hampering growth and global competitiveness. Stakeholders interviewed indicated that the maritime sector is a 'white male dominated' environment.

  Stakeholders across the sector indicated that Employment Equity hampers growth of the industry as it minimises the pool of potential skills that could be available to the industry. It is necessary to upskill all available resources, regardless of race. The drive for targets and percentages is affecting quality because everyone is trying to push accelerated programmes.

  International conditions to off-shore employment: There are international conditions that are in contradiction with South African legislation. Employees at sea are required "*to be medically fit*". Being colour-blind prevents a person going to sea. Although South African law does not require an individual's HIV status to be know, most employers of seafarers require the latter.

  The following quotes illustrate the challenge in the maritime sector:

"S*eafaring internationally discriminates HIV positive individuals*". It is suggested that Government will need to work with this factor when considering the growth of the maritime sector.

"*All races should have equal rights for recruitment and selection into the maritime sector – skill development should be considered for anyone wanting to enter maritime industries*".

- **Basic Conditions of Employment Act (1997)**

  To oblige companies to report on their internal wage differentials and require them to narrow an undefined "disproportionate" wage gap between management and decision-making in the workplace.

  All workers fall under one or more than one of the SA labour laws. The laws work in order of priority. For example if a Bargaining Council Agreement (or other centralised collective agreement) covers work done by an employee, then that agreement applies to that employee. If there is no bargaining council agreement then you must see whether a Sectoral Determination or Wage Determination applies. If no Bargaining Council Agreement or Sectoral-/Wage Determination apply, then the BCEA will apply, unless they are specifically excluded by the BCEA.

  An individual contract of employment may override the BCEA provided it is definitely more advantageous for the employee and provided it does not affect certain "core" rights which are identified in the BCEA.

  All employees are covered by the BCEA (No 75 of 1997), except:

  – Members of the National Defence Force (including the Navy), National Intelligence Agency and SA Secret Service
  – Unpaid voluntary employees who work for a charitable organisation
  – Employees who work for an employer for less than 24 hours per month
  – Employees on vessels at sea where the Merchant Shipping Act of 1951 is applicable
  – Certain special provisions apply to SMMEs employing less than 10 people

  TETA's discretionary grant system is applied to industry within recognition of the "code".

  During interviews with stakeholders, some stakeholders highlighted the issue that "learnership alignment is very limited as Merchant shipping Act overrides the BCEA, thus there are discrepancies between the two Acts". The research team analysed the two Acts to understand the issue but could not find an issue.

  Further research is merited to determine the discrepancies that exist.

- **Merchant Shipping Act**

  The MSA covers workers who are at sea within SA's territorial waters. If workers are outside the territorial waters of SA, then an Agreement or Determination will apply to these workers:

  – Workers employed on a ship which is registered in SA; and

– Even if the ship is not registered in SA, workers who are employed on a ship which spends all its time working between ports in SA.

The Merchant Shipping Act covers conditions of employment for employees who are at sea within SA's territorial waters whilst members of the onshore organisation in the industry are covered by different laws.

Relevant to the maritime sector the **Merchant Shipping Act (MSA)** says that the Labour Relations Act (LRA) and the Wage Act (WA) apply to all workers at sea. It also says that if there is conflict between the provisions of the MSA and the provisions of a Bargaining Council Agreement or Wage Determination, then the provision of the Agreement or Determination will apply.

Two systems are running next to each other, governed by two different sets of legislation which are currently incompatible. The Merchant Shipping Act gives SAMSA the power as a training authority in line with IMO regulations. The SAQA Act gives TETA the power as the transport training authority.

There appears to be a misunderstanding in terms of demarcation of the two Acts. There is a need for further research and analysis of this aspect to evaluate the situation and ensure that industry can seamlessly function.

TETA and SAMSA is fully aware of the hampering fact caused by legislature and have already approached SAQA 18 months ago to absorb the "SAMSA Code" as dictated by Merchant Shipping Act and IMO on the NQF with no success.

TETA and SAMSA have agreed that the "code" rules as industry will always support SAMSA above TETA as they need international registration of seafarers.

It is noted that SAMSA regulates sea transport in the jurisdiction of waters and ports. TETA is not mandated to take care of sea transport – its focus is on rail and road transport and other modalities.

- **Labour Relations Act (1995)**

  To allow bargaining councils to be established and registered with the aim of facilitating worker participation and decision-making in the workplace To entrench the right to strike, encourage sectoral and enterprise bargaining and clarify unfair dismissals and information disclosure.

6.3.5 Skills Development

The availability of skills is a requirement to boost the economy of South Africa and assets contributing towards Gross Domestic Product (GDP). There are currently skills development challenges that affect the entire value chain of the economy. This section considers some of these challenges:

- Apartheid laws: Despite fourteen years of democracy, the invasive nature of apartheid laws in South Africa continues to have an impact on the overall growth and development of the country.
- Unemployment: Although the country has seen unprecedented growth over the last five years in the economy, unemployment still remains a major challenge – the number of jobs created has not been sufficient. Unemployment is at the centre of South Africa's war on poverty.

- More skilled workers: As the economically active population grows, the economy needs more skilled workers. There are insufficient skills to accommodate the demand to grow the economy. For this reason, scarce and critical skills lists have been developed so that industries can be guided in terms of supply to meet the demand that exists.
- HIV/AIDS: HIV/AIDS remains a major threat with prevalence rates still rising. South Africa is ranked first in the world in terms of the population living with HIV/AIDS. HIV/AIDS is having a direct impact on the country's education system, as it does not only pose a threat from a mortality perspective, but also from an attainment of equity targets, and to redress deficits in education and training.

  Because of the reality that exists in South Africa in terms of HIV/AIDS, and the importance of ensuring sustainable livelihoods, South African legislation does not discriminate against people living with HIV and AIDS. However, the analysis of stakeholder interviews found that international maritime law still discriminates. As stated:

  "*Seafaring internationally discriminates HIV positive individuals*"

  It is suggested that Government will need to work with this factor when considering the growth of the maritime sector.
- SETA funding framework: A limitation to funding mentioned with regard to the SETA funding framework is that once cadets are on a foreign ship they fall outside of the funding framework – resulting in students completing their studies but unable to get "sea-time". This implies that they are not employable.

  DHET funding: A limitation was identified through the analysis of stakeholder interviews in terms of Higher Education and Training (HET) institutions not being able to access SETA learnership funding. As stated:

  "*Higher Education and Training (HET) Institutions, Public schools and Further Education and Training (FET) colleges receive public funding from the DHET. Due to the current SETA regulatory framework HET Institutions cannot access SETA learnership funding, however much needed funding opportunities might open up should cadetship be amended to meet the regulatory requirements of either a learnership, internship and/or apprenticeship. Such an arrangement could certainly go a long way to address the critical berth issue"*

To address the skills development challenges, various Acts have been put in place with a view to enhancing the efficacy and efficiency of the South African National Qualifications Framework. These Acts are listed in Annexure I.

In terms of the Skills Development Act (SDA) 97 of 1998, SETA's were mandated to take on various responsibilities, including:

- Determine the vision and mission of the SETA;
- Develop and adapt the sector's skill strategy;
- Set strategic targets in line with national policies and priorities, national sectoral priorities and sub-sectoral or chamber priorities;
- Enter signed agreements on targets for delivery with chambers or sub-sectors;

- Approve funding and funding flows;
- Monitor and evaluate the implementation of strategies and the achievement of targets;
- Assume accountability in terms of the Skills Development Act, the Skills Development Levies Act, Public Finance Management Act and the SAQA Act;
- Quality assure education and training providers via an Education and Training Quality Assurance body; and
- Be responsible for Learnerships.

Based on analysis of the challenges existing in the skills development arena, the following recommendations are made:

It is recommended that when developing a sector skills development strategy, careful consideration must be taken of compliance with regulatory framework, socio-economic challenges and not least, the Broad Based Black Economic Empowerment imperatives.

To access SETA learnership funding, cadetship must be amended to meet the regulatory requirements of either a learnership, internship and/or apprenticeship. Much needed funding opportunities might then open up. Such an arrangement could certainly go a long way to address the critical "berth" issue, resulting in certified seafarers, employment opportunities for South African cadets and maritime sector growth.

The next section focuses on TETA, since TETA is the SETA under which the maritime sector is placed.

6.3.5.1 The Transport Education and Training Authority (TETA)

The Minister of Labour in accordance with the Skills Development Act, Act No 97 of 1998 formally established the Transport Education and Training Authority (TETA) on 20th March 2000. The Transport Sector has been demarcated into eight sub-sectors/industries and encompasses the Aerospace, Forwarding & Clearing, Freight Handling, **Maritime**, Rail, Road Freight, Road Passenger and Taxi Sub Sectors / Industries. At present there are 8000 + companies registered with TETA. Their vision is to develop and improve skills in the Transport Sector. The mission clearly states that they want to facilitate a framework of learning through a delivery system that enhances skills levels in the workplace and transport sector.

Functions of TETA include the following:

- The development of a Sector Skills Plan (SSP) for the Transport Sector;
- The implementation of the Sector Skills Plan through Learnership Implementation; Approval of Workplace Skills Plans; Allocation of Levy Grants; and the Monitoring of ETD activities in the Transport Sector;
- Quality Assurance of ETD interventions; and

- The disbursement of Levy Grants

The vision of TETA is to develop and improve skills in the transport sector. This is facilitated through a framework of learning through a delivery system that enhances the level of skills in the workplace and the transport sector. The Skills Development Unit within TETA is responsible for the development, endorsement and implementation of the Transport Sector Skills Plan through a sectoral growth strategy, profile and aggregate company Workplace Skills Plan. It is also responsible for the development and implementation of learnerships, skills programmes, qualifications and other transport related training interventions throughout the industry. The development and implementation of strategies and projects in line with the National Skills Development Strategy (NSDS) Implementation Objectives, criteria and levers are focused on.

TETA has been accredited in terms of the South African Qualifications Authority Act, 1995 (Act no. 58 of 1995) and **assigned functions by the South African Qualifications Authority** (SAQA) as a body responsible for monitoring and auditing achievements in terms of national standards and qualifications and to quality assure training in the Transport Sector that includes the Maritime Industry.

SAMSA is an official member of the TETA Maritime Chamber which includes the Merchant Marine and the Fishing Industries in their broadest sense and the related land based back-up services.

The SAMSA/TETA MOU

SAMSA and the Transport Education and Training Authority (TETA) have entered into a Memorandum of Understanding to coordinate the recognition and accreditation of maritime training providers and to enhance co-operation with respect to training in the maritime industry. This partnership is aimed at meeting the objectives of the National Qualification Framework and the requirements of the Merchant Shipping (Training and Certification) Regulations, 1999.

The purpose of the SAMSA/TETA MOU is:

- To promote a coherent and effective quality assurance system for education and training in the maritime industry
- To clarify the manner in which SAMSA and the TETA (ETQA) division will co-operate with each other, co-ordinate their functions and promote consistency in their respective quality assurance policies and procedures.
- To minimise duplication of effort by conducting combined accreditation activities.
- To offer the following benefits to the maritime industry:
  - Possible funding through learnerships.
  - Standardised training curricular for all maritime training.
  - South African Qualification Authority (SAQA) registered unit standards aligned with SAMSA and international requirements.
  - Combined initial accreditation by SAMSA/TETA.

The analysis instrument indicates that stakeholders across the industry agree that the maritime institutional environment is not efficiently structured and run. *The following quotes support this impediment:*

"We have a challenge in that the industry is very fragmented. SAMSA, TETA and the department are sometimes doing the same thing because we do not know what the other one is doing. Some departments take no initiatives in terms of their mandate and that creates a backlog from all of us. There seems to be no proper communication".

"TETA actively supports Simonstown and Durban based maritime schools… However, according to the SETA funding framework funds cannot be allocated to a school unless it is an NGO".

"TETAs SLA with DHET requires career awareness but the money is pledged to the transport industry as a whole and not to specifically to maritime".

Another challenge highlighted through the analysis was the lack of power of provincial government. As quoted:

"Everything is too centralized in national policy and the department of transport has no real focus on the needs of the maritime sector".

"There is a need to increase capacity and authority to provincial level to drive maritime interests".

"We need all the regions to be more involved in policy and planning".

6.4 The Changing Legislative Landscape

It is important to consider the changing legislative landscape in the skills development arena when preparing industry wide skills development planning. While this research is taking place, the legislative environment is changing, which may impact the outcome of SAMSA's strategic planning for transformation.

The new/amended Skills Development legislation passed in 2008 brought about changes to the South African Skills Development arena, which includes the following:

- Three quality councils;
- The establishment of the Quality Council for Trades and Occupations (QCTO);
- A focus on workplace learning;
- The opportunity to develop occupational qualifications from Level 1 – 10; and
- SETA's quality assurance role changing to a more focused monitoring role.

These changes also required the establishment of a new Department of Higher Education and Training (DHET) and its legal mandate, identifying the institutions for which the DHET is responsible and managing a transition phase between government departments.

For more information on the changing legislative landscape in the skills development arena, refer to Annexure H.

National Skills Development Strategy (NSDS) III

The framework of the NSDS III 2011 to 2016 is intended to guide the development of Sector Skills Plans (SSP) for adoption by September 2010. This framework should be read as a companion to the Human Resource Development South Africa (HRDSA) Draft strategy for discussion 2010 to 2030. The draft NSDS III is awaiting acceptance by the Minister, therefore NSDS II remains in force until March 2011.

6.5 Summary

Extraordinary efforts needed to be made to meet national and provincial strategic objectives. Focused large scale skills development programmes, alternative skills development structures such as Skills Development Institutes (SDIs), and dedicated funding solutions are required to enable the South African Human Resource Development Strategy and implement the NSDS III. In light of these exciting times in South Africa's skills development arena, SAMSA is rightly positioned to lead the Sector towards developing in an extra ordinary talent development model which will not only meet its own skills demand but which could be a model for replication in other sectors.

Recommendations to improve the maritime sector based on current legislative impediments:

- **In terms of the regional policy and regulatory environment, inclusion of the African Maritime Transport Charter in the South African Maritime regulatory framework will speed up its enforcement; such a development will include regional development and job opportunities for women and youth including unemployed graduates/matriculants and rural youth.**

- **- To overcome the challenge of a fragmented industry, a dedicated maritime ministry is required that can highlight the contribution of the maritime sector to the overall economy of the country.**

- **Government should introduce tonnage tax and relook at industry tax and incentives which will lead the way to a revival of the SA shipping register. Major intervention through the tripartite of DoT/SAMSA/SA Government is required to enable growth of the sector. Foreign ship owners should be offered incentives such as tonnage tax and training incentives to offer our cadets sea time. Only then will we be able to compete against the rest of the world and attract the investment our Country not only desires but deserves.**

- **South Africa's legislative policy with regard to HIV status differs from the global maritime nations. Government will need to work with this factor when considering the growth of the maritime sector.**

- **Incentives should be considered as part of the Maritime Skills Development Strategy to attract individuals into maritime.**

- **Ships under South African flags and our own Ship Register have long been debated as the ultimate solution to grow the South African Maritime sector as a global competitor, but it will require major funding investment and it could be too time consuming to meet the current need to grow the sector. South Africa should build on our reputation for high quality training, systems and standards to develop our country as a skills hub to the global maritime sector. It is recommended that further research determine lessons learnt on existing skills development models and strategies of renowned maritime nations so that the South African maritime sector can make an informed decision on the most appropriate model to follow to our country as a skills hub to the global maritime sector.**

- **Education of all relevant stakeholders is required to understand that SA skills on foreign ships are not lost to the Country, but instead foreign currency, economic growth and enhanced skills will be gained.**

- **Recognition of Prior Learning for STCW certification cannot be offered as it has not been approved by the Minister, this should be treated as a high priority action.**

7 Findings and Analysis: Funding Mechanisms and Collaborative Partnerships

In South Africa 98% of our commodities are transported by ship, it is imperative that government starts looking into spending much more money into maritime sector especially skills Development

This chapter responds to the following study objective:

Study objective 3b: Explore funding mechanisms and partnerships that relate to skills development in the South African maritime sector

Section 7.1 provides an indication of the various public and private skills development funding mechanisms available. Possible foreign donor funding is also identified. Furthermore, individual financial aid is also considered because this information is useful for career guidance purposes.

Section 7.2 looks at various partnerships that could enable SAMSA's efforts to develop a skills development strategy and implementation plan.

Key findings and recommendations are considered and identified by a green block throughout the chapter.

7.1 Public Sector funding opportunities for skills development

This section highlights skills development funding opportunities available from the NSF and the SETA Levy-Grant System.

7.1.1 The Department of Higher Education and Training (DHET) and available funding through the NSF

The DHET published the NSDS III governing the next 5 year period in South Africa's skills development arena.

The DHET Strategic Plan 2010 - 2015 and Operational Plans 2010-2011 confirms its strategies and operational plans in terms of the various programmes it will deliver[65]. It is stated that the Skills development Programme is largely responsible for the implementation of the Skills Development Act, No. 97 of 1998, as amended in 2003 and 2008, as well as for the Skills Development Levies Act.

[65] Source: http://planipolis.iiep.unesco.org/upload/South%20Africa/South_Africa_DoHE_stratplan2010-2015.pdf

The NSF is a critically important instrument to achieve the goals of South Africa's broader Human Resource Development Strategy (HRD-SA). Indications are that in future, the NSF would assess Sector Skills Plans (SSPs) against national goals and use the fund portion of the skills levy to strengthen the overall achievement of the NSDS. NSF grant allocation in terms of the draft NSDS III is in terms of the following four different types of grants:

- **Catalytic grants**: The DHET has indicated that the NSF shall enter Catalytic Grant agreements with SETAs, government departments or other claimants to achieve targeted national goals. The targets (expressed in terms of number of learners to be trained, broken down by equity criteria) shall be listed under the national strategic headings as per the 10 MTSF outcomes. The DHET has committed to special emphasis to be given to priority 3, that is, to 'strengthen the skills and human resource base', and will make every effort to initiate and support projects with rural development as their goal.
- **Social Development Funding Window Grant**: The target for this grant shall be formulated on a per learner cost estimate based on the allocation of funds to this goal.
- **WSP and Pivotal Grants**: to advance partnerships between workplaces and learning institutions it is envisaged that special incentives will have to be designed. The new proposed format of this grant includes the following:
  - A guaranteed 40% of levy paid; and
  - An additional 'pivotal grant' calculated on a standard cost per learner per programmes basis (set by programme type and level) multiplied by the number of students accepted onto accredited workplace learning programmes.
- **Discretionary grants**: This grant would be at the SETAs discretion, and would be dedicated to the achievement of its approved Sector Skills Plan.

7.1.2 Funding available under the SETA Levy-Grant System

In terms of the Skills Development Act no 97 of 1998, amended in 2008, one of SETA's mandates is to support skills development in order to grow the current and future skills in each demarcated economic sector. The Act and the skills development regulations provide guidelines to fulfil this mandate.

To enable the Skills Development Act, the South African Government introduced a skills development levy (via the Skills Development Levies Act, 1999). The levy system introduced a levy-grant scheme whereby employers contribute 1% of their payroll into a central fund and are eligible to claim back a portion thereof for approved and accredited training initiatives and interventions (via Mandatory and Discretionary Grants).

The following types of grants could be applied for by either public or private institutions within the maritime sector:

- **Mandatory grants**: An employer with an annual payroll of over R500 000, is required to pay a skills development levy to SARS amounting to 1% of their payroll. These Employers can claim back up to 50 % of the Skills Development Levy (SDL) to train or assess staff by accessing the Mandatory Grant (Workplace Skills Plan / Annual Training Report) from the SETA with which the company is registered.

- **Discretionary grants**: Regulations issued by the Department of Labour (DOL) in terms of the Skills Development Act, 1998 (SDA) and the Skills Development Levies Act, 1999 (SDLA) make allowance for the discretionary use of a percentage of Skills Development Levies (SDL) by a SETA (now administration of DHET). The amount allocated to Discretionary Funding in terms of these regulations may be combined with rollover grant money (levies that have not been claimed in the form of grants by employers in any financial year) and used by the SETA for interventions and initiatives defined as strategically important for the development of skills within the scope of its economic sector.

  The SETA Board determines the areas of strategic importance for the sector by assessing information from Mandatory Grant applications, the Sector Skills Plan (SSP) and alignment to National Skills Development Strategy (NSDS) and other national, regional, and sectoral priorities.

- **Special Funding**: Special Funding is money applied for by a SETA from the National Skills Fund (NSF). It is aimed at funding sector specific special projects, such as accelerated learnerships to aid constituted levy payers in meeting regulatory competency requirements from the workforce such as the FAIS Act, ABET training, HIV training and other specific training needs identified as critical to the sector.

7.1.3 Other sources of skills development, education and training funding

Evidence shows that other South African economic sectors engaged in extensive lobbying with public and private sector stakeholders prior to embarking on strategic large scale skills development programmes. The more successful interventions were based on reliable data obtained through extensive research and feasibility studies. Research determined the skills development strategy, programmes to address scarce and critical skills and funding requirements to meet industry current and future skills demands. An example of a successful intervention is the Business Process Outsourcing and Off-shoring Sector Support Facility (BPO&O SSF) programme (partnered by the dti and the SA Business Trust). A case study is presented in Annexure F.

The list below identifies currently available skills development funding in South Africa. This list is by no means exhaustive and requires further investigation. The following funding opportunities exist:

- **ASGISA**: ASGISA has an Infrastructure Investment Program.
- **Development Bank of Southern Africa (DBSA):** The DBSA is a South African controlled regional development bank that focuses on the financing of infrastructure and which has established a PPP Project Finance Fund to support black contractors. As part of its triple role of lender, advisor and partner, the DBSA combines finance and knowledge to resolve development challenges. DBSA services are grouped into five categories, namely, finance; consultancy; technical assistance; information and knowledge about development. Special mechanisms are often created to provide the above services. For example, the DBSA established a Development Fund with the vision of becoming a leading catalyst of capacity building in South Africa.

- **Industrial Development Cooperation (IDC):** The IDC is a government-owned development finance institution that has put in place a BBBEE finance policy and offers debt, equity and equity-like financial products
- **Technology and Human Resources for Industry Programme (THRIP):** THRIP supports research and technology development, and aims to enhance the quality and quantity of appropriately skilled people. THRIP supports all companies undertaking science, engineering and technology (SET) research in collaboration with educational institutions and will consider the support of projects in which the primary aim is to promote and facilitate scientific research, technology development, and technology, diffusion, or any combination of these. The maximum level of THRIP funding per grant holder will be set at R8m across any number of projects per annum.
- **Inter-Government Funding:** The National Research Foundation (NRF), the Department of Agriculture, Forestry and Fisheries (DAFF) and the Department of Environmental Affairs (DEA) jointly support the activities of the South African Network for Coastal and Oceanic Research (SANCOR). SANCOR promotes, facilitates and co-ordinates excellence in marine and coastal research and education for the benefit of South Africa.
- **The Public Investment Corporation (PIC):** The PIC is a South African government pension fund manager and investor which has established the Isibaya Fund targeted at social projects. Isibaya addresses infrastructure and employment issues of previously disadvantaged South Africans.
- **Umsobomvu Youth Fund:** This is a national government fund of funds and SME program support provider whose target constituents are black South Africans aged 18-35. Umsobomvu has a number of funding programs and partnerships available to black South African youth.
- **National Student Financial Aid Scheme (NSFAS):** The National Student Financial Aid Scheme (NSFAS) was set up to help needy South African students to further their education at public universities and Further Education & Training (FET) Colleges. Funding is for a first undergraduate degree or a National Certificate (Vocational) course at an FET College. This assistance may be in the form of a loan or bursary. Bursaries are available for specific fields of study - teaching, accounting and actuarial science, social work, and various scarce skills study fields (e.g. IT, engineering, etc.). There are also bursaries for the National Certificate (Vocational) courses at FET Colleges. NSFAS is currently being reviewed to be more effective
- **The Kagiso Trust**: Kagiso Trust is one of South Africa's most respected, leading-edge, non-government developmental finance organisations. It is nonpartisan in character and promotes non-racialism and reconstruction and development in South Africa. Kagiso Trust seeks to improve the quality of life of poor and marginalised people. It regards development as an integral part of transformation and social change, especially in the context of the historic deprivation and poverty which is faced by millions of South Africans. Over the last two decades of its existence, the trust's development objectives have adapted to the changing circumstances.

- **National Research Foundation (NRF):** Funding is available through the NRF's Research and Innovation Support Advancement (RISA) grant and knowledge management monitor unit. It focuses on the award of scholarships, bursaries, fellowship and benchmarking financially.

The list below identifies a sample of private funding currently available for skills development in South Africa. This list is by no means exhaustive and further investigation is recommended, especially with regard to pension and investment funds and corporate CSI funding. The following funding opportunities exist:

- **Business Partners:** Formerly the SA government owned Small Business Development Corporation, Business Partners, according to the South African Venture Capital and Private Equity Association (SAVCA) is one of the largest private equity financiers of BBBEE transactions annually.
- **ABSA BBBEE Finance:** One of SA's largest banks, ABSA has established a "BEE Incubator Fund" (and an outsource contracted Incubator Support and Mentorship Program) and has created an empowerment transaction division and entered into partnerships with the IDC and the NEF to provide further capital to black business in South Africa.
- **Anglo Zimele:** Anglo Zimele is the Anglo American Group's enterprise development fund that focuses on funding black emerging companies in South Africa.
- **Sanlam Private Equity:** In 2007, Sanlam Private Equity launched four funds focused on BBBEE transactions, making the company one of South Africa's largest asset managers with significant allocations for BEE deals.
- **Ethos Private Equity:** Voted the number one private equity firm in South Africa in 2007, in October 2006, Ethos closed the largest private equity fund in South Africa, the US$750 million Ethos Fund V. A significant allocation of the fund has been earmarked for BEE transactions.
- **Brait Private Equity**: Established in 1991, Brait Private Equity is the largest independent South African private equity management firm and has recently established a new BEE investment strategy.
- **African Scholars' Fund for Further Education and Training Colleges (FET):** This fund provides scholarships and bursaries for poor PDI individuals from Northern and Eastern Cape and Southern part of North West Province. The minimum requirement is a. Grade 10 including maths and Science.
- **Rural Education Access Programme (REAP):** The Rural Education Access Programme assists rural students from poor communities to access tertiary education. REAP also provides a programme of support for these students to enable success with their studies. REAP is not a bursary scheme - it calls on state mechanisms to assist poor students and provides add on value necessary for success. It operates in all nine provinces.
- **Association for Educational Transformation (ASSET):** ASSET operates in the Western Cape and offers bursaries for studies at public universities and FET Colleges in the Western Cape.

7.1.4 Individual Financial Aid - Study Loans & Scholarships

Institutions and organisations also offer students financial aid guidelines in the form of dedicated offices and administrative personal, booklets, applications forms etc. information is also readily available via the various institutions' websites. The NRF, FET, REAP and ASSET identified above also provide individual financial aid. The list is by no means exhaustive. The following funding opportunities exist for individual funding:

- **Study Loans**: In the event of an individual wanting to further his/her education and cannot do so due to a lack of finances, that student is able to receive Financial Aid in the form of a Bursary, Scholarship or Student Loan. A few Organizations offering Student Loans include Standard Bank, ABSA, FNB, Eduloan and the NSFAS.
- **Scholarships**: Many large corporates and SETAs offer individual bursaries and scholarships to aid scarce skills development in their field of expertise. Examples of scholarships include the Rhodes scholarship; Mark Shuttleworth Foundation; The Tomorrow Trust and specific faculties of Universities.
- **Studies Trust**: Preference is given for programmes in Agriculture and Education, and for applicants from rural areas). Partial bursaries are provided for Commerce, Engineering, Hospitality & Tourism and Sport Science/Management programmes. Full cost bursaries are provided for Commerce and Engineering programmes.
- **Ziphakamise**: Ziphakamise is a Christian-based organization, operating in Southern Kwazulu Natal that contributes meaningfully towards upliftment, by assisting and empowering communities through development and training.
- **USSAS**: University Scholarships for South African Students is a US based tax-exempt charitable organization that offers scholarship opportunities to South African students who would not otherwise be able to pursue their dreams of a university education. Since 1990, USSAS has offered scholarships at South African universities and Technikons to more than twelve hundred young African, Coloured, and Indian men and women of South Africa. USSAS now focuses its support on young people who are committed through their studies and community action to the fight against HIV-AIDS in South Africa.
- **Ubuntu Educational Fund**: Ubuntu provides orphaned and vulnerable children and their families with an empowering environment and access to opportunities and services that will see them through higher/further education and world of work. Ubuntu operates in Ibhayi Township, Port Elizabeth, and reaches thousands of children and their families with a comprehensive set of educational, health and psycho-social interventions.
- **FUNDISA**: The Fundisa Fund is a supplementary savings option that can be used to fund a child's tertiary education at any public institution within South Africa. It may be used in conjunction with any student loan; bursary or scholarship obtained via NSFAS or any other financial institution but is not available to students studying at private institutions.

7.1.5 South African/Foreign donor and funding partnerships

Many foreign donor agencies are actively investing in education and skills upliftment programmes in South Africa, most notable are USAid and the GTZ. The section below provides examples of SA/Foreign donor education and training funding partnerships.

- **US Agency for International Development (USAid)**: Twelve rural Further Education and Training (FET) facilities in South Africa have received a major cash injection from the US Agency for International Development (USAid) to boost skills development and training. The US-South Africa Partnership for Skills Development, worth US$6.7-million (more than R50-million), was launched on 20 October 2009 at the Waterberg FET College in Mokopane, Limpopo province. The scheme aims to strengthen academic programmes, develop lecturers' training skills and bolster student support services, not only in Limpopo, but at colleges in Mpumalanga and Northern Cape provinces as well. The Mpumalanga beneficiaries are the Ehlanzeni, Gert Sibande and Nkangala FET colleges. In Limpopo the Lephalale, Capricorn, Letaba, Sekhukhune, Mopani South East, Vhembe and Waterberg FET colleges will benefit, as will the Northern Cape Rural and Northern Cape Urban FET colleges.
- **US exchange opportunities**: Supervised by the American Council on Education (ACE) and American Association of Community Colleges, the programme aims to also create partnerships with the private sector in South Africa and offer exchange opportunities with US colleges and universities. Some of the US academic partners are the Bronx Community College in New York; the Minnesota State Colleges and Universities System; National Centre on Education and the Economy, based in Washington DC; Springfield Technical Community College in Massachusetts; and YouthBuild International, which is based in Boston. The programme includes a labour market research component, which has been allocated $320 000 (more than R2-million) matching training at colleges to demands of the marketplace.
- **Agence Française de Development (AFD)**: In September 2010 the Development Bank of Southern Africa (DBSA) in partnership with the Industrial Development Corporation (IDC) and the Agence Française de Development (AFD) entered into an agreement which will enable a R55 million capacity building fund to support the Pan-African Capacity Building Programme (PACBP) earmarked to address the scarce skills challenges within the infrastructure development arena in Africa.

- **Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ)**: As an international cooperation enterprise for sustainable development with worldwide operations, the federally owned Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH supports the German Government in achieving its development-policy objectives. It is based in Eschborn near Frankfurt am Main. The German Federal Ministry for Economic Cooperation and Development (BMZ) is its major client. GTZ also operates on behalf of other German ministries, partner-country governments and international clients, such as the European Commission, the United Nations, and the World Bank, as well as on behalf of private enterprises. GTZ works on a public-benefit basis. Any surpluses generated are channelled back into its own international cooperation projects for sustainable development. GTZ has been instrumental in funding skills development in South Africa over the past decade and has close relationships with the SA government, DOL, DHET and SETAs.

7.1.6 South African Maritime Stakeholder views on funding

This section encapsulates the key themes identified through the analysis of stakeholder interview data as contained in the analysis instrument presented in Section 2.

It is noted that the qualitative analysis of stakeholder interviews is based on perceptions captured by respondents interviewed. Hence, there may be some comments presented that may need to be tested for accuracy of content.

Analysis of questions asked pertaining to funding highlighted the following:

- Government and Industry stakeholders indicated that a good relationship has been established with the Transport SETA and funding has been obtained for skills development at organisational level.
- Stakeholders across all stakeholder groups stated that strategic government funding from the National Skills Fund is urgently required to enable development of a critical and scarce skills pool matching the economic growth of the sector.
- All large employers from industry stated that they will continue to self-fund, co-fund and partner with institutions but expressed concern that their efforts are not sustainable without government assistance.

Stakeholders were asked about where past funding received came from to gain a sense of who the key funders for the South African maritime sector are currently. The following limitations to funding were found from the analysis of interviews:

- Insufficient funding for the maritime sector: Many stakeholders were of the opinion that funding is currently insufficient. Industry and Education and Training stakeholder groups further indicated that they are unsure of how to access funds for skills development in the maritime sector. The following quotes illustrates this theme:

> *"There is not enough money being pumped into the maritime sector…. the constitution should also be such that incentives attract individuals into the maritime sector".*
>
> *"Maritime only contributes 8% levy income to TETA so understandably does not get the same priority attention as for example the taxi industry".*
>
> *"I am unsure of how to access funds for skills development"*

- Department of Transport (DoT): Funding was received from Department of Transport in 2002 to develop students into seafarers. However, the following statement was made by a Government stakeholder, which is of concern and may need to be explored further:

> *"Out of 29 of them, only one passed. Due to the lack of success of money spent, the department decided to pull out the funds".*

- TETA: TETA provide funding. However, analysis shows that funding is insufficient. As quoted:

> *"The funding is not nearly enough"*
>
> *"TETA does not have enough funds available to meet the industry's needs".*

- NSF: Analysis shows that all stakeholder groups are aware of funding from the NSF. The analysis instrument highlighted the current lack of sufficient awareness of the maritime sector by the NSF, which could be the reason for limited funding. The following quotes illustrate limitations for NSF funding:

> *"The DOT in partnership with SAMSA and TETA submitted a proposal to NSF during the last funding window but unfortunately to date no feedback has been received from the DHET".*
>
> *"The NSF does not yet understand the needs of the maritime industry. This implies the need to market the industry to get funding".*
>
> *"The only visible solution is a massive contribution by the NSF".*

Stakeholders who were interviewed were further asked about what funding mechanisms should be considered for skills development maritime funding. The key theme highlighted through the analysis instrument was funding through a **Public-private partnership (PPP) approach** where industrial PPP clusters could be formed. As stated,

"*Clearly the case exists for strategic partnerships and funding models involving public private partnerships to supply the necessary funding required to sustain SA maritime training and education*".

PPP's are discussed in greater detail in Section 8.2 (strategic partnerships).

The study further identified some solutions to the funding challenge, which are highlighted below:

- Maritime Skills Development Fund: A possible solution that could be investigated is the creation of a Maritime Skills Development Fund, created through initial government "seed" funding and private funding from industry. Although it is acknowledged that this option could result in an administrative and management burden, a solidly developed system will allow cadets to get to sea and become certified seafarers. Under this system, similar to learnership agreements, cadets would enter into contracts and once certified and earning an income, would be able to repay a portion or all of their "sea time funding" back into the Maritime Skills Development Fund thereby creating a sustainable funding model.
- Corporate Social Investment: All companies are required to spend 1% of NPAT on corporate social investment (CSI) projects. Often these organisations do not know where to spend money that will make a contribution to communities in South Africa. It is worthwhile collaborating with all identified maritime sector organisations to raise their awareness of the need in the maritime sector and work together to identify CSI projects that can enhance the maritime industry. Examples could include the following types of projects:
  - Providing subsidies to a group of learners for studies within the maritime sector;
  - Providing maritime training to unemployed youth for lower-end skills that could be used by the sector; or
  - Developing and providing career guidance workshops in schools and enhancing the level of maths and science education in schools earmarked for developing future maritime sector professionals.
- Learn from past failures: There are key lessons to be learnt by past funding that has not impacted the maritime sector skills development in the way it was intended to. These include the following:
  - When spending funding on skills development, a **proper recruitment and selection process** must be implemented to ensure the correct pool of learners are selected and to decrease the risk of wastage and ensure that projects funded are successful. The maritime education system cannot become functional again if candidates are not screened before they are accepted for studies.
- Pursue aggressive marketing and education to inform possible funders: A theme identified through the analysis of stakeholder interviews was the recommendation to call on the DHET and the NSF to enhance their appreciation of the importance of the maritime sector. It will be critical to raise the DHET and NSF's understanding of the critical skills needs within the maritime sector.

The commissioning of this study by SAMSA compensates for a severe lack of accurate and reliable maritime skills development data.

The following summary provides key findings and recommendations based on study findings pertaining to funding:

Actions to maximise opportunities with the DHET and the NSF?

- SAMSA's strategy is aligned with the special emphasis that the DHET has placed on strengthening the skills and human resource base in South Africa.

- The NSF needs to make a substantial contribution to enable growth and job creation. However, there is a need to market the industry and create awareness of the critical skills needs to be funded before the NSF considers contributing through funding. It is recommended that SAMSA form a strong partnership with TETA and tackle and solicit special support from the NSF.

- Raise the awareness of the NSF for the need for funding to support skills development in the maritime sector.

- Determine when the next funding window is opened, plan and prepare a thorough maritime skills development submission for funding.

What actions can SAMSA take to maximise opportunities based on the Seta levy-grant system?

- It is recommended that SAMSA form an umbrella industry organisation to apply for large scale interventions on behalf of various role players in the industry.

- It is recommended that SAMSA share insights with SETA's board members to highlight maritime industries that operate to raise awareness for the urgency of skills development within the sector.

- Maritime sector stakeholders should influence SETA Boards to place the maritime sector as strategically important for grant funding that is available.

- It is recommended that investment be provided through subsidies for studies in various occupations in the maritime sector.

Actions to maximise opportunities based on other sources of funding available in South Africa?

- **Agencies that provide funding need to be made aware of the skills needs that exist in the maritime sector. SAMSA to identify those funding agencies that are likely to support maritime sector skills development interests. It is recommended that SAMSA or other key maritime sector drivers collaborate and determine how to nurture relationships with funders that could culminate in funding for organisations or individuals in the sector.**

- **A winning strategy will be if the maritime sector is identified as an ASGISA priority sector based on its economic contribution and potential to offer jobs.**

- **Further research will be required to develop a funding model which will enable its skills development strategy.**

Recommendations

- **Creation of a Maritime Skills Development Fund needs to be investigated. This could be created through initial government "seed" funding and private funding from industry. Although it is acknowledged that this option could result in an administrative and management burden, a solidly developed system will allow cadets to get to sea and become certified seafarers! Under this system similar to learnership agreements, cadets would enter into contracts and once certified and earning an income be able to repay a portion or all of their "sea time funding" back into the Maritime Skills Development Fund thereby creating a sustainable funding model.**

- **Learn from past funding failures. SAMSA, in collaboration with all maritime sector industries applying for funding, must ensure a solid and informed skills development programme that is informed by research and developed with sound project management principles so that it has a high probability of success.**

- **Ensure proper recruitment and selection of learners for skills development in the maritime sector.**

7.2 Strategic Partnerships

The South African maritime sector has not leveraged the level of international partners that is required to successfully become a labour supply nation.

In this section, details of possible partnerships that SAMSA may need to enable a skills development strategy and implementation plan is discussed. Particular attention is given to the possibilities of Public Private Partnerships (PPPs) as evidence show that extremely successful skills development programmes and training acknowledged globally, are provided by a number of employers including ship owners in the maritime sector.

It is clear from evidence examined that all 11 South African DOT agencies, including SAMSA, operate within a regulated infrastructure, however this does not mean that the private sector cannot be involved in its planned skills development strategy. The scale and manner in which the private sector will be able to participate and contribute to the process e.g. training provision operation will require further investigation and will most probably differ between stakeholders and skills development projects.

The international literature review conducted found that global government maritime authorities engage in public private partnerships. It was found that overwhelming evidence of partnerships exists between port authorities entailing large infrastructure development. However, limited evidence of partnerships exist that focus on skills development and training specifically. Further research is merited in this regard.

7.2.1 Partnerships in other countries

Partnerships differ from country to country. Some are using PPPs, mainly in the port and airport sectors. Other countries are planning to use PPPs soon, or to extend their usage to other sectors, like road and rail.

In most cases it appears that projects are customized to meet specific development or transformation strategies based on country/sector specific needs and requirements and sector or industry specific needs and conditions.

The following are two examples of maritime education and training partnerships that were identified through this study:

- The newly formed Nigerian Maritime Academy is regulated by the “Maritime Nigerian Academy Act”. The Authority is playing a major role in facilitating an international public private partnership with countries such as Greece and Norway to enable establishment of the academy (NIMASA).
- Apart from various international training conventions, the Indian Maritime University (IMU) facilitates and promotes maritime studies, research and extension work. The University partners with a substantial number of private institutions to standardize the quality of education and training and also provides academic supervision over training content and curriculum. As there are a sizeable number imparting maritime

Analysis of stakeholder interviews found that South Africa had partnerships with international organisations that worked well while there was funding but that the partnerships were not nurtured when funding ended.

7.2.2 Partnerships to be leveraged by the South African maritime sector

In July 2000, a PPP Unit was established within the National Treasury, under administration of the Department of Finance, tasked with regulating PPPs in accordance with constitutional and statutory requirements. The PPP Unit's responsibilities also include assisting national and provincial government departments with technical and financial advice when preparing, procuring and implementing PPPs. A "PPP Manual" and "Standardised PPP Provisions" were published in 2004 offering detailed instructions and guidelines. Municipal PPPs are governed by the "Municipal Finance Management Act" (MFMA) and PPPs involving National, Provincial Governments and Agencies by the Public Management Finance Act (PFMA).

The following organisations and stakeholders have been identified who could support and collaborate with SAMSA's skills development strategy. This list is not exhaustive and additional research is required:

Table 5: List of support organisations and stakeholders

Area of jurisdiction	Organisations who could support and collaborate with SAMSA's skills development strategy
International	International Maritime Organisation (IMO); International Labour Organisation (ILO); European Union; International maritime authorities (specific countries to be targeted must be included in skills development strategy e.g. India, US, UK, Australia, Singapore, the Netherlands and Norway); International Chamber of Shipping (ICS)
Regional	African Union; African governments; African Maritime Authorities (NWAMSA - North West Africa Maritime Safety Agency); African Maritime Education & Training Institutions including academies and universities
National	Department of Transport; Department of Higher Education and Training; Department of Labour; Department of Environmental Affairs and Tourism; Department of Agriculture, Department of Fishing and Forestry; Department of Trade and Industry; The Presidency.
Transport Sector	Other DOT agencies especially the NPA; The South African Navy
Provincial	Provincial and local government, municipalities and marine sectoral associations and industry representatives bodies such as the Ethekwini municipal maritime cluster
Employers and Industry (Private Sector):	National and international ship owners; Shipping companies; Fishing industry; Boat builders, inland vessels etc.

Area of jurisdiction	Organisations who could support and collaborate with SAMSA's skills development strategy
SETAS	Transport Education and Training Authority (TETA); Manufacturing Education and Training Authority (MERSETA); Tourism and Hospitality Education and Training Authority (THETA); Mining Quality Authority (MQA); FOODBEV, AGRISETA; SERVICE SETA and SASSETA
Public & Private Training Providers	Higher Education and Training (HET) Universities & Universities of Technology; Further Education and Training (FET) Colleges
Research Institutions	International maritime education and training institutes

The analysis instrument identified two key themes regarding strategic relationships. The first theme includes the lack of clarity of occupations that form part of the maritime sector which prevents skills development partnerships. The following quote is descriptive of this theme:

"*Fishing, maritime mining and artisans for boatbuilding are not regarded as maritime. Maritime is only perceived as seafaring and therefore partnerships are difficult to develop*".

The second theme is the challenge of 'silo syndrome' in the industry, which stems from various SETA's housing maritime skills. This theme is illustrated through the following quotes:

"SETAs housing maritime skills should work together".

"Everyone works in silos and is too number driven".

"Because of reporting requirements based on Service Level Agreements with the DHET, SETAs are reluctant to work in partnerships/synergy as the competition is for who would then be able to report on the results, numbers etc. In effect the target driven system is affecting SETAs working in partnership to achieve skills development targets".

Skills are lying with various SETAs as follows:

- MERSETA: engineering, artisans, ship repair and boatbuilding
- FOODBEV: Fishing and fishing processes
- AGRISETA: Aqua farming
- SERVICE SETA: Management
- SASSETA: Navy including navigation, maritime law
- MQA: Deep sea mining, oil, etc.

The following summary provides key findings and recommendations based on study findings pertaining to partnerships:

Recommendations

- Skills requirements stretch across various industries.

- Alignment between government departments and SETAs should take place. This requires a well planned strategic approach.

- Stakeholders are encouraged to be pro-active.

- Official partnerships should be formed between Department of Transport, SAMSA, the DHET and TETA.

- Partnerships should be formed with all SETAs playing a role in the maritime sector. These include TETA, The Foodbev SETA, AGRI-SETA, Services SETA, MERSETA and MQA.

- Strategic partnerships should be developed so that South Africa's maritime sector stakeholders and local partners can understand international requirements and identify international opportunities.

- International partners should include the IMO, ILO, the EU and international maritime authorities.

- Regional partners should include African maritime authorities, training institutions and governments.

- Local PPPs should be encouraged to leverage the maximum possible funding for the maritime sector.

8 Findings and Analysis: Supply and demand of Maritime Skills in South Africa

"There are no clear numbers for the demand and supply of skills, but we all know that the industry worldwide has a high shortage of skills"

Government Stakeholder interviewed

This chapter responds to the following study objective:

Study objective 4: Determine the number and types of skills available in South Africa and supply and demand dynamics surrounding South African maritime skills.

Skills supply and demand is considered in terms of three occupational categories, namely **seafarers, technically skilled occupations** (engineers, artisans and technicians) and **management professionals**. These occupations are in demand in each of the primary maritime sub-sectors, as well as the industries within the operational support services cluster.

Analysing existing data to extrapolate numbers in terms of skills supply and demand proved to be difficult as limited data exists for the maritime sector and data is dispersed across SETA's due to the sector being so fragmented. This chapter presents a summary of the findings for those skills available in South Africa where skills supply and demand numbers could be collected and analysed.

This chapter firstly focuses on seafarers (Section 8.1). The importance of seafaring occupations is highlighted. The current number of seafarers in South Africa is identified and the current demand is depicted. The current supply of seafarers is then identified by considering numbers obtained from all institutions that provide seafarer training and certification. Estimating skills demand for South Africa is reflected upon and the berth bottleneck is also highlighted.

In Section 8.2, the demand and supply for non-seafaring occupations is considered within the maritime sector. The proportion of the workforce requiring maritime specialisation is considered and analysis findings are presented. An overview of pertinent supply-side dynamics is provided, followed by a consideration of the supply dynamics of non-seafaring maritime qualifications by education and training institutions.

The chapter concludes with proposing some measurement solutions for consideration to overcome existing limitations in measuring the size and scope of South Africa's maritime sector.

8.1 Demand and supply dynamics of seafaring occupations

Seafarers are employed in offshore and shore-based capacities in a number of maritime industries. They are required, in each of the sub-sectors to varying degrees.

This section aims to clarify the nature and extent of the shortage of seafarers in the South African maritime sector by considering the number of certified seafarers registered in the country, the shortage in seafarers reported by industries within the sector, and the rate of supply of qualified seafarers.

8.1.1 The importance of seafarers

There is a compelling argument to be made for considering seafarers as the core occupation for the national maritime sector. The following study findings support this argument:

- The policy commitment to growing the Shipping Transport industry necessitates growth in the supply of seafarers.
- Even with a limited Shipping Transport industry and a services focus in the local sector, a supply of seafarers with ports specific qualifications and experience is crucial. For service-related industries such as Ports Services and Occupational Support Services, findings from the analysis instrument and findings from the desktop analysis[66] indicate that the quality of maritime services is significantly enhanced by the shore-based employment of sea-going experienced personnel.
- The global shortage in officers presents an opportunity for becoming a labour supply nation to the global Shipping Transport industry, which in addition to creating jobs for citizens has its advantages for the national economy. It is a benefit to consider the financial contribution provided to leading maritime nations who supply seafarers. An example includes the Philippines who reported that in the first quarter of 2010 the value of remittances by Philippine sailors was approximately $888.9 million[67]. The potential benefits of South African labour participation in the crewing of ships are apparent. Findings such as the opportunity of South Africa being favoured globally due to being an English-speaking multi-cultural nation, suggests that South Africa possesses characteristics that make it competitive with regards to labour supply.

[66] For example, the Australian Shipowners Association. (1999)

[67] The Trade Union Congress of the Philippines. Asia Pulse, May 24 2010.

8.1.2 The current number of certified seafarers in South Africa

This section considers the current number of certified seafarers in terms of the number of officers and the number of ratings (non-officer class crew members).

According to SAMSA's records, there are 5490 qualified officers certified in South Africa, as depicted in the Table below, which illustrates the number of certified officers in South Africa according to industry clusters. The data indicates that the largest proportion of officers is registered in the commercial fishing industry, followed by shipping transport and then ports. This is a reflection of the relative sizes of the industries within the South African maritime sector. There are only 223 more deck officers than engineering officers nationally; however the ratio of deck to engineering officers in ports services is noticeably larger than the same ratio in the other industries reported.

Table 6: Number of certified officers in South Africa[68]

Officers	Shipping Transport	Ports Services	Commercial Fishing	Officer Category Totals
Deck Officers	935	296	1620	2851
Engineering Officers	774	56	1728	2558
Totals	**1709**	**352**	**3348**	**5490**

The accuracy of the above data was tested by comparing SAMSA's data to data available for the commercial fishing industry, which provides the most comprehensive publicly available data on crews. It is the largest of the primary maritime industries in terms of workforce, with 13,117 personnel employed on vessels of which 2,445 are classified as skilled fishers[69]. Considering that the reported number of skilled fishers is from 2003, it compares favourably with the SAMSA numbers and suggests confidence in SAMSA data's utility.

While the account of certified officers in South Africa can be accepted as reliable, the numbers on certified ratings cannot since there is a challenge currently in keeping track of maritime data at a national level. The absence of an exhaustive account of ratings implies that, at least until an effective monitoring solution is implemented, national skills planning will be undermined by a lack of precision. The table below reports the number of certified ratings in South Africa according to industry clusters. There are only 1287 qualified ratings registered in the SAMSA database. Certification as a rating is not conventionally considered a prerequisite for employment and there is therefore no mandatory registration. This low number is partly a function of the less formalised pathway for securing a position in the sector.

[68] Source: SAMSA data reflecting STCW employees. 2010.

[69] Economic & Sectoral Study of the South African Fishing Industry, 2003

Table 7: Number of certified ratings in South Africa[70]

Ratings	Shipping Transport	Ports Services	Commercial Fishing	Ratings Category Totals
Deck Ratings	828	46	24	898
Engineering Ratings	376	13	N/A	389
Totals	**1204**	**59**	**24**	**1287**

Current number of seafarers

The current number of seafarers in South Africa totals 5,490 officers and 1,287 ratings

8.1.3 The current supply of seafarers in South Africa

To draw useful conclusions on the supply of seafarers it is important to consider the numbers of cadets graduating from education and training institutions. Training institutions provide the necessary theoretical training that cadets must complete before being eligible for securing time at sea. It is noted that regardless of the numbers completing theoretical training however, the supply of officers is determined by the number of cadets that complete time at sea and receive certification.

There are a total of 14 training institutions in South Africa that offer SAMSA accredited courses which, coupled with time at sea, lead to seafarer certification[71]. The following table illustrates the number of officers completing their theoretical training every year.

Table 8: Numbers of Officers completing theoretical training per year

Officer Qualifications	Completing Theory Requirements
New Officers	
Deck Cadets (accelerated programme)	49
Deck Cadets (S1/S2)	72
Engineering Cadets (accelerated programme)	65
Engineer Cadets (S1/S2)	58
New Officers Totals	244
Senior Officers	

[70] Source: SAMSA data reflecting STCW employees. 2010.

[71] Marine Notice No.24 of 2008

Second & Chief Engineer Officer (S3/S4)	61
Chief Mate & Master (S3/S4)	43
Senior Officers Total	104
Qualifying Officers Totals	**348**

Across the 14 institutions offering seafaring courses accredited by SAMSA that lead to certification, an average of 244 new cadet officers graduate their theoretical training from accelerated cadet programmes or S1/S2 training. In addition, an average of 104 existing officers completes their theoretical component for their senior officer certification. This average was calculated by collecting data from the institutions over a four-year period.

In terms of ratings, only four of the 14 institutions offer SAMSA accredited courses that lead to certification. The data indicates that cumulatively these institutions graduate 50 candidates per annum, 35 as deck ratings and another 15 as engineering ratings.

Annexure J provides a list of institutions offering SAMSA accredited training that leads to seafarer certification.

A note on ratings: the data on ratings supply is clearly not comprehensive. Nor are the dynamics of crewing clear for most maritime sector industries included in the survey. According to records, there are more certified officers than ratings. Officers earn leave at a better ratio than ratings, hence, there is a need for more officers to be available to a ship owner over a year than STCW ratings when manning a vessel.

The absence of an exhaustive account of ratings will continue to undermine national skills planning unless a suitable solution for monitoring numbers is devised.

Current supply of seafarers

The current supply of new seafarers in South Africa totals 244 officers per year

8.1.4 The current demand for seafarers in South Africa

The table below is adapted from TETA's scarce skills list, which is the only database available at the time of the research to illustrate the current demand for seafarers in South Africa.

Table 9: Reported shortages of seafarers[72]

Seafarer Categories	Shortages Reported
Deck Officers	891
Engineering Officers	592

[72] Adapted from the TETA scarce skills list, 2010

Total Officers	**1483**
Deck Ratings	420
Engineering Ratings	10
Total Ratings	**430**

According to the data, there is a shortage of 1,483 officers and 430 ratings according to data extrapolated from the TETA scarce skills list (depicted in Table 8). TETA's shortage of seafarers has been determined from consultative sessions with the sector on the finalised scarce skills list[73]. Further breakdowns of this data according to seafarer shortages by industry categories, are represented in Annexure J. The data is extrapolated from TETA's Sector Skills Plan, which is collated from the Workplace Skills Plans of levy paying Employers.

Current shortage of seafarers

The current shortage of seafarers in South Africa totals 1,483 officers and 430 ratings

There are few levy paying Employers and the numbers presented are not the realistic figure of skills demand for the country. The next section presents global demand for seafarers and estimated skills demand for South Africa based on economic participation percentage in global trade.

8.1.5 Estimated skills demand for South Africa

If South Africa is to participate as a global maritime country, it is worthwhile considering SA's participation in international trade to determine the projected number of seafarers needed to help grow the sector within the country and globally.

South Africa's participation in international trade, based on the percentage of world tonnage carried to and from South Africa, implies that the country should have 300 ships in its register, which implies the availability of 12,000 seafarers[74]. Attaining 300 ships under South Africa's register or having all cargo transported on our own ships, may not be realistic. However, this model illustrates a scenario. The ultimate aim is to sustain the maritime sector and grow it, which requires skilled people and available capacity to create jobs for people in the maritime sector. Considering estimated demand using South Africa's participation in international trade provides Decision-makers with a useful option in scenario planning.

In terms of the demand side, there are three skills demand drivers identified by SAMSA, namely:

[73] TETA populated the occupational categories and codes and populated numbers after having gone through consultative sessions with the maritime chamber (mancom) and considered to some extent applications for funding recommended on an annual basis.

[74] SAMSA inputs at discussion workshops on 31 March and 5 April 2011.

- **The ship register**: this includes trading ships or merchant vessels that move from South Africa to other countries with cargo. In 1990 South Africa had 71 ships in its register. In 2010, South Africa had one ship and in 2011 the country has no ships registered. Aspects driving the ship register are ownership, mortgage ranking, health of seafarers, tonnage tax and other incentives.
- **Skills availability**: this is the focus of the current research study and has proved difficult to determine due to the lack of a consolidated database of accurate numbers collated for the maritime sector.
- **Ancillary support**: this is any other support the ships will need to be inspected by SAMSA, repairs, other supplies, etc.

The above demand drivers are linked in the way that having ships in the register implies an opportunity for skills and job creation, as well as ancillary support services.

Economic participation increases the future need of skills demand for seafarers via a radical growth scenario. This implies that we must re-draw the map from secondary school and University as well as the ships to use to train these people. When considering the value chain for training seafarers, key inputs are the education system (quality training), the need for employers (foreign ship owners or South African registered ships for berth and training funds. These are all key to unlock the employment gap.

According to the pronouncement by SAMSA's CEO, he indicated that SAMSA is targeting 25 ships in 2020/2025. On average a vessel requires approximately 40 local people (20 people for each shift that take place). To reach this target implies a projected growth of 1,000 seafarers needing to be trained and available in South Africa.

SAMSA aims to target 25 ships in its register. This implies the need to train 1,000 seafarers.

A three to five year strategy must emerge out of this research. The strategy must be put in place with timelines – collaboration must be solicited by both Government and the private sector.

8.1.6 The seafarer berth bottleneck and officer supply prospects

For a number of years now the supply of certified seafarers has been severely constrained by the berth bottleneck[75]. Analysis from stakeholder interviews indicates that of the approximately 120 cadets completing S1 and S2 at South Africa's public training institutions each year, approximately one quarter to one third find a berth for the following year. Assuming this data is accurate; under these conditions South Africa could only produce 30 to 40 junior officers per annum. Analysis from interviews indicates the following:

- Past attempts to address the berth bottleneck have floundered. Respondents indicated that bureaucratic rigidities in the skills development system have created bottlenecks. As quoted:

[75] UKZN, 2002; Pimm, 2002

- "We have over the past seven years made several representations to the South African Government to support and fund seafarer training and produced a proposal four years ago with detailed costing on a plan to train 2500 seafarers, at 500 per annum over 8 years, which in turn, would create 25000 jobs in the industry. This proposal was sent far and wide and forwarded to the Ministries of Labour, Social Development, Transport and subsequently to SAMSA. We also arranged for the then Deputy President of our country to meet with the Chairman of our client in Japan to discuss funding by our Government for seafarer training, potential trade relations, and at the same time securing training berths for all our South African trainees. Unfortunately all our attempts came to nothing".

Analysis from interviews indicates that there is a joint initiative between SAMSA, the South African Maritime Training Academy (SAMTRA) and six shipping lines. This partnership aims to increase the number of secured berths for cadets to 90 from 2011, with the possibility of increasing the number of berths in subsequent years. The facilitating mechanism in the programme is the subsidising of the cost of berths with public funds through SAMSA. The initiative as it now functions, and with the intent of increasing berths to 250 a year, equips the maritime sector with the means of meeting the current officer shortage within a decade. However with the long-term policy objective of growing the sector and elevating South Africa's ranking as a maritime nation more may have to be done to increase not only the capacity of training institutions to supply cadets, but more critically the capacity of the system to berth cadets in order for them to qualify as certified officers.

The primary constraint to meeting the demand for seafarers is the lack of berths for candidate officers. The berth bottleneck is a current reality in South Africa that must be addressed for skills development to take place in the maritime sector.

Provided current initiatives to improve berth supply are successful, South Africa is positioned to meet officer shortages within a decade under static or moderate growth scenarios.

If policy initiatives to substantially accelerate maritime sector growth are implemented, additional skills development interventions are likely to be required.

8.2 Demand for non-seafaring occupations in the maritime sector

The scope of this skills study extends beyond the conventional focus on seafaring occupations that are key to the primary industry cluster Shipping. SAMSA's emphasis has been on seafaring skills, which is one of many skills sets required within the maritime sector.

This section considers the non-seafarer skills supply and demand dynamics in the other two primary industry clusters, namely, Resources (off-shore oil, gas and mining) and Leisure (focusing on boating and boat building). It is important to highlight the current skills dynamics in these sectors as they contribute greatly to the South African maritime sector.

Section 8.2.1 summarises key findings from engaging with primary cluster maritime industries, specifically offshore oil and gas and boating/boat building. Section 8.2.2 provides an indication of current employment in the maritime sector based on data sourced from companies identified as key within each of the seven maritime industries. Section 8.2.3 provides a further understanding of the maritime sector based on companies that were asked to report on maritime skills. In Section 8.2.4, an overview is provided of supply-side dynamics.

The section also considers the most pertinent skills supply issues for skills development planning in the maritime sector.

8.2.1 Trends found within the Resources and Leisure Maritime Industries in South Africa

8.2.1.1 Offshore oil and gas

"If South Africa has quality people in businesses, these businesses will grow the economy and create further opportunities"

Interviewee – Offshore Oil and Gas Industry

The offshore oil and gas industry is global rather than local and requires higher end skills. However, standards of education to upskill labourers for the industry, is not competitive. There is currently a gap between the quality and level of training provided by the SETA's and FET colleges and the requirement within the workplace for this industry. The SETA set-up is not providing what is required for competitiveness of the industry. As quoted:

> *"People being certified are not at the level needed for the job. In many instances, they don't have the basics. Our basic education system is not getting the job done for industry. Training standards and qualifications are not fit-for-purpose"*

Because of the global nature of the industry, many companies in South Africa currently fly employees to the United Kingdom to be certified in Opito standards since training is not offered in South Africa but is required for international work. There is a need to harmonise global standards and local requirements for South Africa to become competitive in the offshore oil and gas industry.

The nature of the offshore oil and gas industry is that it is project-driven, which implies that most people are employed on a contract basis. On the demand side, the South African Oil and Gas Alliance (SAOGA) have indicated that there is not a great need for additional skills in terms of numbers. There may be 6,000 employees contracted for a few months after which they do not have work until the next project is implemented.

The industry does not struggle to find required skills based on capabilities presented on curriculum vitae. However, the challenge is that there is a discrepancy between what is on paper and the capability in the workplace.

The sector currently has significant competence and activity in a number of areas[76]:

- **Upstream Ship Repair Hub**: The repair, maintenance and upgrade of various kinds of oil and gas marine vessels e.g. drilling rigs, pipe-laying vessels, various kinds of work barges. This labour intensive activity is currently centred in the port of Cape Town where a large dry dock and extensive supplier base provide the most attractive offering on the African continent;
- **Oil and gas logistics and distribution**. The Western Cape has been identified as a major logistics point for supply of the West African upstream sector. Aside from port and transportation activity, a number of global service companies have established major logistics and warehousing bases in the region;
- **Engineering services** that design, fabricate or construct specialised modules or facilities for the oilfields e.g. storage tanks, processing modules for offshore platform or onshore facilities, docking facilities, tugs/barges, civil structures, platforms etc. There is a large fabrication yard at Saldanha Bay dedicated to the regional upstream market.
- **Equipment and materials suppliers** providing a wide range of pumps, valves, pipes, motors, instrumentation, process equipment etc for the specialised needs of the upstream industry. Much of this builds on capabilities that have been developed for South Africa's mining sector.
- **General and technical support services** for the upstream industry. General services include legal, financial, IT, medical, hospitality, recruitment and many other services competitively supplied from South Africa. More technical services include a significant cluster of firms doing inspection and maintenance, training, diving services, ROV (remotely operated undersea vehicles) operation and repair, health and safety services etc.

[76] South African Oil and Gas Alliance. (Feb 2011). Upstream Oil and Gas Services & Equipment Sector Plan for inclusion in 2011/12 – 2013/14 Industrial Policy Action Plan. Prepared by Warwick Blythe

A number of critical constraints, largely in the hands of SOEs and government departments, need to be urgently addressed to ensure that the sector can expand rapidly and position South Africa a major regional hub for the oil and gas sector[77]:

- **Lack of support from TNPA** is the greatest constraint on the growth of the Upstream Ship Repair hub. This impacts the sector through underinvestment in infrastructure, unwillingness to make port space available, inconsistent and high pricing of facilities, poor scheduling of facilities and general lack of collaboration and engagement with the industry to resolve issues. All this has had a negative impact on global client perceptions and the industry's ability to deliver to clients. This contrasts very sharply with the proactive industry friendly approach being taken by Namport at the competing hub in Walvis Bay. At the root of this constraint is a fundamental conflict between Transnet's focus on generating profit from its core freight business and the wider mandate it has a port operator to support other sectors using South African ports.
- **Acquiring visas** for South Africans to access opportunities in Angola and to a lesser Nigeria is a key limitation on South African companies expanding business in these important oil markets.
- **Customs and excise regulations** and/or practices and the lack of a free zone in the Western Cape are deterrents to global upstream companies investing in distribution and supply base capacity in South Africa.

Training needs within offshore oil and gas:

- There is a high demand for offshore survival training;
- SAOGA are looking at international benchmarks in terms of initiatives and training globally so that South Africa can pull it's training to a global level;
- The offshore oil and gas industry wants to break into export. However, they are unsure of where to train the skills required for the potential export industry; and
- Opito training is required in South Africa. It will be necessary to identify the competitive advantages and purposes for Opito training.

Supply and demand-side dynamics:

- Collating accurate numbers for supply of skills in the offshore oil and gas industry is not yet possible. The offshore oil and gas industry do not have up-to-date numbers on skills supply or demand since there systematic studies have not been done. For this reason, inputs from the industry are predominantly qualitative in nature.

[77] South African Oil and Gas Alliance. (Feb 2011). Upstream Oil and Gas Services & Equipment Sector Plan for inclusion in 2011/12 – 2013/14 Industrial Policy Action Plan. Prepared by Warwick Blythe

- Findings from this study indicate a critical need in the offshore oil and gas industry for highly skilled people. There is a need for upskilling current skills in the industry to provide higher quality services.
- Companies within the sector have their own databases but are protective over their databases and seem unwilling to share these as there is poaching between companies. A study finding is that Workplace Skills Plans are regarded by the industry as not having integrity.
- A challenge with the industry is defining what it is. The offshore oil and gas industry can indicate the skills deficit once it breaks down the industry into sub-sectors (refining; ship repair; rig repair; oil and gas fabrication; logistics; engineering equipment). A detailed breakdown of the industry is needed.
- A critical area of shortage is people at supervisor level. Comparing the quality of engineers locally to global nations such as Norway, South Africa's skills pool is competitive. However, South Africa is in need of good middle management skills. Currently, Senior Managers are under great pressure as they often focus on operational level rather than the strategic level because of the skills gap at the Supervisory level.

Recommendation:

- The specific skills gaps within the offshore oil and gas industry must still be defined.

- The offshore oil and gas industry is in need of an accessible database for skills available in the industry (profiling skills) and accessibility to these skills on an as-needed basis. The database should be flexible in terms of resources available.

- Resolve the challenge of the basic and tertiary education system to prepare the level and quality of skills needed for industry.

- The offshore oil and gas industry recommend a skills development strategy that focuses on the current pool of skills partially employed in the oil and gas industry. The aim should be to improve their specialised techniques so that they can become better qualified and more productive in the long-term. The model also recommends building in a skills development strategy within large awarded projects to upskill people on an as-needed bases rather than a drive to train people when there may be limited demand for them. Quality training should be a key focus rather than training quantities.

8.2.1.2Boat building

The boat building industry is divided into 5 main categories namely:

- Building of boats (comprises the core boatbuilding industry sub-classified by type of vessel)
- The manufacture and trade in engines and engine systems (e.g. outboard, inboard, cooling and hydraulic systems, mounting equipment, stern gear and propellers etc)
- The manufacture and trade in marine equipment and accessories (e.g. boat building materials and equipment, boat care products such as paint and resins, boat covers, deck hardware, electrical and electronic equipment , personal gear, hardware etc)
- Consumer goods and services (e.g. charter/rentals, repairs, maintenance, retail, events management, yacht clubs)
- Business goods and services (e.g. consulting, design, surveying, training, government agencies etc)

The last four categories could be considered the support/auxiliary industry to the core boatbuilding industry

The boatbuilding sector can be divided as follows, with the contributions per sub-sector:

- The building of sailboats, comprising multi hulls (21 or 35%) as well as mono hulls (13 or 22%);
- Building of Inflatables accounts for (11 or 18%) – this incorporates the manufacture of inflatable, semi-rigid as well as rigid inflatable boats (RIB's);
- Motorboat manufacturers account for (6 or 10%), followed by manufacturers of commercial crafts such as fishing vessels, military craft and diamond vessels (5 or 8%); and
- Activity crafts–mostly kayaks and canoes account for (3 or 5%).

The sector is heavily export dependant, with over 80% of the industry involved directly or indirectly with exports. Small craft less than 10m in length are predominantly manufactured for the local market whilst multi hulls (catamarans) are nearly exclusively for exports. The sector is globally competitive, having won numerous international "Boat of the Year" awards and has major growth potential. However, significant growth and development constraints exist that require collective action to support the sector in realizing this growth potential.

Training needs and challenges:

Boat construction incorporates a full range of skills including: sail making, mast construction, rigging, upholstery, welding, engine installation and maintenance, electronics, hydraulics, electrical, plumbing, systems, air conditioning, fitting, marine equipment and installation, interiors, carpentry, flooring, sea trials. In addition to this, a boat builder will need generic administration and managerial skills: finance, human resources, project management,

materials/components ordering, stores, import/export, design.

The boat building industry has traditionally relied on in-house training that has been informal, inconsistently applied and production dependent. This has had a negative impact on the skills base and resulted in a technical deficit at shop-floor level and at middle management level where there is a knowledge deficit, including tacit marine knowledge gained through years of experience in the industry. Remuneration in the industry remains low with few opportunities for vertical growth for employees who remain unqualified. While the industry contributes to the national Skills Development Levy as legislated, the incumbent expenditure on training is piecemeal and uncoordinated. The cost and risk of training through the existing Seta structures is too high for many of the small and medium enterprise boat builders who do not have dedicated human resource or administrative staff. The knowledge gap between the level of school attainment and the requirements of the work place have a significant cost impact on boat production at shop floor level. The lack of formal specialisation at management level and the lack of managerial and business acumen is a cost to industry particularly in terms of industry growth and expansion.

The following are key findings for the boat building industry:

- The industry is susceptible to market conditions and staffing requirements vary according to the order book and the cycle of production. Many companies train employees in-house or source employees from other industries such as fibre glass canopy business or machinists from the clothing industry, but they do not necessarily have the marine specialisation skills required. Lean production demands also mean that off-site training is difficult to undertake. The introduction of a boat building apprenticeship will partially address this challenge.
- Due to the diversity of the sector, purchase of shelf companies and lack of awareness, industry employers are registered with several SETAs: Merseta, Teta, Sseta, Ceta, Chieta. This lack of cohesion creates a piecemeal approach to skills training in the sector
- There is a need for accredited short courses and a boat building trade and RPL. New entrants into the industry need to be skilled accordingly and boat building as a career needs promotion. It is important to point out that “production” boat yards require a higher level of specialisation from their employees while “custom build” boat yards require more multi-skilled staff with problem solving skills, able to apply basic principles in different contexts.
- The skills required for mast construction and sail making/sail rigging are not currently addressed by any accredited qualification or training provider and all skills training occurs “in-house” or through international principals who sometimes lack the insight into the labour issues particular to the South African context. The lack of job titles and OFO codes on the skills framework must be addressed for both these highly specialist sectors.
- The industry has inherited a large deficit in the formal schooling of employees who were prejudiced by the apartheid education policy and labour market. The needs of this group need to be addressed with some form of bridging skills acquisition. There has been limited uptake of ABET indicating that this is not the solution.
- Currently there is no recognition of prior learning for employees in the boat building sector, despite many of them having been in the industry for 10 – 20 years.

- There are currently limited vertical articulation options in boat building, due to the high levels of specialisation and the large gap between management and entry level workers.

Supply and demand-side dynamics

The total South African boatbuilding and support industry employs 4500 people and produces goods and service valued at R1.2 billion with 85% of the industry (according to turnover) located in the Western Cape. With the exception of 5 firms in the sector all others are SMME's.

In terms of supply in the industry, the following currently exists:

- Currently there is a 3 year full-time learnership qualification in "Yacht and Boat Building" registered on the NQF and offered by one FET provider. This qualification is dependent on learnership funding and due to the bureaucracy associated with these applications, boat builders have not engaged with the opportunity. The cost of the course is very high at R25 000 for six months FET instruction at False Bay College. This precludes PDIs from participating and currently there are no boat building bursaries available.
- Accredited short courses for boat building specific skills, for example, laminating, welding, marine electrical etc are not currently catered for and this is needed to up-skill the existing workforce. Recognition of prior learning is also a priority.
- In-house training continues to be the back-bone of skills training in the boat building workplace. This is due to the pressures of production, the lack of technical short courses and the red tape involved in accessing SDL funds for training.

The demand for skills in the industry:

- There is a need to promote equity positions at middle and upper management levels to address transformation in the industry. There is a need for supervisory and management skills to create better articulation between the large number of entry level employees and middle/upper management. The identification of "mentors" in this group will aid the "on-the-job" skilling of lower level workers.
- There is a gap between schooling / formal training structures and what is being demanded in the workplace.
- There is a significant need for artisans and technical experts to meet the rigorous demands of new products and innovation and technological developments.
- The largely "un-skilled" laminating work force need training to be able to embark on a career path in the industry and to address some of the quality issues encountered in production. In addition the skills needed for high level composite technical work are lacking.
- The scare and critical skills report was submitted to Merseta in late 2010 for inclusion in the Merseta SSP for DHET. The following skills fall in the absolute scarcity list (this refers to suitably skilled people who are not available in the labour market).

- 399709 Laminator; 324301 Boat Painter; 212307 Technical Director; 132102 Technical Services manager; Deck Fitter; 399101 Rigger; Rigger/ Transporter; Mast builder; Sail designer; Fairer; Systems installers (plumbing, electric, electronic, gas, air con); Naval architect; and Pre-preg and infusion operators

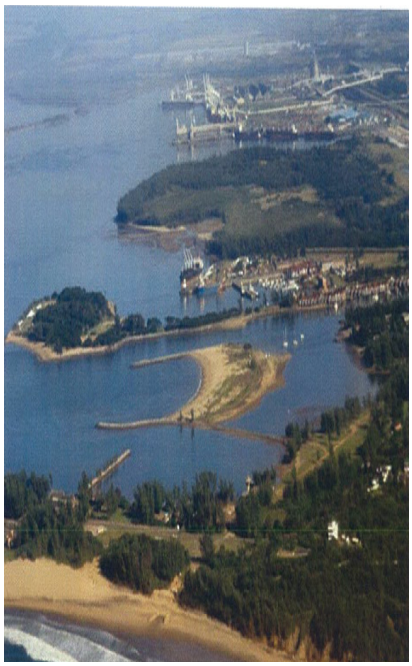
Relative scarcity refers to suitably skilled people who may not have a high level of work experience. The following skills fall into the relative scarcity list:

- 399709 Laminator; 399101 Boat Builder and Repairer; 324301 Boat Painter
- Deck Fitter; 591105 Stock clerk; Diesel mechanic; 322301 Welder (Aluminium and stainless steel); 331201 Carpenter; Marine designers; Boat commissioning/sea trialling; Marine CNC operators; Marine electrician and electronics and Sail rigging

Critical Skills include Middle management; Supervisory/Project leaders; Quality assurance; Productivity; Marine Engineering; and Innovation. The marine specialisation of all aspects of boat construction are critical and currently companies cover this need with in-house training and mentorship.

Future possible demand for a ship repair facility in Richards Bay

Imbani projects are proposing to build a drydock in Richards Bay. An economic analysis report provided by CCCC-FHI Engineering Co. Ltd[78] indicates that the development of the ship-repair industry in South Africa can play an active role in employment absorption. Figures provided in the report indicate that the Richards Bay project will create more than 1,000 direct employment opportunities in the construction and operation of the project and more than 4,000 indirect employment opportunities will be created through the multiplier effect. Therefore, the Richards Bay project may bring a total of more than 5,000 jobs.



[78] Ship Repair Facilities in Richards Bay, South Africa. An Economic Analysis. (January 2011). Report submitted by CCCC-FHI Engineering Co. Ltd

Recommendations for the industry

- **Production efficiency and quality needs to be improved. A centralized, industry driven training initiative should be established, with centralised funding, a boatbuilding apprenticeship system and a strong industry support mechanism to assist firms to participate in the various training opportunities. Specific training for the boatbuilding sector is lacking and high level composite training is a real priority. A number of scarce skills have been identified and a national boatbuilding training strategy needs to be drafted and implemented**

- **Establishment of an industry training organisation/council**

- **Reestablishment of the boatbuilding apprenticeship system is required**

- **The Industry is in need of a national boatbuilding skills development and training strategy to be drafted with an implementation plan put in place**

- **Marine electrical and other scarce skills training is required**

8.2.2 Learning about the maritime sector from the initial company survey – types of skills

Companies sampled during the explorative component of this study that assisted in mapping the Maritime Sector footprint, were asked to report on the proportion of their workforce that requires a specialisation that equips them to work effectively in their maritime industries. Analysis of respondent data shows that occupations required include engineering disciplines, artisan skills, technical skills and professional management skills.

The Table on the next page presents the proportion of the workforce requiring maritime specialisation, based on the sample of companies selected to explore the maritime sector footprint. The Table further provides an indication of the types of skills within each cluster/industry.

It is noted that total employment numbers that are included in Table 10 are indicative of numbers provided by the companies sampled for the explorative component. Employment numbers are not representative of the sector. Employment numbers presented in Table 14 were a final attempt in conclusion to this study to provide estimate numbers of estimated employment across clusters/industries within the maritime sector.

Table 10: Proportion of the workforce requiring maritime specialisation and examples provided of maritime specific skills

Clusters & Industries	Total Employment	Numbers Requiring Specialisation	Proportion Requiring Specialisation	Commentary
Business Services	212	108	51%	**Examples included:** • Highly skilled professionals with an additional specialisation in maritime, such as maritime attorneys • Maritime specific professionals such as ship surveyors • Administrative personnel with customs clearing knowledge and experience • Seafarers, in this particular sample an auctions company requiring a coastal skipper and motorman
Maritime Tourism	244	130	53%	**Examples included:** • In marine tourism the requirement is for seafarers, particularly skippers and deckhands • In boatbuilding the requirement is for a range of artisans and technically skilled personnel that are trained and/or experienced in applying their trade in a marine context • Highly skilled maritime specific professional – naval architects, composite technicians
Manufacturing	337	89	26%	**Examples included:** • Artisans with knowledge and experience in applying trade to maintenance and repair of marine equipment • Technical personnel with ports services experience including stevedoring and rigging
Public Interest	40	32	80%	**Examples include:** • Maritime specific professionals such as ship surveyors

Clusters & Industries	Total Employment	Numbers Requiring Specialisation	Proportion Requiring Specialisation	Commentary
				• Educators/trainers/instructors with both the qualification and experience associated with the occupation or qualification they're presenting training for, as well as training ability
Shipping	851	460	54%	**Examples include:** • Seafarers, especially deck and engineering officers • Management professionals with the knowledge and experience necessary to work effectively in the maritime domain. The need for effective sales personnel was regularly mentioned by shipping companies. • Technical personnel with maritime operations experience including rote controllers and ship loading oversight
Operational Support Services	2,916	852	29%	**Examples included:** • Maritime specific professionals such as ship surveyors • Administrative personnel with customs clearing knowledge and experience • Artisans with knowledge and experience in applying trade to maintenance and repair of marine equipment • Highly skilled professionals with an additional specialisation in maritime, such as coastal environmental management • Technical personnel with ports services experience including crane operation • Management professionals with the knowledge and experience necessary to work effectively in the maritime domain

Clusters & Industries	Total Employment	Numbers Requiring Specialisation	Proportion Requiring Specialisation	Commentary
Ports Services	2194	800	36%	**Examples included:** • Management professionals with the knowledge and experience necessary to work effectively in the maritime domain • Seafarers in ports specific occupations such as ships pilots, tug masters etc. • Technical personnel with ports services experience • Administrative personnel with customs clearing knowledge and experience • Artisans that are trained and/or experienced in applying their trade in a marine context

The following provides a more detailed overview of the occupations across industries within the maritime sector. However, it is noted that occupations of interest are not exhaustive and additional skills should be identified through further studies and data collection from Companies representative of the maritime sector.

Shipping and Transport Cluster		
Shipping Transport and Maritime Logistics and Infrastructure	Occupations of Interest[79]	Relevant SETAs
	Seafarers Engineering Officers Deck Officers Engine Ratings Deck Ratings Engineering/Artisanal/Technical Shipwrights Ship-fitting Diesel Mechanics Management Professionals Crewing Manager Finance Marine Communication Manager Marine Managers Marine Operations Manager (Fleet) Project Management Sales Managers	TETA MERSETA
Ports, Marine Services and Coastal Management	Occupations of Interest[80]	Relevant SETAs
	Seafarers (port services specific) Pilots Tug Masters Deck Officers Dredge Masters VTS Operators Sea Watch and communication Operators Harbour Masters Cargo Operations Personnel Bunkering and Barge Operators Engineering/Artisanal/Technical Real Estate Specialists Marine Engineers Civil Engineers Management Professionals Finance Marine Communication Manager Marine Managers Marine Operations Manager (Fleet) Project Management	BANKSETA FASSET LGSETA MERSETA TETA THETA

[79] Adapted from the maritime specific scarce skills list and Organising Framework for Occupations (OFO)

[80] Adapted from the maritime specific scarce skills list, OFO and Case Study on Skills Shortages in the Transport, Storage and Communications Industries (2008)

Marine Resources Cluster		
Fisheries, Pharmaceuticals and Aquaculture	Occupations of Interest[81]	Relevant SETAs
	Seafarers (some Commercial Fishing specific) Engineering Officers Master Fisher & other Deck Officers Shore Skipper Engine Ratings Fishing Hand Engineering/Artisanal/Technical Seafood Process Workers Aquaculturalists Production/Operations Manager Factory Safety Supervisors Management Professionals Finance Project Management Crewing Manager	TETA AGRISETA BANKSETA FASSET FOODBEV THETA W&RSETA
Offshore Energy and Mining	Occupations of Interest[82]	Relevant SETAs
	Seafarers Engineering Officers Deck Officers Engine Ratings Deck Ratings Engineering/Artisanal/Technical Geologists Geotechnical Engineers Chemical Engineers Drilling Engineers Marine Engineers Structural Engineers Oil Rig & Derrick Hands (various) Demolition Technicians Hydraulics Technicians Sandblasting Technicians Mechanical Engineers Mechanics A/C Technicians Carpenters Boiler Makers Electricians Welders Plumbers ROV Operators Helicopter Pilots Environmental Management Specialists Health & Safety Professionals Medical Professionals Stewards Department Staff Catering Department Staff Management Professionals Finance	TETA CHIETA FOODBEV HWSETA INSETA ISETT MERSETA MQA

[81] Adapted from maritime specific scarce skills list and OFO

[82] Adapted from desktop review data

	Crewing Managers Project Management	

Marine Tourism Cluster		
	Occupations of Interest[83]	Relevant SETAs
Boating & Cruising	Seafarers Some interest in personnel with seafaring qualifications and experience Boat Operators Offshore and shore-based skippers (sail and power) Commercial/Charter Engineering/Artisanal/Technical Laminator Boat Painter Technical Director Technical Services manager Deck Fitter Rigger Rigger/Transporter Mast builder Sail designer Fairer Systems installers (plumbing, electric, electronic, gas, air con) Naval architect Pre-preg and infusion operators Boat Builder and Repairer Deck Fitter Stock clerk Diesel mechanic Welder (Aluminium and stainless steel) Carpenter Marine designers Boat commissioning/sea trialling Marine CNC operators Marine electrician and electronics Sail rigging Marine Engineering Management Professionals Middle management Project Management Quality assurance	TETA MERSETA CHIETA THETA W&RSETA

Operational Support Services Cluster		
Shipping logistics	Occupations of Interest	Relevant SETAs
	Seafarers Personnel with seafaring qualifications and experience Engineering/Artisanal/Technical	TETA BANKSETA CETA

[83] Adapted from the CBTI Boat Building Skills Analysis (2010)

	Freight Forwarding Professionals Ships Agent Ships Surveyor IT Professionals Management Professionals Finance Middle Management	FASSET MAPPP MERSETA SERVICES W&RSETA
Marine Technologies	Occupations of Interest	Relevant SETAs
	Seafarers Personnel with seafaring qualifications and experience Engineering/Artisanal/Technical Management Professionals	TETA

Manufacturing and Construction Cluster		
Marine and Civil Engineering	Occupations of Interest	Relevant SETAs
	Seafarers Personnel with seafaring qualifications and experience Engineering/Artisanal/Technical Ship-fitting Telecommunications Cable Jointer Telecommunications Technician Management Professionals Finance Economy Customer Service	TETA MERSETA INSETA

Business Services and Public Interest Clusters		
Banking and Consulting; Maritime Regulatory and Naval Defence	Occupations of Interest	Relevant SETAs
	Seafarers Personnel with seafaring qualifications and experience Engineering/Artisanal/Technical Ship-fitting Telecommunications Cable Jointer Telecommunications Technician Management Professionals Finance Economy Customer Service Auditors and Accountants Lawyers Research Specialists	TETA MERSETA INSETA

The summary block below highlights key findings and recommendations to direct the maritime skills development strategy:

A broadened maritime sector understanding in terms of types of skills and occupations:

Occupations of interest presented in this study are not exhaustive. To obtain a better representation of occupations of interest within each industry, further engagement is required with a representative sample of companies within each industry of the maritime sector. However, as indicated already, a sector audit will need to be conducted and a database built of all companies within the maritime sector. Once this is available, a random sample of companies can be selected for detailed collation of occupations.

Sample by Business Size

The following table presents the business size of companies included in the initial survey by maritime clusters and industries (Refer to Table 1 in Chapter 4 for a list of Companies):

Table 11: Business size by maritime cluster & industry

Clusters & Industries	Large	Medium	Small	Very Small	Micro
Business Services	1	1	3	2	1
Marine Tourism	1	0	5	4	1
Manufacturing / Construction	1	2	1	0	1
Operational Support Services	7	2	10	6	3
Public Interest	0	0	2	0	0
Shipping and Transport	8	0	7	0	1
Marine Resources	3	0	0	0	0
Grand Total	**21**	**5**	**28**	**12**	**7**

The majority of companies in the sample (28) employ between 10 and 50 people, which qualifies them for small company status. Large businesses, with more than 100 employees, are the next highest represented (21), followed by Very Small businesses (12) employing between 5 and 10 people. The lowest representation (5) in the sample is of Medium sized businesses, which employ between 50 and 100 people.

Sample by Workforce, Industries and Business Size

The following table illustrates the number of employees represented by companies in the initial survey sample as well as a representation of employees by business size (Refer to Table 1 in Chapter 4 for a list of Companies):

Table 12: Number of employees represented by companies in the initial survey sample

Clusters & Industries	Workforce
Business Services	212
Marine Tourism	244
Manufacturing / Construction	337
Operational Support Services	2,916
Public Interest	40
Shipping and Transport	3,045
Marine Resources	4,273
Grand Total	**11,067**

The companies sampled represent a total workforce of 11,067. Excluding Marine Resources, which is only comprised of Commercial Fishing, there are 6,796 are represented in the sample, 5,281 of which are employed permanently and 1,515 of which are employed on a contract basis. Commercial Fishing employs the highest proportion of employees in the sample, and this would appear to be an accurate reflection of the case in the broader maritime sector. Excluding Commercial Fishing, the highest workforce represented in the sample is in the Shipping cluster (3,054) or shipping transport and ports services industries, with the Operational Support Services cluster representing the next largest workforce (2,916).

Employment in the maritime sector sample is notably disproportionately distributed across business size categories, with the vast majority of personnel (5,536) finding work in larger firms.

Since the initial company survey did not provide a sufficient estimate of the numbers within the maritime sector, a follow-up survey was conducted, with findings presented below.

Key findings emerging across the data with regards to occupations within the maritime sector

For occupations other than seafaring the findings emerging from these responses is consistent across data from all the research procedures. There is inadequate specialisation in the training of occupations that will be employed in maritime sector activities. The following analysis findings can be extrapolated from the table above:

- In terms of technical skills there is an explicit ability deficit that needs to be addressed. There are additional techniques, for example, that an electroplater must assimilate before he or she can apply their craft to boatbuilding.
- In terms of professional management there are explicit knowledge deficits, but also a tacit knowledge deficit concerning the maritime domain that puts those who have not had exposure to the sector at a professional disadvantage.
- Moreover respondents persistently link the lack of specialist training and professional enculturation in the maritime domain with a lack of quality in delivery of service and ultimately, as a result, an additional constraint on the competitiveness of the South African maritime sector.
- To find personnel with the necessary qualification is proving problematic in a number of occupation categories. Highly skilled professionals with maritime specialisation are especially rare. A responding company reported the difficulty experienced in finding a maritime attorney. After 3 years of recruiting the firm decided to support an existing staff member in attaining the appropriate qualification.
- Similarly a firm requiring Naval Architects has had to implement a capacity building solution to meet their staffing requirements. There is no comprehensive naval architecture qualification offered in South Africa. The firm has therefore implemented a recruitment and training process focussed on mechanical engineers. Tertiary institutions are engaged in identifying suitable graduates; candidates are selected and then trained to meet the specific skills needs of the company. If they can afford it they might also send them on courses overseas. The solution is implemented at significant cost to the firm, exacerbated by the risk of attrition.
- There are other maritime specific professions confronted by the lack of a qualified pool of candidates and that have been compelled to develop training solutions. A company responding to the telephonic survey reported that there is no comprehensive Ship Surveyors qualification offered in South Africa. The company sources candidates with high Maths and Science results and places them on a 4 year in-house training programme. The programme is facilitated by a staff member who trained and qualified in the United Kingdom. Guest instructors are also used, and these are sourced from the UK.
- It is not only the absence of training options but the quality of training that leads to capacity deficits. There are a number of short courses in naval architecture competencies and ship surveying skills available but, according to respondents, they do not contribute significantly to increasing competencies. The quality of raining problem applies not only to professional occupations, but technical occupations as well. A participating company for example indicated that there have been instances where the crane operators they employ are purportedly qualified but do not demonstrate the required competence on the job.

- The cost and risks associated with enterprise based training limit the viability of depending on the private sector for a significant contribution to addressing skills shortages, especially expectations placed on smaller businesses in this regard. Emblematic of the problem is the report from a small enterprise that no longer funds the training of deckhands because the rate of attrition of recently qualified personnel made the sustainability of the solution unaffordable. The process of accessing of skills levies, which would have lightened though not alleviated the cost burden, was itself perceived as too burdensome and costly to engage in. The company now recruits qualified persons only.
- A consistent response from participants in the marine tourism industry of the Leisure cluster is that they are not experiencing a shortage of employable candidates. The industry provides marina based services and caters to day-trippers on short offshore excursions. Limited skipper licenses and deckhand qualifications are the primary seafaring qualifications, and operations are supported by professional management that requires very limited maritime domain knowledge to be effective. The technical occupations in the industry are also not subject to significant shortages, according to the survey respondents.
- The most frequently reported scarce skills by companies in the telephone survey sample fell into the technical occupations category (Engineers/Artisans/ Technicians), with a diversity of occupations being mentioned. The next most frequently reported scarce skills fell to occupations in the Operational Support Services category, and concentrated on logistics related professions, specifically ship surveying, customs administration and general logistics management skills. Business management professions were not maritime specific but respondents expressed the need for business support functions to be thoroughly versed in the details of the maritime domain. The highly skilled specialist professions mentioned included Naval Architect and Maritime Attorney.

8.2.3 Learning about the maritime sector from the follow-up company survey – estimate number of skills

Once an understanding of the maritime sector footprint was provided and the Maritime Sector Skills Development Model was refined by SAMSA, a second survey was conducted with companies identified within each sector that are regarded as providing significant maritime skills and employees.

Sixteen companies were purposively sampled and contacted telephonically to ask about numbers within the company. Documentary evidence provided further insights on numbers (annual reports reviewed).

Table 14 below provides an indication of estimated current employment in the maritime sector based on data sourced from companies identified as key within each of the seven maritime industries.

It is noted that data within the table below was collected during finalisation of this report as a last attempt to gain an indication of estimated employment numbers across industries within the sector.

Table 13: Current employment within the Maritime Sector

Clusters & Industries	Total Employment	Companies included in the survey
Shipping	61,912	**Companies included:** • South African Association of Shipping Operators and Agencies • National Ports Authority • Transnet Ports Terminals • Transnet Freight Rail
Marine Resources	29,442	**Companies included:** • Food and Agriculture Organisation • Petro SA • Forest Oil • Pioneer Engineering • South African Oil and Gas Alliance
Marine Tourism	2,372	**Companies included:** • Department of Tourism • Cruise Tourism Study • Diving companies
Operational Logistics	1,013	**Companies included:** • **South African Association of Shipping Operators and Agencies**
Manufacturing	13,700	**Companies included:** • **Cape Town Boatbuilding and Technology Initiative** • **Marine Technologies**
Business Services	113	**Companies included:** • **Private Training Providers**
Public Services	7,812	**Companies included:** • **SAMSA** • **Department of Transport** • **Petroleum Agency South Africa** • **Ports Regulator** • **South African Navy** • **TETA** • **UCT** • **DUT** • **CPUT**
TOTAL EMPLOYMENT	116,364	

Table 14 indicates that the total employment within the South African Maritime Sector is estimated at 116,364. It is noted that this number is indicative since organisations and companies contacted were purposively sampled because of their eminence within the Sector.

Limitations exist in that there may be substantially more companies within each maritime cluster/industry that have not been included since there is currently no database of every company within the maritime sector in South Africa. Once a directory exists of the entire population of organisations within the maritime sector, not only current employment numbers can be identified on a regular basis (through means of an annual survey), but skills actual skills shortages could be determined to present real-time skills demand within the sector.

8.2.4 Overview of pertinent supply-side dynamics

South Africa has been subject to a generalised skills crisis that mirrors global conditions and has been the focus of a mounting policy intervention effort for some time now. In terms of non-seafaring occupations the maritime sector must compete for scarce and critical skills under the same conditions that apply to the rest of the South African labour market. Skills' planning for the maritime sector therefore needs to take cognisance of these conditions.

The mismatch between the available pool of employees and the market demand for specific qualifications and expertise – the foundation of South Africa's skills crisis - has been attributed to a number of causes, one of the most prominent being the state of the education system. The quality of schools and the teaching capital employed are generally less than adequate. Schools still lack basic services, learning materials and teachers[84].

Despite an increase in the total number of teachers between 2004 and 2005, the number of teachers with just a grade 12 qualification has also increased while the number with post-graduate qualifications has decreased[85]. These and a host of additional circumstances result in a 'toxic mix' that renders the quality of South Africa's grade 12 qualification unacceptable in by global standards[86].

Particular focus has been given to the low levels of participation and performance in SET subject areas. South African learners consistently perform poorly on international standardised mathematics and science assessments[87]. The Department of Basic Education continues to report very low proportions of grade 12 learners passing mathematics and physical science on higher grade (prior to the introduction of the new curriculum). The poor SET enrolment trend persists in FET colleges and higher education institutions, exacerbated by disconcertingly high undergraduate drop-out rates across all tertiary institutions[88].

[84] Transport, Storage & Communication Industries Sector Study, 2008

[85] Skills & Vacancies Project, 2006

[86] Skills & Vacancies Project, 2006; Bloch, 2009

[87] Bloch, 2009

[88] Transport, Storage & Communication Industries Sector Study, 2008

Not only does the school curriculum fail to adequately prepare most learners for higher education, it also fails to prepare them for employment[89]. The unemployment rates of 'degreed' African and white workers have increased significantly in the last decade[90] to an extent not sufficiently explained by a restrained job market.

The lack of correlation between training institution curricula and employability has been attributed in part to the lack or incompleteness of information on the demand and supply dynamics of the labour market[91], as well as poor collaboration between the private enterprise and the education sector in determining optimal content for curricula. The apprenticeship system, in which the private sector and state owned enterprise had been thoroughly invested has eroded almost completely[92], resulting in a severe shortage of artisans.

In addition South Africa has suffered a net outflow of skills through emigration, unmitigated by any effective immigration policy and associated mechanisms[93].

In devising an effective skills development strategy the maritime sector is best served by addressing each of these aspects: basic, FET and higher education; SET curricula; artisan training and apprenticeships; labour market intelligence; cross-sectoral collaboration; the importing as well as the exporting of skills; while optimally exploiting the emerging institutional arrangements and provisions of the national skills development system.

8.2.5 Developing a maritime training focus within the current institutional arrangements

8.2.5.1 The Volume and Relevance of Non-Seafaring Maritime Qualifications

There are a total of 314 qualifications registered with various quality assurance bodies in South Africa, offered across all types of training institutions. Based on the inclusion of non-seafarer occupations as a focus of this skills study, these become applicable to the maritime sector. The detailed list of qualifications is found in Annexure G.

The level of relevance of each qualification to maritime can be classified as follows:

- Maritime specific qualifications are those directly related to jobs in the maritime sector. These would include all qualifications with maritime specialisation.
- Maritime related qualifications are those that would include a significant proportion of maritime related content in their study material and/or have specific application in the maritime sector.

[89] Daniels, 2007; Skills & Vacancies Project, 2006

[90] DPRU, 2005

[91] NHRDS, 2008

[92] CDE, 2010

[93] Transport, Storage & Communication Industries Sector Study, 2008; CDE, 2010

- Maritime relevant qualifications are those that have general application in the maritime sector, but are not directly related to the maritime context. Examples would include general qualifications in engineering and technical fields, commerce and human resource management.

The distribution of the maritime applicable qualifications by level of relevance is reflected in the table below.

Table 14: Qualification Categories by Level of Relevance to Maritime

Qualification Categories	Maritime Specific	Maritime Related	Maritime Relevant
Construction, Engineering & Related Design	4	6	46
Finance, Economics, Accounting and Insurance	0	9	43
Generic Management	2	2	8
Human Resource Management	0	0	23
Legal	5	0	9
Science & Related Studies	16	24	24
Transport Operations and Logistics	6	30	0
Health & Safety	1	0	14
Hospitality, Tourism, Travel, Gaming Sport and Leisure	2	0	25
Military & Navy	7	0	8
TOTALS	**43**	**71**	**200**

Transport Operations and Logistics in South Africa tend to bias road transport concerns. The extent to which maritime related qualifications actually favour a maritime focus in content is dubious. In addition the Science & Related Studies qualifications specific to maritime are of an academic rather than operational or technical nature. Other than seafarer related training, specialist maritime specific training is uncommon. Furthermore it is unclear to what extent maritime related and maritime relevant qualifications display maritime aware curriculum content, but the example of maritime related qualifications in the Transport Operations and Logistics qualification category is probably emblematic of the persistence with which the maritime perspective tends to be overlooked in courses with potential maritime application.

The high number of maritime relevant qualifications suggests that the supply of generalised skills to the maritime sector is provided for. It further indicates an opportunity for introducing supplementary course content that results in a maritime specialisation of generic qualifications, should a growing maritime sector demand it. However it should be noted that the survey response and key informant data tends to emphasise the need for the maritime specialisation of technical skills, particularly artisans, as well as the necessity for adequate levels of familiarity with the maritime domain for management professionals.

The distribution of maritime applicable qualifications across quality assurance bodies is reflected in the following table.

Table 15: Maritime Relevant Qualifications across Quality Assurance Bodies

Quality Assurance	Proportion of Qualifications
CHE	47
SAMSA	32
Learning programme specific	4
TETA	4
SAS SETA	3
THETA	2
MERSETA	2
LG SETA	1
MQA	1

Quality Assurance	Proportion of Qualifications
CETA	1
MAPPP	1
Other SETAs	1
TOTAL	100

These results suggest that promoting a maritime focus in skills development will require a two-pronged strategy focussing on tertiary training institutions on the one hand, and the SETAs on the other.

The vast majority of maritime specific qualifications are overseen by SAMSA. These are the certification and STCW 95 training qualifications applicable to seafarers. Next, the council for higher education oversees almost half of the total maritime applicable qualifications in the country. However the majority of these will be maritime relevant generic qualifications with no maritime specialisation. Rather than indicating the mainstreaming of maritime skills in the education and training system this figure confirms the persistent lack of association of generalised skills with career opportunities in the Maritime Sector. Approximately 21% of all maritime applicable qualifications are overseen 16 different SETAs. Over half of these would be classified as maritime specific or maritime related. This distribution of recognisable maritime skills across the skills system indicates the dilution of a maritime focus in skills development.

The distribution of maritime training offered across different types of institutions is reflected in the following table.

Table 16: Proportion of Total Maritime Applicable Training Delivered by Institution Type

Institution Classification	Proportion of Training	No. of Institutions
Private Training Academy Maritime Specialisation	23	19
Private Enterprise Related Academy	20	16
University	14	11
University of Technology	11	9
Private Training Academy	10	8
Tertiary Training College	7	6
Professional Institute	5	4

Secondary Schools	4	3
University: Distance Learning	2	2
Naval Academy	1	1
Specialist Business School	1	1
State Enterprise Related Academy	1	1
	100	81

Maritime academies offer access to candidate seafarers directly, however it is through institutions offering more generalised my maritime applicable training that maritime awareness among young jobseekers might be affected.

The major proportion of maritime specific training, including training qualifications accredited by STCW codes, is offered by privately owned training academies specialising in maritime training, and training academies funded by private maritime enterprises. The former training concentrates on maritime health and safety and maritime medicine, while the latter focuses on seafarer training. The Transnet National ports Authority School of Ports also focuses on seafarer training, like the privately funded academies, and ports professionals training. The universities, colleges and private training academies for the most part offer maritime relevant skills training, without supplementary content leading to maritime specialisation.

Engagement with maritime specific academia is already consistent and fruitful. Collaboration with maritime training academies has led to important innovations to address seafarer training bottlenecks for example. However, to promote maritime aware skills development with learners more generally, it may be useful to engage with tertiary institutions other than those dedicated exclusively to maritime specific training, with a deliberate programme encouraging the introduction of a maritime perspective into maritime related and maritime relevant curriculum development and delivery.

A more deliberate and concerted effort is required to advocate the maritime cause within the SETA system. Unifying sector industry codes relevant to maritime skills production across all the relevant SETAs, even synthetically, is important to introduce a formality to maritime related skills developed.

9 Findings and analysis: Strengths, weaknesses, opportunities and threats of the South African Maritime Sector

The last five chapters have been pivotal in providing an in-depth understanding of the implications of global trends on South Africa's maritime skills development footprint; the legal and policy frameworks governing the development of maritime skills; funding agencies that fund skills development; shortcomings in determining the accurate supply and demand dynamics of South African maritime skills.

This study relies heavily on the findings from analysing the content of those interviews held with maritime stakeholders during this study. Since this study will ultimately lead to re-positioning the maritime industry, findings are presented by means of a SWOT analysis that places the themes and information shared by stakeholders into strengths, weaknesses, opportunities and threats for the industry currently. This chapter solidifies the findings of this study by contextualising the key themes apparent from interviews and those key findings of the last four chapters.

This chapter responds to the following study objective:

Study objective 5: Determine skills offering and skills development gaps in South Africa

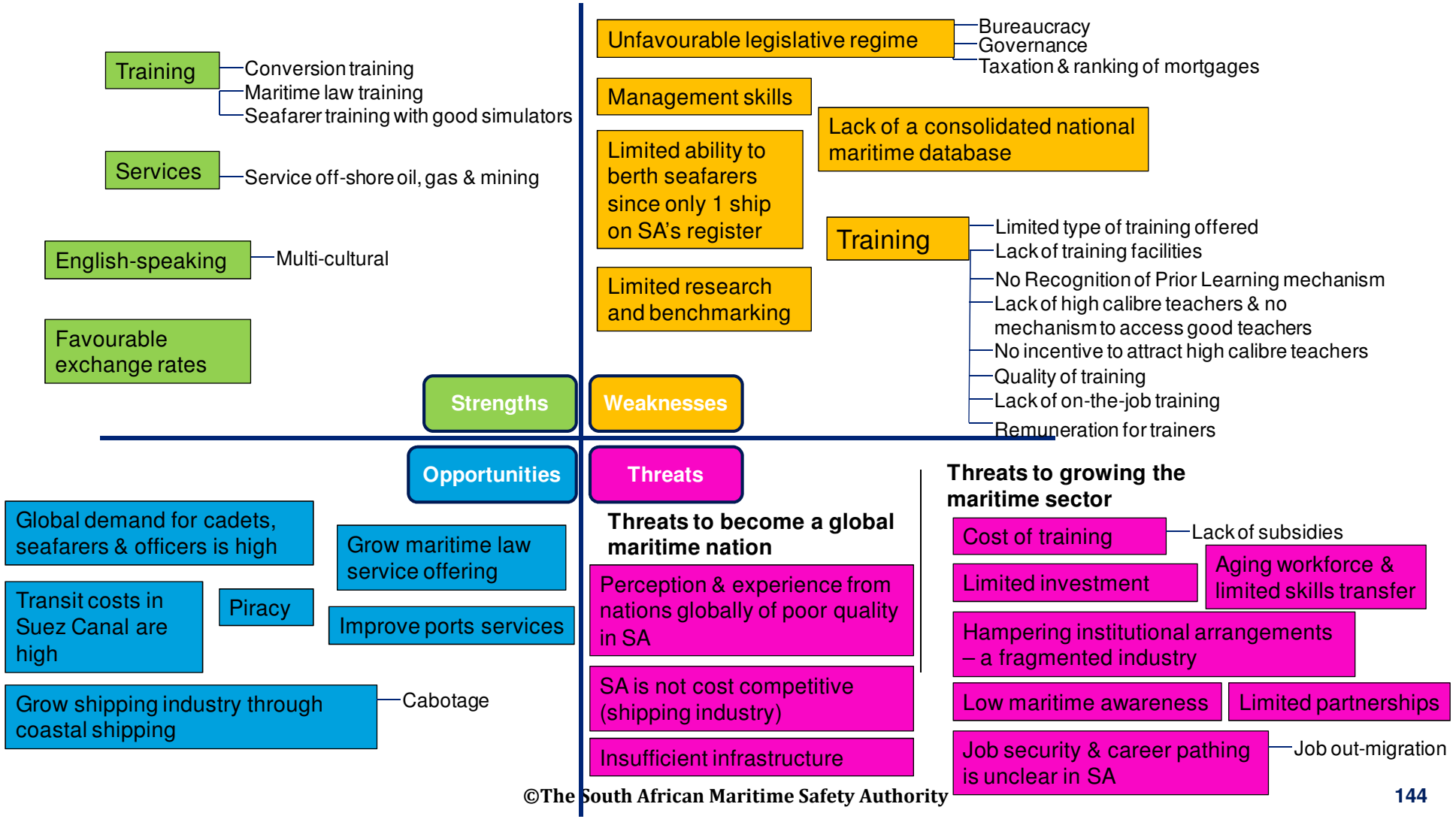
Section 9.1 graphically illustrates the current status quo of the South African maritime sector. Sections 9.2, 9.3, 9.4, and 9.5 expand on the strengths, weaknesses, opportunities and threats quadrants of the SWOT analysis by highlighting the key findings from this study.

What is more important than where findings are placed, is the pertinent focus on identifying South Africa's current maritime strengths that should be leveraged; opportunities that should be explored further to determine the feasibility of growing our maritime sector to address the global trends and existing maritime gaps; as well as weaknesses and threats that have become or are becoming an impediment to the growth of South Africa's maritime sector. A summary and recommendations are considered in green blocks throughout the chapter.

9.1 The current status quo of the South African Maritime Sector

The following presents a SWOT analysis based on the key themes identified through the interviews conducted with stakeholders.

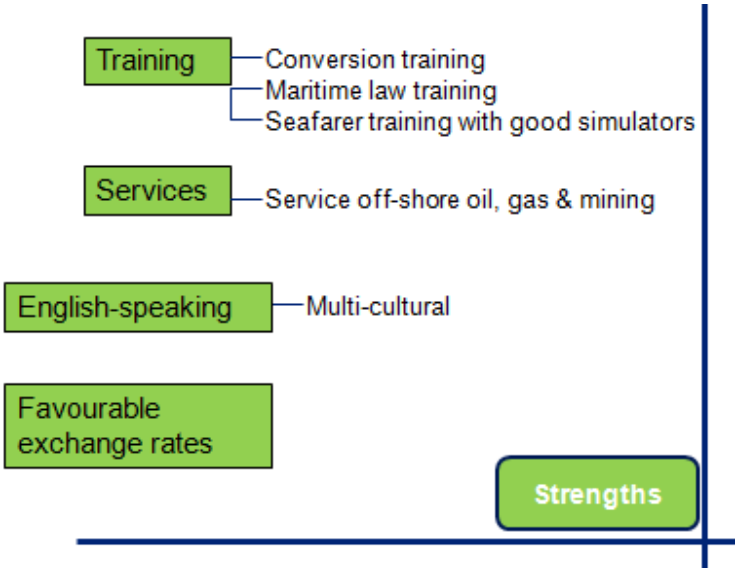
Figure 10: Key themes from study findings identified as current strengths, weaknesses, opportunities and threats



The SWOT analysis presenting the current status quo of the Maritime sector is elaborated on in the sections below.

9.2 Current Strengths

Four strengths were identified in the maritime sector during this study. These include South Africa's high quality theoretical training, off-shore oil, gas and mining services, South Africa being an English-speaking nation, and favourable exchange rates. These factors introduce advantages to accessing the global maritime sector.



9.2.1 Training

The following key strengths were highlighted during the study:

- Quality training:
- The analysis of stakeholder interviews identified the theme of South Africa providing quality training and quality seafarers. Positive comments were made, identifying certain training institutions as providing high quality:
- The following quotes illustrate the theme of quality training:

"South African certified seafarers are highly sought after in the global maritime sphere".

"South Africa is able to train well and has good simulators".

"Other countries, specifically those in Africa, come to learn from South Africa".

"For most of the maritime specialities, South African practitioners are highly regarded"

"South Africa has 'white status', which implies that our training is at a high level".

"South Africa's certification meets the required international convention standards".

SAMTRA was identified as a leading tertiary training institution for seafarers. As quoted, "SAMTRA has training simulators, which are required for training internationally for some of the shipping companies. SAMTRA also provide conversion training to mechanical engineers from other institutions who want to focus on the maritime sector".

An interviewer indicated that "most of the training revenue comes from companies who have cadets and want simulator training provided to their cadets". Another interviewee indicated that "it is worldwide knowledge that South African seafarers are highly skilled and well trained".

"The Cape Peninsula University of Technology is the best training institution in Africa – hosting and training many learners from Anglo".

"Learners that leave Simons Town are of extremely high calibre and very valuable to the industry".

- A concern was raised by some stakeholders across stakeholder groups that a key risk to losing this status is South Africa's current inability to retain and attract highly skilled people as lecturers.

9.2.2 Service offerings

The following themes were identified as key strengths as services offerings from the analysis of stakeholder interviews:

- Legal practice: Stakeholders within the industry group indicated that South Africa draws other countries to South African maritime lawyers when they seek advice. The following quote illustrates this theme:

"African countries come to South Africa for advice when they have challenges".

- Off-shore oil, gas and mining: Stakeholders within the Government group and the industry group highlighted the service offering South Africa has in terms of off-shore oil, gas and mining. As quoted:

"Off-shore oil, gas and mining are currently a focus in the industry".

"An oil rig is currently being serviced in Cape Town".

9.2.3 Favourable exchange rates

Stakeholders within the industry group highlighted the theme of favourable exchange rates increasing opportunities for South Africans abroad. The following quote illustrates this theme:

"EU ship owners are replacing seafarers from the EU with non-EU labour to lower their wage costs. This provides an opportunity to South Africans who still earn more abroad because of favourable exchange rates".

9.2.4 South Africa is English-speaking and multi-cultural

The analysis of stakeholder interviews identified the strength of South Africans being English-speaking and multi-cultural:

- English speaking: An EU statement released in 2002 claimed that shore-based positions in EU firms seeking personnel with seafaring experience are not easily filled due to, amongst other reasons, language differences. South Africans' English language abilities make them preferred candidates for such positions.
- Multi-cultural: A competitive advantage of South Africa is that we are a multi-cultural nation. There are a number of studies indicating the difficulty of crewing a ship on sea due to the need for multi-cultural skills. Growing up in South Africa or studying in South Africa provides these skills required off-shore.

The following provides a summary of recommendations based on current strengths within the Maritime Sector:

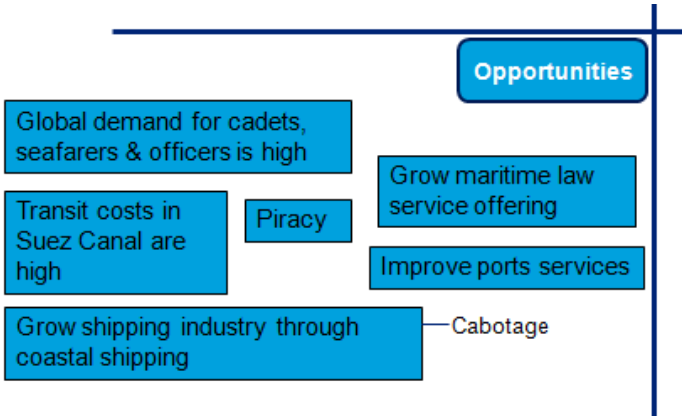
Recommendations based on current strengths within the Maritime Sector:

South Africa could be marketed as a skills hub since we have the competitive advantage of being an English speaking, multi-cultural nation, with training that is in line with IMO standards and there are favourable exchange rates, which implies that South Africans working abroad can be offered a lower remuneration than EU personnel and still earn higher salaries in comparison to South African terms.

In terms of our high quality training, it is recommended that efforts be made to document key attributes of successful skills building training institutions in South Africa and use current best practice to raise standards of other training institutions in South Africa. It is imperative that South Africa ensure that training standards remain above international requirements to remain a skills hub in the future.

9.3 Current Opportunities

Six skills development opportunities have been identified. These include international opportunities based on the global shortage of seafarers; the global maritime shift in trade routes due to constraints in the Suez Canal as well as piracy. In addition, there are regional opportunities to grow the maritime law service offering, to grow the shipping industry through coastal shipping and to improve South African ports services as a way to become an efficient maritime shipping industry.



9.3.1 Global demand for seafarers

The analysis instrument demonstrates that all stakeholder groups emphasised that locally and globally, the demand for seafarers is high. Seafaring is a highly valuable skill globally.

9.3.2 Maritime law service offering

The theme of maritime law was highlighted as a strength above. This theme also presents an opportunity because South Africa gets regional and international work based on our reputation for maritime law. The following quotes illustrate this theme as a strength that provides opportunities to expand this service offering to the global market:

> *"South Africa's maritime law service offering is highly regarded globally".*
>
> *"Up to 66% of candidates are foreign learners from other countries".*

9.3.3 Services industry around coastal shipping and ports

Analysis from stakeholder interviews highlighted the theme of shipping and ports. South Africa's maritime shipping cluster is contributing to the economy's GDP. Emphasis was placed on the opportunity for South Africa to become a services-orientated industry for coastal shipping and ports. Some stakeholders within the industry are of the opinion that **growing coastal shipping** is an opportunity to grow the shipping industry so that long-haul ships unload cargo/freight and then coastal ships move this to the region. The following quotes support this theme:

*"**Ports services** are where South Africa makes money. However, the industry indicates the current lack of skills in ports services".*

"There is an opportunity for South Africa to become a services-oriented maritime industry. South Africa has eight ports which we should use to generate and sustain skills development".

"The focus should be on creating a high quality cost competitive and efficient services industry around shipping".

"The priority for maritime is regional connectivity and inter-port connectivity. South Africa's geographic location demands that there should be a shipping hub".

*"There is a future for shipping in terms of **cabotage** since there is a trend in global shipping now".* [94]

"Cabotage is a viable way to grow the South African shipping industry, provided that the tonnage to transport is there".

"I see the future of the maritime industry moving into short-haul shipping".

9.3.4 Global maritime shift in trade routes

The following key opportunities were highlighted during the study:

- With increased piracy in the gulf of Aden, ships have begun using the around the Cape route more. This factor provides an opportunity for South Africa should we be able to improve our competitive advantage as a maritime nation.

The insurance and transit costs to use the Suez canal have become high, which is another opportunity for South Africa, provided we can create a cost competitive advantage.

[94] Cabotage means that long haul ships offload cargo and regional ships take it to the region.

The following provides recommendations based on opportunities identified for the maritime sector:

Recommendations to re-position South Africa based on maritime opportunities:

- **As part of developing a whole sector skills development strategy, it is recommended that the industry identify existing reputable training institutions to invest in to increase their capacity for training where the demand is high locally and internationally. The research identified value for investment in the area of training seafarers, maritime lawyers, and upskilling in ports services.**

- **Enabling South Africa to become cost competitive in insurance and transit costs and providing a safe environment for ships to use the 'around the Cape route', can grow our maritime sector. It may be worthwhile investigating the feasibility of introducing role-players other than the NPA to create cost competitiveness between ports locally.**

- **South Africa should aim to improve ports services. Currently, South Africa has an efficiency rating which is one-third of the efficiency rating of European ports. We have a long way to go to become competitive. Further research is recommended specifically around the shipping industry to determine, based on global best practice, how South Africa can become a high quality cost competitive and efficient services industry around shipping.**

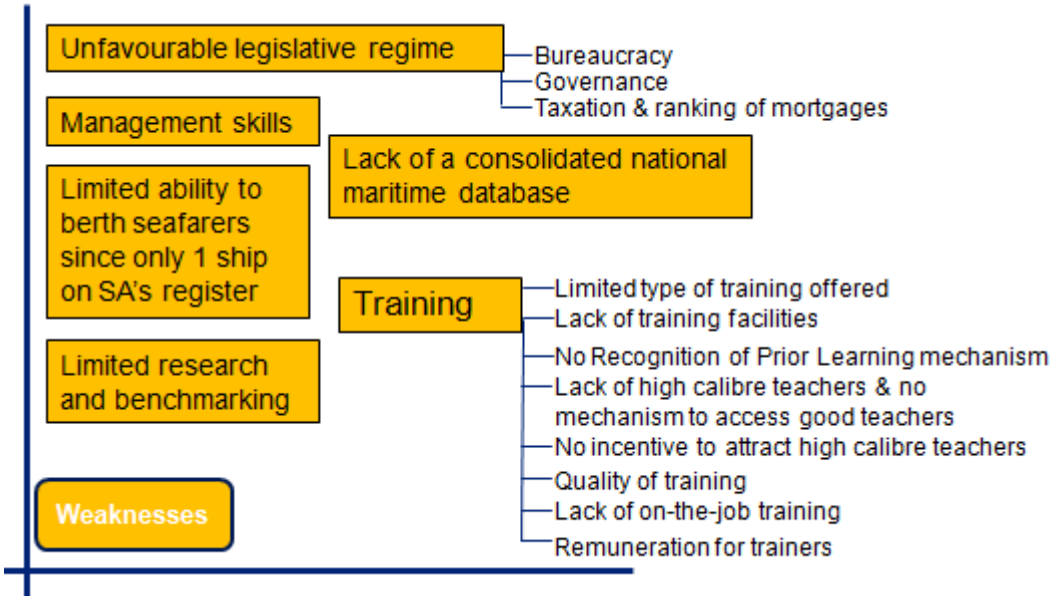
- **Demand for seafarers is high. Thus, there is an opportunity to grow South Africa as a services hub. Research should be a first step to inform the planning of growth in this area. It is worthwhile conducting a competitor analysis in areas where we already have a good reputation such as servicing oil rigs. To become a services hub, South Africa must identify best practice, competitors and position ourselves competitively. We must also develop and mandate high standards of quality with a national auditing system to monitor that standards are attained. A national policy for quality of standards in ports services and the shipping industry may be a consideration. Additional research should look at standards of quality required internationally.**

- **Seafarers are a key skills pool that feed into other occupations in the maritime industry. Seafarers in shore-based jobs improve quality. It is recommended that quick-wins include an increase in the capacity of seafarers being trained at and beyond current international standards.**

9.4 Current weaknesses

Stakeholders across the industry identified a number of weaknesses in the maritime industry that are hindering South Africa's maritime sector. Unfortunately, the number of weaknesses and threats currently in the South African maritime sector outweigh the strengths and opportunities that exist. However, it is only by identifying and understanding the weaknesses and threats in terms of skills development, that the maritime sector can develop a maritime skills development strategy that can place South Africa on the map as a leading maritime nation.

Six types of weaknesses were identified through this study. These include various limitations with regard to training; limited research and benchmarking; limited management skills; an unfavourable legislative regime; limited opportunities to berth; and the lack of a consolidated national maritime skills database.



9.4.1 Skills Development challenges

Skills Development challenges were identified through analysis of stakeholders' interviews across the maritime sector. The following weaknesses impede the future growth of the sector:

- Limited type of training offered: currently training is not meeting all the needs of the industry. Limited type of training as a theme is illustrated in the following quotes:

"There are a lot of artisans but they need to be more specialised for the maritime industry".

"Port inefficiencies in South Africa are due to limited port management skills".

- Skills deficits: The skills development system is not facilitating the efficient development of maritime training programmes. Marine fitting was identified as a primary skills deficit in ship repair. Seafaring for smaller ships is a skills priority. Technical skills when it comes to seafarers was also identified, namely, able seamen and officers (engineering and deck officers). Stakeholders identified artisan training that is maritime specific to be centralised. A retention problem was identified with seafarer officers moving from commercial fishing to other seafaring industries.
- Higher-level skills: Higher level skills are needed (executive leadership and management of maritime business, maritime lawyers, etc.). South Africa doesn't have much training available.
- Lack of training facilities: Analysis of interviews highlights lack of training facilities as a theme. The following quotes support this theme:

"We cannot increase the capacity intake of learners due to limited facilities". "There is no facility in South Africa to study naval architecture; hence there is a small pool of naval architects in South Africa".

"The lack of maritime training institutions is a main constraint for skills development in the Eastern Cape".

"We have NMMU offering Maritime qualifications but nothing for seafarer training and only private providers for the fishing industry. There is a high demand for seafarers which we cannot supply due to the lack of training institutions".

- Quality of training is a key challenge because standards have been lowered: Because maritime is an international industry, it is important that maritime qualifications meet international convention standards. Stakeholders in all stakeholder groups expressed the lowering of standards as a concern. This theme is supported by the following quotes made by respondents:

"There have been changes from good practices in the past to current training"

"Twenty eight years ago when I started the mentors were good clearing agents who taught good habits. As the industry went through the last three decades, the process of mentorship and quality of mentors became diluted. When I was mentored a lot of my mentors were seafarers. Now the quality of clearing agents as a profession is lower than it used to be – there are no compulsory qualifications – there are far less ex-seafarers as clearing agents".

"The requirements to become a pilot today have been lowered from the old days". "The lowering of standards not only has an effect on quality of expertise but it has a systemic effect – a justification for paying less".

"Schools with course content are accredited by SAMSA but are working on the bare minimum requirements for international audits. There is a need for reviewing the curriculum based on best practice curriculum".

- Lack of high quality teachers: Another skills development theme identified as a challenge in the sector is to access and retain good teachers. This is illustrated by the following quotes:

"Attracting teachers of a high calibre is difficult".

"Teachers are paid much lower salaries than those working in the industry so competent maritime professionals do not find it an attractive option".

"Why teach when you can be working in the industry for more money".

"Learning Institutions are unable to attract Master Mariners and Marine Engineers to their faculty staff as no funding framework is in place to pay commensurate salaries – lecturers at both DUT and CPUT are aging and due to the lack of funds these renowned maritime training institutions are unable to attract younger lecturing staff".

"Remuneration of maritime lecturers is capped by DHET, which hampers employment of highly skilled seafarers in training roles".

"The funding required to top up salaries falls outside of TETA/Skills Development framework. Funding is desperately needed if we want to grow the industry and become competitive".

"A master engineer working on a foreign ship can earn up to R180,000 tax free per month. These are the calibre of trainers the country is seeking to ensure training standards remain high".

- Lack of management training: Analysis identified this theme as a challenge across the industry, as stated:

"The sector badly lacks middle management training, project management skills, quality oversight functions, HR management and training to lift labourers into supervisory positions".

- Lower calibre skills pool as a result of less on-the-job training: Although not commonly expressed amongst stakeholders, analysis identified this theme as apparent and a current challenge. Some stakeholders indicated that the quality of a skill is based on sea-time experience. The following quotes are relevant to describe this theme:

"In South Africa one can get a class 3 certificate at one year at sea, compared to the four year apprenticeship in the past".

"There is a lack of seafaring experience undermining the quality of shore-based delivery of services that directly impact on shipping, for example, cargo loading".

- Lack of international experience: Analysis identified the value of international experience as a theme amongst few stakeholders. As quoted:

"The knowledge you have in the international sphere gives you insight into the future".

"International expertise makes you aware of what other nations are doing".

- Best practice has been lost: This theme was apparent amongst stakeholders across the stakeholder groups. As quoted:

"In the old days marine fitters and mechanical fitters were apprenticed so you developed skills over a long period under the mentorship of a highly qualified and competent artisan. Nowadays if I hire people I hire those with mechanical experience who learn on-the-job. It would be beneficial to be able to hire people already specialised in marine mechanical fitting".

- Recognition of Prior Learning (RPL): No RPL mechanism currently exists in the sector, which is a hindrance to advancing skills in the sector. As quoted:

> *"Recognition of Prior Learning for STCW certification cannot be offered as it has not been approved by the Minister".*

9.4.2 Lack of a consolidated national maritime database

The analysis instrument highlights that all stakeholder groups commented that an urgent need exists for a national and consolidated maritime skills database, with easy access to all stakeholders containing current information regarding skills demand, skills supply and employment opportunities. Respondents were furthermore in agreement regarding the value of monitoring SA seafarers especially cadets working on foreign vessels, however currently Insufficient shore-side infrastructure exists to enable research and benchmarking. The following quotes illustrate this theme:

> *"Africa has a pool of resources but does not have a sense of where they are".*
>
> *"There is no mechanism currently to access them".*
>
> *"The current model to accurately calculate the scarce and critical skills for the sector is not accurate enough. The simplistic ways to calculate the need for seafarers do not take into account the complex modelling required to determine the feasibility of an economic strategy for the sector. You cannot use scarce and critical skills data for long-term planning of economic growth - the volatility in sector skills data from year to year is not sound".*
>
> *"We need to be learning from models of other maritime nations to see why they are preferred suppliers"*

To be a leading maritime nation, the South African maritime sector will need to develop a national maritime database to provide a single point of contact for people pursuing a maritime career.

9.4.3 Unfavourable legislative regime

There are a number of key issues identified with regard to legislative impediments. The following key weaknesses were identified through this study:

- Bureaucracy hampers global links to South Africa's maritime industry. As quoted:

> *"South Africa has tried to become a labour supply nation for seafarers in the past but it has been difficult for foreign funders to negotiate South Africa's bureaucratic structures".*

- Unattractive and non-competitive legislation compared to maritime nations: South Africa has legal limitations that do not support a tax incentive for learnerships to ensure those trained become certified. This theme is described through the following quotes:

> *"South Africa's ships registration is good but weaknesses are the system of taxation and the ranking of mortgages".*
>
> *"There must be a new regime that talk to coastal shipping – some regulatory reform that supports cabotage".*

- It is necessary for South Africa to review and review tax legislation to become more competitive and open up opportunities to register more ships under the South African flag
- Lack of institutional capacity to change legislation: This theme was highlighted by some stakeholders, as quoted:

> *"The legislative process is too slow".*
>
> *"The lag in governance processes is due to a lack of institutional capacity. The oil legislation process still is not done and it has been 12 years".*

- The impediments to current legislation have been elaborated by interviewees in more detail in chapter 7.

9.4.4 Management skills

The following key weakness was identified through this study:

- Management skills were highlighted as limited in the maritime sector.
- Business skills: The shipping industry has not been maximised in South Africa. Stakeholders highlighted the need for business skills, as quoted:

> *"It seems there are business skills needed to run shipping businesses".*

9.4.5 Acquisition of sea-time to complete a seafarer qualification

For many years, one of the major problems to have been identified has been the shortage of sea-time training vessels for cadets attending maritime academies in developing countries[95]. A mechanism is required to provide a smooth transition from theoretical training to berth as a pre-requisite to receiving a seafarer qualification. Limited access to berth was a theme highlighted by all stakeholder groups and is illustrated in the analysis instrument. South Africa has only one ship on its register and all trade is carried in foreign registered ships.

This situation deprives the youth of South Africa of careers at sea and in the maritime industry[96]. Stakeholders in the industry indicated the limited access to berth seafarers because of there being only one ship on South Africa's register.

The following quotes illustrate this key weakness:

> *"South Africa has neglected the maritime industry, which is evident in the number of ships currently in the registry. In 1991 South Africa had 72 ships and in 2010 the country has only one commercial ship. The ships that were in South Africa's register left for better tonnage taxes and mortgage ranking. In terms of the SETA funding framework, once cadets are on a foreign ship they fall outside of the SETA funding framework – resulting in students completing their studies but unable to get sea time".*

[95] Go to Sea Young Man. Article by IMO. Provided by SAMSA (6 December 2010)

[96] A Sail Training Vessel for South Africa. Article provided by SAMSA (6 December 2010)

"Training is very expensive + R70 000-75 000, TETA can only grant R30 000 per candidate however the big employers need certified seafarers and will continue to train and self-fund".

"The difference today compared to 20 years ago is that SA no longer has access to ships on the register, therefore we are not as marine-aware today as we were and seafarers had somewhere to berth and gain good experience – it wasn't as daunting a task to get a job as it is today".

This study identified that CPUT and DUT faculties have formed partnerships with foreign ship owners on behalf of their institutions to enable cadet certification, but in order to grow the skills pool and build the national maritime sector an extra-ordinary effort by all stakeholders is required. National support from DOT and Government including the DHET as the cadet sea time can be defined as the Work Integrated Learning (WIL) component required by students of a University of Technology.

9.4.6 Research and benchmarking

The analysis of stakeholder interviews identified the need for **research and benchmarking** as a theme. This is illustrated through the quotes below:

"Limited research and benchmarking has been done in the skills arena within the South Africa maritime sector".

"It will be imperative for our maritime sector to determine how other maritime nations have become major labour suppliers so that the maritime skills development strategy is aligned to international requirements for South Africa to become a competitor in the supply of maritime skills. There is a local and global shortage for seafarers in off-shore and on-shore positions".

"South Africa should spend a concerted effort benchmarking against leading global maritime nations to identify the factors facilitating their competitive advantage".

Recommendations to re-position South Africa based on weaknesses in the maritime sector:

Further research is recommended to investigate the following:

- Determine where skills development investment should go, determining the feasibility and projected return on investment;

- Analyse best practices of other countries and benchmark South Africa against these. One research study example is to conduct a global best practice study on successful shipping industries (what factors that make shipping businesses successful and factors that lead to failure); the feasibility of growing South Africa's shipping industry with a cost-analysis and recommendations on focus areas in the short and medium-term.

To attract ships to South Africa's registry, South Africa must aim to become a favourable mortgage ranking country. Conduct a study to determine how to re-align the national ship registry regime based on best practice, considering the efforts of Panama, Japan, UK and the Bahamas as a guideline. Recommendation to increase the number of ships on the SA register: Identify African countries with flagships and global companies who have taken on flagships in other African countries. Nurture further current relationships with African countries broader than only SADEC countries. Offer flags to African foreign ship owners at a better rate than available from other African countries.

Increase institutional capacity to review and update poor maritime legislation and speed up governance processes to promulgate revised legislation. Increase training provision of key maritime skills, especially in the Eastern Cape where there are limited training institutions. South Africa must remedy legal parameters that create unfavourable conditions for registering ships. SARS should introduce tonnage tax and relook at industry tax and incentives which will lead the way to a revival of the South African shipping register. A South African shipping register will open up opportunities for skills development and employment.

The maritime industry is global. South Africa should be on par or above par internationally to become a maritime nation. South Africa needs to ensure that maritime qualifications meet international convention standards. In terms of providing quality training, to grow the maritime sector there may be the necessity to temporarily import the skills we do not have and replace these eventually. It will be key to identify the masters or experts who have the skills and ability to train and mentor in the maritime sector. Investigate the most appropriate mechanism to access the pool of teachers, mentors and coaches to train the future skills pool in the maritime sector.

Maritime training facilities need to be resourced adequately (both in financial and human resource terms) to ensure a supply of competent maritime cadets.

Determine how to attract highly competent teachers into training institutions through appropriate remuneration.

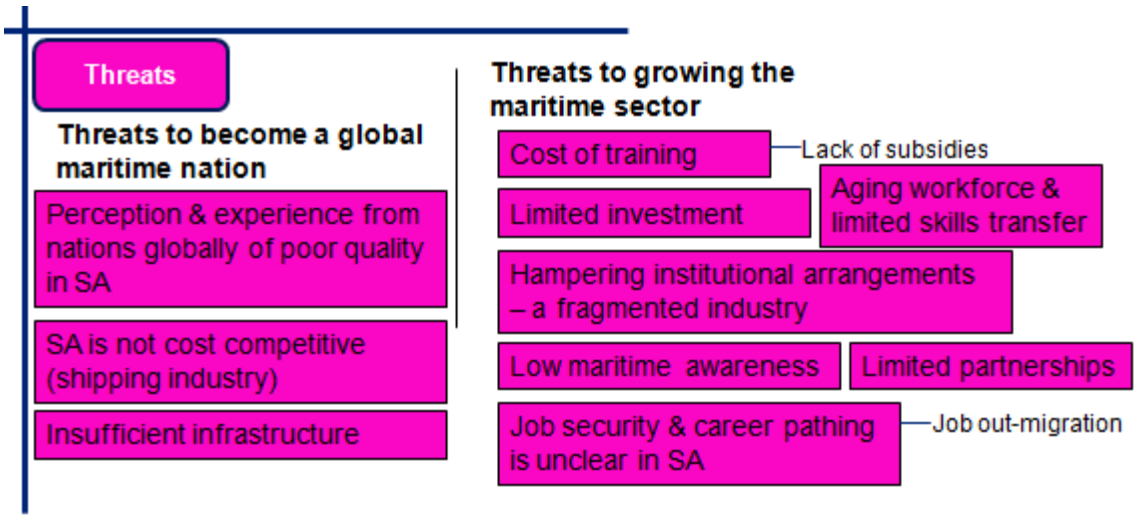
It is worthwhile investigating the course options and curriculum content of maritime nations and developing curricula in South Africa that go beyond current best practice. It is recommended that maritime colleges be established (perhaps by building capacity in existing reputable maritime training institutions) and training options be expanded. Maritime nations have maritime MBA's or executive leadership training.

Re-introduce the concept of apprenticeships with highly competent mentors and coaches to improve the quality of skills to a level where the international maritime sector recognises South Africans as highly skilled and competent. "*Quality translates to how South Africa s perceived by international clients*"

9.5 Current threats

Stakeholders across the industry identified a number of threats in the maritime industry that are hindering South Africa's maritime sector.

Threats are divided into those that threaten South Africa becoming a global maritime nation and those that threaten the growth of our South African maritime sector based on shortcomings our local sector has currently.



Ten threats were identified through this study. Threats to become a global maritime nation include an increased global perception and experience of poor quality; no cost competitive advantage in the shipping industry; and insufficient shore side infrastructure.

Threats to growing the maritime sector include the cost of training; limited investment; an aging workforce; hampering institutional arrangements; low maritime awareness; limited partnerships; and job security and career pathing being unclear in the maritime sector.

9.5.1 Perception and experience of poor quality

Poor quality was identified as a theme amongst some industry stakeholders and identified as a key threat was identified through this study. As quoted:

"Ship masters as clients roll their eyes at the quality of service delivered by clearing agents in South Africa".

"Ship owners/captains who get their ship fitted or repaired are often dissatisfied with the quality of work provided by South Africans".

9.5.2 Lack of cost-competitiveness

South Africa is not cost-competitive in the shipping industry: This theme was highlighted across all stakeholder groups. Respondents particularly emphasised that ports costs are expensive. As quoted:

"Ports should be able to compete"

"The fact that the National Ports Authority has a monopoly might reduce the incentive to be cost competitive".

"East London is not being invested in due to the monopoly by the NPA. You need a market for skills to matter".

"People are not being innovative in this industry"

There is caution by a number of industry experts across provinces who feel strongly that growing the shipping industry is not the most economically wise approach to growing the maritime sector.

9.5.3 Insufficient infrastructure

South Africa must minimise the constraints identified to maritime activity. These include insufficient shore-side facilities and infrastructure (an example is special cranes for cargo-handling), as well as social, legal, political and economic constraints.

Port services are not meeting global standards: Half of the stakeholders from Government and Education and Training Institutions commented that national government intervention is required to upgrade port services to enable SA global competiveness. All the respondents from group Industry and Societies and Professional Bodies agreed and strongly expressed the need for massive government intervention to upgrade infrastructure. Major stakeholders expressed concern that lack of infrastructure upgrade is impacting vital services such as ship repair.

The following quotes support this infrastructure need:

"As trade volumes rise to Africa, it is even more important for African ports to improve cargo-handling operations. While most African ports can handle containers, their cargo-handling operations will remain less efficient if special container cranes are not used".

"A quick-win for the East London port is to invest in a special crane".

"Infrastructure needs to be geared up. Institutional infrastructure is required with simulation at universities and colleges to train people practically".

"Maritime Research and Development is an urgent need at institutions".

9.5.4 Limited investment

The high cost of training with limited subsidies and investment in skills development was highlighted in the analysis instrument. As quoted:

"A barrier for entry for learners into the maritime sector is that studies are expensive".

"There is no investment and no sustainability for higher level maritime professionals"

"You need investment in skills and infrastructure".

Government should introduce training subsidies in line with those provided by leading maritime nations that South Africa aspires to compete with in the future.

The IMO has placed a lot of emphasis on capacity building through training and support to regional and national maritime institutions[97].

9.5.5 Hampering institutional arrangements

This theme was highlighted across all stakeholder groups. The institutional arrangements governing the maritime sector in SA are not optimal and interviewees referred to the industry as fragmented. A number of current shortfalls were highlighted, including the following:

"There are insufficient resources in provincial governments to attend to maritime".

"The attention given to maritime is too low".

"The maritime unit in the DOT is particularly weak".

"Government must have the skills in maritime – there is serious alignment needed".

Stakeholders recommended maritime expertise at Government level, including maritime economists, lawyers and professionals.

Linked specifically to the issue to berth seafarers, there is no alignment between SAQA and SAMSA: Students are enrolled in maritime studies with all parties fully aware that no sea-time will result in no certification, which implies no employment as a seafarer. As quoted:

"Students are enrolled in maritime studies because the DHET and DOT wants to see the numbers especially at FET Colleges and Universities of Technology e.g. CPUT and DUT".

"The priorities in the Department of Transport are correct with road and rail being priorities, but this leads to the maritime industry being neglected. The role of provincial government to facilitate growth of the sector is also limited".

"There is a constructional constraint in the development of the maritime sector as provincial government's authority over maritime issues is deferred to national government".

[97] Go to Sea Young Man. Article by IMO. Provided by SAMSA (6 December 2010)

"Because the maritime industry is fragmented across different departments, it falls to national government to get things done. However, at national level, most time is given to other sector focuses such as rail".

"Maritime cuts across multiple ministries: DOT, Treasury, DOL, Tourism, Mining & Minerals, and Agriculture, to name a few".

"The maritime sector has to relate to too many SETA's (MERSETA, Construction SETA and Services SETA to name a few".

"This industry does not really have a home"

"Within the maritime sector, the fishing industry seems to stand alone".

"Skills development efforts are benefiting the larger provinces, with limited assistance being offered from national level to the poorer provinces for maritime".

Recommendations by stakeholders are that there should be more autonomy at provincial level in terms of economic investments and decision making.

9.5.6 Low maritime awareness

The theme of low maritime awareness was identified as a key threat through this study. As quoted:

"There is a low maritime awareness in South Africa"

"It is difficult to attract young people to maritime careers. There is low maritime awareness – maritime careers are associated with off-shore careers".

"It is an invisible industry for most people – the general public don't see the industry".

A reason given by a few respondents for why South Africa is not a maritime aware nation is because "we no longer have a merchant marine – a ship. Ship-owning nations are more aware. By not having the transfer of seafarers into shore-based occupations, combined with fact that not maritime aware in South Africa, the industry becomes an expat industry".

"We are working with the Department of Education to offer awareness programmes in schools and in different municipalities with the aim of increasing awareness of the maritime industry.

"There is a need to educate partners and stakeholder in South Africa so that they understand that SA skills on foreign ships are not lost to the Country… foreign currency, economic growth and enhanced skills will be gained".

The 'Go to Sea!' campaign was launched in November 2008 in association with the International Labour Organization, the 'Round Table' of shipping NGOs – BIMCO, ICS/ISF, INTERCARGO and INTERTANKO – and the International Transport Workers Federation. The specific aim is to promote seafaring as an attractive option for young people of the right calibre, one which can provide them with rewarding, stimulating and long-term prospects, not only at sea but also in the broader maritime industry[98].

9.5.7 Limited partnerships

Limited partnerships were identified as a theme which is a threat to skills development in the maritime sector. As quoted:

"Creating and nurturing local and international partnerships will be key to growing the industry".

"Partnerships are regarded as key to getting a sector to move in the same direction".

9.5.8 Aging maritime population

South Africa has an aging population of maritime specialists who are providing limited skills transfer. This is not unique to South Africa - the age of the officers is a worldwide issue. This theme is highlighted by the following quotes:

"I am around 70 and I still get called in to pilot ships into the harbour. This is because there aren't enough pilots".

"Maritime department lecturers are on average between 50 and 70 years old".

"There are professional in the system who have gathered wisdom teaching but do not impart their knowledge and expertise to the younger generations – no skill transfer is visible".

"Current lecturers in the industry are retiring in the next decade, which may create a crisis in the industry".

[98] Go to Sea Young Man. Article by IMO. Provided by SAMSA (6 December 2010)

9.5.9 Job security and career pathing is unclear

The theme of job security and career pathing being unclear in the South African maritime sector was identified by some stakeholders. As quoted:

"In those times being a certified officer provided job security as well – one of the big attractions was job security – you would begin with SAR&H as a cadet and end as a master mariner and ships pilot – the career path was clear and you would spend your life with the one company".

"Employees in the sector are unclear with regard to job security, career pathing and pension".

Linked to job security is the impact of maritime specialists finding jobs abroad. As stated, "Most pilots go overseas to get a job – there is this out-migration. Being a pilot overseas pays well and it is a regarded as a good job".

This lack of clarity is a key threat to attracting skills to the industry.

Linked to job security is the ability to retain sector skills. Developing maritime retention strategies by focusing on creating integrated learning programmes for the sector, coherent career pathing and financial incentives to retain maritime skills.

Recommendations to re-position South Africa based on threats to the maritime sector:

It is recommended that there be investment through subsidies for studies in various occupations in the maritime sector. It is key to bring students/youth to maritime schools. Without subsidy there is a high barrier to entry into the maritime sector. Investment should also be considered for Research and Development at institutions and simulation at universities and colleges to train people practically.

There should be a drive for career guidance in schools to enhance maritime awareness through campaigns. Maths and science are key subjects required for the maritime industry. There should be greater eminence of the maritime sector through visible leadership discussions and support.

Career pathing and job security should be a key focus to attract and retain skills in the maritime sector.

There should be more autonomy at provincial level in terms of economic investments and decision making.

In the absence of a dedicated Maritime Ministry, SAMSA should be an Authority with a mandate that does not clash with the Department of Transport but gives SAMSA autonomy to act when required.

Maritime occupations should fall under one sector skills body.

There should be a dedicated task team to focus on innovations suitable to South Africa for the future.

Skills transfer: The sector should create a motivation/incentive for competent professionals, especially those close to retirement or who are already on retirement, to transfer skills by becoming mentors or coaches.

10 Conclusion and recommendations

If collaboration is not enhanced in a meaningful way, we will not move forward with skills development in the industry.

This research study has identified the type of infrastructure investment required to build the maritime economy of the country.

There is a mandate to support needs of maritime sector - for the duration of this NSDS, priority will be given to upgrading the public colleges, universities of technology and universities so that quality provision can be made accessible to many more learners. The Maritime Sector must ensure they leverage funds to respond to gaps and needs identified through this study.

There is an opportunity for South Africa to upskill people for use locally and abroad, provided the quality of training meets international standards and partnerships are developed internationally to absorb the supply of qualified maritime professionals.

The study identified key attributes to ensure effective re-positioning of the maritime sector as a leading maritime nation. These include:

- Collaborative efforts between stakeholders across the industry;
- Strategic partnerships;
- Ensuring buy-in and action from relevant drivers within the industry;
- Understanding successes and shortfalls and strengthening feedback loops;
- Information that is up-to-date, relevant and accessible to the industry;
- Good communication to raise awareness and market service offerings, as well as effective service offerings.

This skills study has lead to the planting of a seed that needs to be watered. It is recommended that the momentum be maintained by building on the primary findings presented from this study, putting in place dedicated resources to drive the improvement of SAMSA's authority, roles and responsibilities in the aim of closing the gaps identified through this study.

If leadership is said to define the culture of companies, then logically, it also collectively defines the culture of industries. It therefore stands to reason that only once leadership takes charge and there is collaboration and support across legislative authorities, can the industry be moulded precisely into the shape of what the sector needs. Only Then will the outcome of this study prove successful.

This chapter consolidates the recommendations summarised in green blocks throughout the study. Section 10.1 provides key recommendations for the next step that SAMSA should take to gain an in-depth understanding of supply and demand numbers for industries within the maritime sector. Section 10.2 presents recommendations in terms of establishing a national maritime skills development agenda. Section 10.3 provides recommendations to aid South Africa in creating an enabling legislative and regulatory environment to enable global competitiveness. In Section 10.4, recommendations to grow the maritime sector skills pool are provided. Finally, Section 10.5 presents the envisioned future state of the maritime sector with a view to re-positioning the South African maritime sector regionally and globally. The SWOT analysis presenting the ideal future positioning of the maritime industry links current weaknesses, threats and opportunities to future strengths that the industry should be driving towards to ensure that South Africa becomes a leading maritime nation.

10.1 Gaining an in-depth understanding of supply and demand numbers for industries within the maritime sector

Of significant value to this study is the Maritime Sector Skills Development Model, which provides an indication of the maritime footprint within South Africa. Exploratory research has provided an understanding of the maritime sector footprint, which did not exist before this study. Numbers presented for maritime industries are indicative as they provide an initial first impression of each industry.

As a next step, it is imperative that SAMSA focus on collating a database of every company within the maritime sector in South Africa. Once a directory exists of the entire population of organisations within the maritime sector (something that does not exist but is required to determine accurate numbers for the sector), a survey could be sent out annually to gain an accurate sense of actual real-time skills shortages for each industry within the maritime sector. Only once the entire population of organisations are identified within the maritime sector, can a representative sample of companies be selected for an annual survey. An annual maritime sector survey that is based on a representative sampling frame could determine the following:

- Real-time or current skills shortages, would provide an accurate reflection of the skills gaps within the maritime sector;
- Current and projected revenue for the sector; and
- Accurate and reliable growth strategies that a Maritime Sector Skills Development Strategy could prioritise to grow South Africa into a leading maritime nation globally

Some quick-wins with regards to obtaining company information is to place advertisement for registration in national news papers and the tender bulletin. SAMSA could collate data from companies in South Africa without much effort by requesting companies to provide data for a maritime sector database from which SAMSA can draw information.

10.2 Establish a national maritime skills development agenda

When considering a national skills development agenda that explores economic growth and job creation opportunities, it will be beneficial, as a starting point to develop a skills development strategic plan, to utilise the broadened footprint of the maritime sector value chain presented as a result of this study.

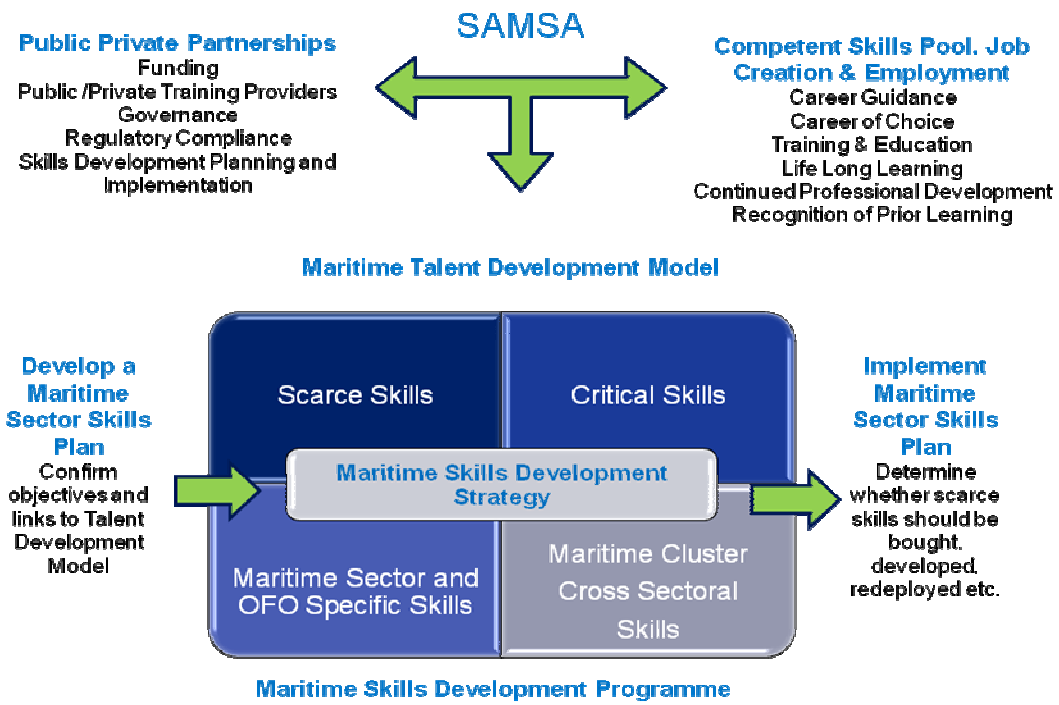
Implementation of a **Maritime Skills Development Strategy** should be guided by a long range **Maritime Skills Development Plan** based on sound analysis of data collected via continued research, M&E and quality management processes, resulting in a sustainable

Maritime Talent Development Model. The main benefit of Maritime Talent Development Model developed via a collaborative approach involving all stakeholders, is that short and long term skills planning can be done using a predictive model to evaluate skills demand versus skills supply.

Measurement of skills supply should therefore incorporate a variety of sources including employers' across maritime clusters internal transfers, internal skills development programmes, external hires etc.

A solidly designed **Maritime Talent Development Model** as illustrated below will result in a **Maritime Skills Development Strategy** and **Maritime Sector Skills Plan** aimed at creating a sustainable skills pool which will continue to meet employers' skills demand.

Figure 11: Proposed Talent Development Model



The proposed Talent Development Model illustrated above, should make provision for:

- A Maritime Skills Development Strategy

- Research required to develop a Maritime Sector Skills Plan to guide
  - Skills development programme development and workforce planning;
  - Funding requirements for strategic skills development programmes;
  - Education, training and continued professional development;
  - Mentoring and skills transfer; and
  - Workforce mobility between on- and off shore occupations etc.
- A Governance Structure – clearly defining stakeholders' roles and responsibilities.
- A sustainable Funding Model specifically aimed at strategic skills development programmes via public private partnerships.
- Building a skills pipeline from entry level skills to highly specialised technical skills which will meet industry's critical & scarce skills demands.
- The industry's transformation goals with specific focus on Leadership and Specialist development programmes aligned to industry's Employment Equity goals as stated in the Maritime Sector BEE Charter.
- SAMSA/Industry and education & training providers' infrastructural requirements necessary for knowledge management, research and Monitoring & Evaluation.
- A Quality Management System.

The maritime sector talent development model should recognise that the maritime sector is larger than the shipping industry. The maritime sector is comprised of primary and secondary industry clusters and can be divided into seven clusters.

The implementation process will require a Maritime Skills Development Strategy steered by SAMSA in collaboration with strategic public private partnerships including stakeholders from government (incl. other DOT agencies), industry, SETAs, education & training providers as well as regional and global stakeholders.

Below is a graphical illustration of the proposed framework for developing a South African Maritime Skills Development Strategy which will address demand and supply of critical & scarce skills.

Figure 12: Framework for a Maritime Skills Development Strategy

It is furthermore recommended that SAMSA follow a collaborative process involving all relevant and key stakeholders including SETAs residing over Maritime clusters in order to establish a comprehensive **Maritime Competency Framework**. Such a framework should be benchmarked globally and form the basis for the development of the South African Maritime OFO and relevant qualifications.

A thorough well planned process will result in a standardized framework for all future skills development planning for the maritime sector. Vital to the success of the process should be a rigorous and targeted communication strategy inclusive of a Career Awareness Campaign. The design and development process should also include evaluation of SAMSA's infrastructure and resource requirements needed to lead implementation of a Maritime Skills Development Strategy. Clarification and role definition of SAMSA's mandate within the changing South African Skills Development regulatory framework should be sought.

Recommended priority focus areas to inform South Africa's maritime skills development strategy

It is recommended that as a first next step, stakeholders conduct a feasibility study to determine the feasibility of training seafarers for global supply.

Learning's can be taken from global solutions brought forward by maritime nations. These include:

- Creating and nurturing local and international partnerships will be key to growing the industry. Partnerships are regarded as key to getting a sector to move in the same direction.
- Conducting maritime awareness campaigns
- Developing maritime retention strategies by focusing on creating integrated learning programmes for the sector, coherent career pathing and financial incentives to retain maritime skills.
- Because maritime is an international industry, it is important that maritime qualifications meet international convention standards.
- South Africa should spend a concerted effort benchmarking against leading global maritime nations to identify the factors facilitating their competitive advantage.
- The increased demand of seafarers can only be accommodated if recruitment and training are increased.
- To be a leading maritime nation, the South African maritime sector will need to develop a national maritime database to provide a single point of contact for people pursuing a maritime career.
- Introduce government training subsidies in line with those provided by leading maritime nations that South Africa aspires to compete with in the future.
- Introduce a Maritime Levy Fund to assist in developing skills for the industry. The maritime sector is big enough for such a fund to be justified and it is necessary to drive the development of skills for the industry to support the anticipated growth in the demand for maritime skills.
- Introduce tax benefits: Tax benefits for increased training, as done in the UK, is a similar principle to the 1% skills levy in South Africa. A tax incentive is encouraged to increase training of seafarers and increase employment opportunities. Training costs should be shared amongst maritime stakeholders.
- Introduce tax rebates: Seafarers should receive rebates on personal income tax.

10.3 Creating an enabling legislative and regulatory environment to enable global competitiveness:

South Africa's domestic legislation is outdated. It is of key importance that the Government ratify South Africa's domestic legislation with amendments that include the changes made by the various conventions.

In terms of the regional policy and regulatory environment, inclusion of the African Maritime Transport Charter in the South African Maritime regulatory framework will speed up its enforcement; such a development will include regional development and job opportunities for women and youth including unemployed graduates/matriculants and rural youth.

- To overcome the challenge of a fragmented industry, a dedicated maritime ministry is required that can highlight the contribution of the maritime sector to the overall economy of the country. This could be in the form of a Statutory Entity that becomes the central point of contact for the maritime industry regarding the sharing of teaching resources across the sector, central funding mechanisms, training matters, etc.
- SARS should introduce tonnage tax and relook at industry tax and incentives which will lead the way to a revival of the SA shipping register. Major intervention through the tripartite of DOT/SAMSA/SA Government is required to enable growth of the sector. Foreign ship owners should be offered incentives such as tonnage tax and training incentives to offer our cadets sea time. Only then will we be able to compete against the rest of the world and attract the investment our Country not only desires but deserves.
- South Africa's legislative policy with regard to HIV status differs from the global maritime nations. Government will need to work with this factor when considering the growth of the maritime sector

10.4 Recommendations to grow the maritime sector skills pool, building an enabling infrastructure and affirm SA maritime sector's regional and global position

The dependence by African countries for foreign trade makes the quality, efficiency and cost-effectiveness of maritime transport crucial factors in the continent's competitiveness. Increased trade implies the need for high-quality skills in the maritime industry to remain competitive. The global shortfall of seafarers and increased age of maritime professionals is of great concern to the global maritime sector and efforts are being made by maritime nations to address this. Along with the shortfall there are a decreased number of recruits into the maritime sector and therefore the increased need to attract and retain maritime sector skills.

- South Africa must minimise the constraints identified to maritime activity. These include insufficient shore-side facilities and infrastructure (an example is special cranes for cargo-handling), as well as social, legal, political and economic constraints.
- It will be imperative for our maritime sector to determine how other maritime nations have become major labour suppliers so that the maritime skills development strategy is aligned to international requirements for South Africa to become a competitor in the supply of maritime skills. There is a local and global shortage for seafarers in sea-going and shore-based positions.
- There are think tanks within the maritime sector globally that could be accessed in a future study to identify challenges globally within each of the industries found within the maritime sector.
- Strong recruitment processes must be put in place to ensure that a broad pool of skills is brought into the sector. BBBEE should not hamper the recruitment of competent learners since the demand for skills is great enough to accommodate all race groups locally and internationally.
- South Africa should become a Resource Hub for Trained manpower, supplying competent certified seafarers to the world shipping.
- In order to become a major supplier of manpower to the global maritime industry, we will need to show evidence of:

– A strong & time tested maritime education & training system;

– An efficient examination and certification system, for evaluating the competency of the seafarers;

– Build a seafaring culture especially in the coastal regions of our country.

- Creation of a Maritime Skills Development Fund needs to be investigated. This could be created through initial government "seed" funding and private funding from industry. Although it is acknowledged that this option could result in an administrative and management burden, a solidly developed system will allow cadets to get to sea and become certified seafarers. Under this system similar to learnership agreements, cadets would enter into contracts and once certified and earning an income be able to repay a portion or all of their "sea time funding" back into the Maritime Skills Development Fund thereby creating a sustainable funding model.

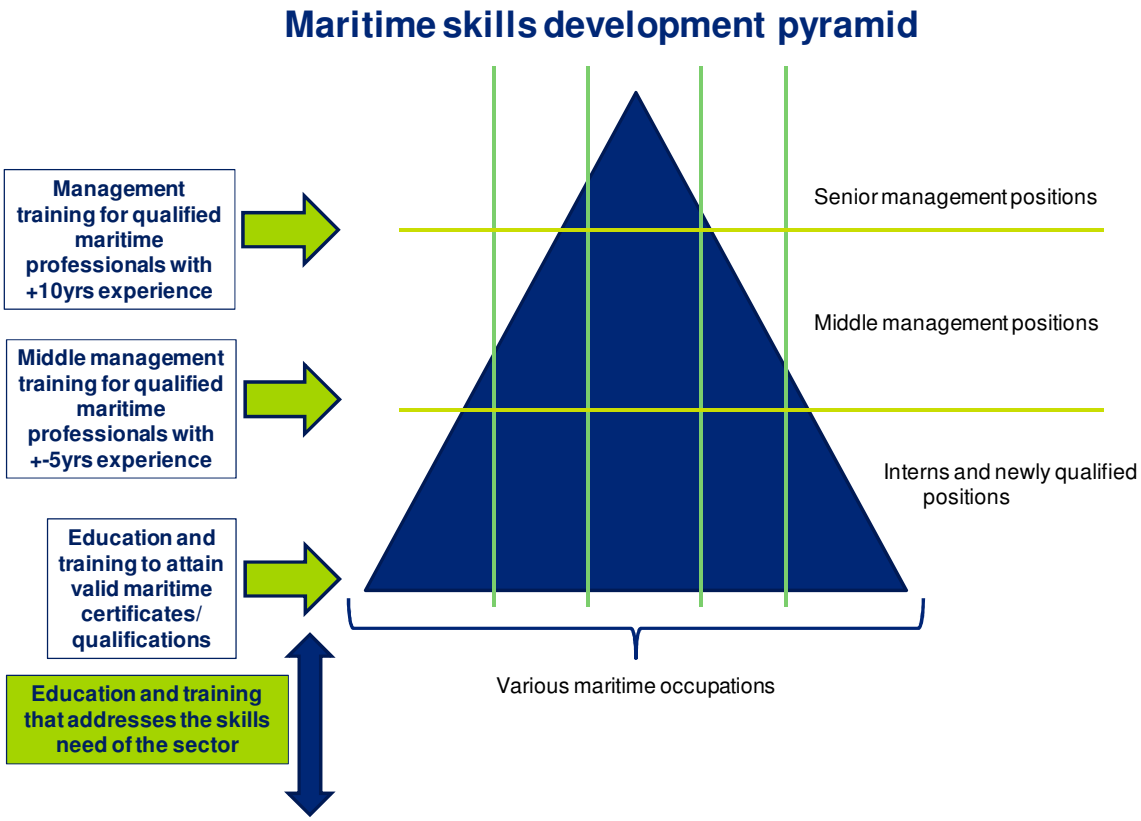
- Private and Public sector organisations should determine how to put in place structures to for Public Private Partnerships to address challenges of the industry together.

10.5 Re-positioning of the sector - The future ideal state of the South African Maritime Sector

The value of presenting a future state is that in doing so, this research is able to identify the critical recommended focus areas that SAMSA, the government and the private sector should place emphasis on to become a globally competitive maritime nation.

- Identify leaders and maritime professionals and institutions that will drive the industry forward.
- The maritime sector is an international environment. For South Africa's maritime sector to grow, South Africans must stop thinking of the sector in terms of local and think of it as an international sector. This implies creating a social environment that is aligned to the international convention standards and legal environment that is attractive to international maritime nations. Currently, South Africa cannot operate internationally with the way legal frameworks are set up as they only accommodate the local environment.
- South Africa is not considered to be a major supplier of officers to foreign flag vessels. Industry leaders should aim to market South Africa's skills to leading maritime nations to place us on the map for a maritime skills supplying nation.
- Assuming that the maritime sector puts in place systems and processes for the development of a highly-skilled pool of maritime skills, a skills development pyramid should guide the logic of recruitment and training. As demonstrated in the skills development pyramid below, recruiting and training a greater number of learners increases the chances for a greater number of qualified maritime professionals. As demonstrated in the findings to this study, management skills are seriously lacking currently in the South African maritime sector. Developing specific management skills through training maritime professionals with experience gained in the sector increases the likelihood to attain middle-management and higher-management capabilities within the sector. The skills development pyramid below demonstrates the growth path that should be encouraged to attain a high quality skills pool in the maritime sector:

Figure 13: Maritime Sector Skills Development Pyramid



- Officer wastage rate and trainee wastage rates are aspects that should be considered and monitored when considering a sectors skills development strategy.
- Reflecting upon industry international environments, many professionals gain experience working in at least four countries. International experience of locally trained maritime experts will be critical when considering the maritime sector skills development strategy. South Africa should not be protectionist but rather see opportunities for enhancing skills of our maritime sector in South Africa through supporting qualified maritime professionals in gaining international experience.
- Identify incentives for highly skilled and experienced maritime officers to train learners. Incentives could include an obligated three weeks training per year or other mandatory requirements. However, incentives must imply a benefit to the trainer and an imbedded understanding that training time spent is beneficial to growing the maritime sector skills in South Africa.

By considering the current weaknesses, threats and opportunities that exist in the maritime sector currently and the recommendations highlighted in the above section, it is valuable to consider an ideal future state that positions the latter as strengths that the industry should be driving towards to ensure that South Africa becomes a leading maritime nation.

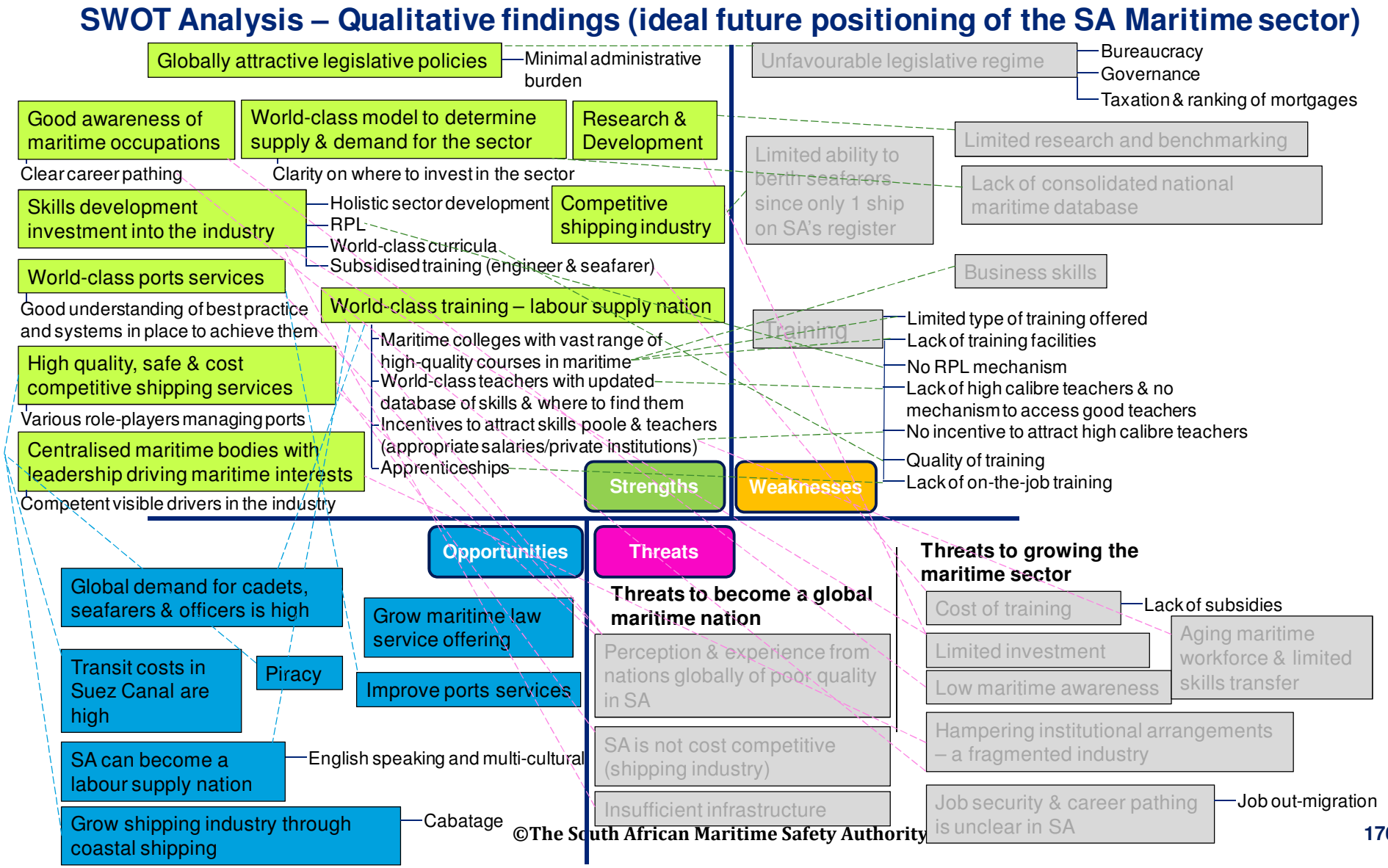
The following diagram is illustrative of where the South African maritime sector should be working towards:

What must South Africa do in the skills development arena to become more competitive?

- Focus on maritime skills development in all provinces not just in some provinces
- Position the country maritime sector to align with global maritime industries
- Utilize current structures and work with the private sector
- Address issues such as the registering of ships under the SA flag
- Promote the other maritime services which our country can offer internationally such as ship repairs and also that we are able to redirect skills from one industry to another such as the artisan skills from the motor industry to “shipping artisans”.
- We need to make our ports more efficient to meet global standards

The diagram on the next page aims to guide the reader by indicating how current weaknesses and threats could shift into future strengths within South Africa’s maritime sector. As illustrated throughout the study and in 10.1, opportunities are also highlighted as future strengths.

Figure 14: The Proposed Future State of the South African Maritime Sector



Annexure A:

A list of market study data used for desktop review

Literature list of references

Acronyms

A List of Market Study Data Used for Desktop Review

Topic Category	Sub-Categories	No. of Sources
Global Maritime Overview	Maritime Footprint	13
	Global Shipping & Trade	16
	Global Maritime Policy Environment	15
	Maritime Authorities & Functions	15
	Various Maritime Sector Industries	19
South African Maritime Overview	Government & Governance	9
	SA Transport	11
	SA Ports	6
	SA Shipping	7
	SA Fishing	6
	SA Maritime Leisure	4
Global Maritime Development Models & Strategies	Policies & Strategies	8
	Market Development Programmes & Initiatives	8
South African Maritime Development Models & Strategies	Policies & Strategies	5
	Market Development Programmes & Initiatives	3

Maritime HRM&D	Skills Shortages	19
	Skills Shortage Solutions	17
	Maritime Occupations Lists	9
	Maritime Training Global	22
	Maritime Training Local	12
	SETAs	11
Key Strategic Trends	Globalisation	17
	Sustainability	22
	FDI & Financing	14
	Security	21
	Changes in Regulations	6
Additional Issues in Maritime	China	3
	Accounting Systems	5
	Technological Innovation	12
	Multicultural Management Approaches	4
	Total Sources Reviewed	**339**

A Reference List of Documents Used for Desktop Review

Australian Maritime Digest. *Australian Association For Maritime Affairs*. 1 August 2009

Australian Maritime Digest. *Australian Association For Maritime Affairs*. 1 July 2009

Corbett, J.J. Winebrake J. *The Impacts of Globalisation on International Maritime Transport Activity.* Mexico. November 2008

Deloitte Shipping. *The Luxembourg Shipping Business*. 2010

Deloitte Shipping. *The emergence of China: New frontiers in outbound M&A.* Nov 2009

Deloitte Shipping India Atul Kulkarni. *Emerging Maritime Business in India*, Global ATS Shipping Summit, Copenhagen. 15 May 2007

Deloitte Shipping. *Consideration For The Shipping Industry.* 2009

Dlamini, T. *PROGRESS WITH THE TETA INITIATIVE ON THE SOUTH AFRICAN SHIPPING ENVIRONMENT.*

Dr Botes, L. *(WESTERN CAPE AQUACULTURE SKILLS DEVELOPMENT AND TRAINING PROGRAMME).* Cape Town, South Africa.

Dr Shaw, A. *Public Private Partnerships in the Transport Sector*. South Africa.

Dujenski, A. (March 19 2004). *National Research Council, Marine Board Study Report "Fishing Vessel Safety: Blueprint for a National Program" A Summary and Observations.* Seattle, Washington.

EuroMed Transport Project. *Micro Study on Public Private Partnerships in the Transport Sector "Promotion of private sector involvement in the provision of transport infrastructure in the Mediterranean countries"* December 2008

Huiskamp U. *Sustain Your Ability.* London 2008

IMO Library Services. *International Shipping and World Trade Facts and figures.* (21 February 2006).

INGPEN, B. POTENTIAL FOR MARITIME TRAINING IN SOUTH AFRICA.

Jerome, A. *Private Sector Participation in Infrastructure in Africa*. Midrand South Africa. September 2008

Jivotovsky, L. *Effective management of freight risk using derivatives – A User Guide.* Baltic. March 2010

Luisman, F.C.M. MSc, van Vliet, J.J.B. MBA QC, van der Vlist, P. MSc CPIM, Slot R.J. MBA RC, Dr. Hofman W.J. MSc, baron van Lynden, C.J.H. Attorney at Law, van Herwaarden E. MSc, Coonen R. MBA, Schaap J. MScBA, Koolmees I MSc, Pittar P. BBS, CA, Sarwal, Boden, P. Karen, J. Young, J. Cambanis, G. Kartsaklis, A. Moodley, L. Gounden, A. Kulkarni, A. Mistry, S. *DTT Port Services Methodology*.

Maritime and Transport Service Industry BEE Charter. December 2003
Maritime Functions Within Carrick District. Carrick House Pyder Street, UK. June 2007

Thompson Clarke Shipping (Pty) Ltd. *MARITIME SKILLS AVAILIBILITY STUDY* a study conducted for the Australian Maritime Safety Authority. November 2002

Marjamaa, A. *Taking the Pulse on Maritime Industry.* October 8, 2009

MR ZANDEE, P. *SEAFARER TRAINING IN SOUTH AFRICA A PERSPECTIVE*

Nicholas Fang. *Labour Shortage Could Hit Booming Maritime Sector.* September 13, 2007

O'Neill, P. (2005). *Key Issues In Global Shipping.* UK.

Phase II Diagnostic Report: *Industry Activities.* Canada. March 2008

PROGOULAKI, M. *DEALING WITH THE CULTURE OF THE MARITIME MANPOWER IN A*

SOCIALLY RESPONSIBLE MANNER.

SECRETARIAT OF THE PACIFIC COMMUNITY, 2006. *Regional Marirtime Programme Strategic Plan.*

Staff Writers. *An Analysis Of The Emerging Maritime VSAT Market.* London: UK. May 09, 2008

Singhal, R. Patkar, S. Ganesh, B. *International Competitiveness of Indian Maritime Sector.* Navi Mumbai.

The International Maritime Human Element Bulletin. 20 April 2009

The Mackinnon Partnership. *Maritime Education and Training in Scotland.* Perivale, Middlesex. September 2008

The Mackinnon Partnership (February 2005) *A review of the fishing, ports and shipping industries for the Maritime Skills Alliance.* Middlesex.

The Mackinnon Partnership (December 2003). *Maritime Sector Footprint.* Middlesex.

Transport Education & Training Authority (2004). *Sector Skills Plan. Johannesburg, South Africa.*

UNCTAD Secretariat. *Review of Maritime Transport*. New York and Geneva 2009

Winston & Strawn LLP. *Briefing.* Washington DC. March 2009

Wade Maritime Consultants. *Maritime Business Advisors.* India. Switzerland.

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A list of acronyms

List of Acronyms	
ABET	Adult Basic Education Training
ACE	American Council on Education
ASA	Australian Shipowners Association
ASSET	Association for Educational Transformation
ASGISA	Accelerated and Shared Growth Initiative
ATR	Annual Training Reports
AU	African Union
BPO&O	Business Processing Outsourcing and Offshoring
BEE	Black Economic Empowerment
BBBEE	Broad Based Black Economic Empowerment Act
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CHE	Council on Higher Education
CIP	Critical Infrastructure Programme
CIS	Co-operative Incentive Scheme
DAFF	Department of Agriculture, Forestry and Fisheries
DBE	Disadvantaged Business Enterprise

DBSA	Development Bank of South Africa
DEA	Department of Environmental Affairs
DHET	Department of Higher Education and Training
DOCS	Development of Certificated Seafarers
DOL	Department of Labour
DOT	Department of Transport
DPRU	Development Policy Research Unit
DTI	Department of Trade and Industry
ECDC	Eastern Cape Development Corporation
DWA	Department of Water Affairs
ECDIS	Electronic Charts And Information Systems
ETD	Education Training And development
ETQA	Education and Training Quality Assurance
EU	European Union
EUR	Erasmus University Rotterdam
FAIS	Financial Advisory and Intermediary Services
FDI	Foreign Direct Investment
GAFT	Government Assistance for Training
GBP	British Pound

GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
FET	Further Education and Training
HET	Higher Education and Training
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HKMIC	Hong Kong Maritime Industry Council
HK$	Hong Kong Dollar
HRDSA	Human Resource Development South Africa
HRM&D	Human Resources Management & Development
ICS	International Chamber of Shipping
IDC	Industrial Development Corporation
ILO	International Labour Organisation
IMDO	Irish Maritime Development Office
IMO	International Maritime Organisation
IMSSEA	International Maritime Safety, Security and Environment Academy
IMU	Indian Maritime University
INSETA	Insurance Sector Education Authority
ISEAS	Irish Seafarer Education Assistance Scheme
IPAP	Industrial Policy Action Plan
JIPSA	Joint Initiative on Priority Skills Acquisition

LG SETA	Local Government Sector Education Training Authority
MFMA	Municipal Finance Management Act
M&E	Monitoring and Evaluation
MBA	Master Business Administration
MCA	Marine and Coastguard Agency
MCF	Maritime Cluster Fund
MERSETA	Manufacturing, Engineering And Related Services SETA
MOU	Memorandum of Understanding
MPA of Singapore	Maritime & Port Authority of Singapore
MQA	Mining Qualification Authority
MSA	Moving South Africa Project
MTI	Maritime Transport Industry
MTT	Maritime Training Trust
NDT	National Department of Tourism
NEF	National Empowerment Fund
NEPAD	New Partnership for Africa's Development
NIPF	National Industrial Policy Framework
NSA	National Skills Authority
NSA	Norwegian Shipowners Association

NSDS	National Skills Development Strategy
NSFAS	National Student Financial Aid Scheme
NSF	National Skills Fund
NSRI	National Sea Rescue Institute
NPA	National Ports Authority
NQF	National Qualification Framework
NRF	National Research Foundation
NUMAST	National Union of Marine, Aviation and Shipping Transport Officers
NWAMSA	North West Africa Maritime Safety Agency
OAU	Organisation of African Unity
OFO	Organised Framework for Occupations
OQF	Occupational Qualifications Framework
PACBP	Pan-African Capacity Building Programme
PAJA	Promotion of Administrative Justice Act
PFMA	Public Finance Management Act
PIVOTAL	Professional, Vocational, Technical and Academic Learning
PMO	Project Management Office
PPP	Public-Private Partnership
QC	Quality Councils

QCTO	Quality Council for Trades and Occupations
REAP	Rural Education Access Programme ()
RPL	Recognition of Prior Learning
SA	South Africa
SADC	South African Development Community
SAFREP	South Africa's voluntary ship reporting system
SAN	South Africa's Navy
SAMSA	South African Maritime Authority
SANCOR	South African Network for Coastal and Oceanic Research
SAQA	South African Qualification Authority
SARS	South African Revenue Services
SASCO	South African Standard Classification of Occupations
SASSETA	Safety and Security Sector Education and Training Authority
SDA	Skills Development Act
SDI	Skills Development Institutes
SDLA	Skills Development Levies Act
SDS	Skills Development Strategy
SET	Science, Engineering and Technology
SETA	Sector Education Training Authority

SMarT	Support For Maritime Training Scheme
SMME	Small, Micro and Medium Enterprises
SME	Small and Medium Enterprises
SICs	Standard Industry Codes
StatsSA	Statistics South Africa
SOLAS	Safety of Life at Sea
STCW	Standards of Training, Certification and Watchkeeping
TETA	Transport Education and Training Authority
THETA	Tourism, Hospitality, Sport Education Training Authority
THRIP	Technology and Human Resources for Industry Programme
TOR	Terms of Reference
UK	United Kingdom
VAT	Value Added Tax
WSPs	Workplace Skills Plans
WIN	Women in Insurance
USSAS	University Scholarships for South African Students
USAid	US Agency for International Development
UK MCA	United Kingdom Maritime and Coastguard Agency

Annexure B: List of SAMSA accredited maritime training providers and companies contacted during this study

List of 68 Maritime Companies contacted		
Company Name	**Telephone Number**	**Province**
1. Absorb Products CC	031 266 5606	KwaZulu Natal
2. ABX Turners Warehousing	031 332 1451	KwaZulu Natal
3. Advanced Cumstoms Solutions	011 975 1264	Gauteng
4. Airwaves	031 337 4514	KwaZulu Natal
5. API Holdings Ltd	031 309 5959	KwaZulu Natal
6. Aviocean Natal CC	031 465 5906	KwaZulu Natal
7. B W T Electronics Marine Automation & Repair	031 464 2354	KwaZulu Natal
8. Bay Stevedores	035 797 9141	KwaZulu Natal
9. BMT Marine & Offshore Surveyors	021 421 3172	Western Cape
10. Bureau Veritas Cape Town	011 666 0500	Gauteng
11. Cape Crating	021 386 6654	Western Cape
12. Cape Diving	021 448 4341	Western Cape
13. Cato	031 736 1393	KwaZulu Natal
14. Classic Cape Charters	021 418 0782	Western Cape
15. Cotenca Inspection	031 566 3231	KwaZulu Natal
16. Crane Hire	031 466 5411	KwaZulu Natal
17. Cross Country Containers	031 202 0110	KwaZulu Natal
18. D & M Freight	021 511 4441	Western Cape
19. Deneys Reitz	031 582 5600	KwaZulu Natal

20. Diamond Shipping	031 570 7800	KwaZulu Natal
21. Dormac Ship Repair Southern Africa	031 274 1500	KwaZulu Natal
22. Dorman Labour Services	031 205 3964	KwaZulu Natal
23. Drizit Environment	011 462 9481	Gauteng
24. Durban Marina	031 307 4992	KwaZulu Natal
25. Fumigation & marine Services	011 444 1033	Gauteng
26. General Insulation	031 205 5365	KwaZulu Natal
27. Greystone Cargo systems	031 274 2600	KwaZulu Natal
28. Hency Transportation	011 574 9000	Gauteng
29. Honda Marine	011 847 9400	Gauteng
30. Indian Ocean Terminals	031 301 4970	KwaZulu Natal
31. Intertek Caleb Brett	031 274 8000	KwaZulu Natal
32. Isle of Capri Pleasure Cruises	031 337 7751	KwaZulu Natal
33. Johnson Crane Hire	011 455 9222	Gauteng
34. JS Boating	083 677 8555	KwaZulu Natal
35. Lebefu Trading	011 705 3524	Gauteng
36. Main Port Africa	031 202 9621	KwaZulu Natal
37. Marthinuser LH	031 306 2284	KwaZulu Natal
38. Micor	031 263 1344	KwaZulu Natal
39. Mitsui OSK Lines	021-4028900	Western Cape
40. My African Sky	086 178 6637	Gauteng
41. NPA Light House Services	021 449 5171	Western Cape
42. Ocean Sailing Academy	021 425 7837	Western Cape

43. Oceana Group Limited	021 419 5911	Western Cape
44. Offshore Marine Services	021 425 3372	Western Cape
45. Omega Containers	031 466 8500	KwaZulu Natal
46. Panama and South African Registry Services SA	031 301 7041	KwaZulu Natal
47. Parasail Africa	083 677 8555	Gauteng
48. PDP	031 274 2000	KwaZulu Natal
49. Petrel Engineers	021 534 2451	Western Cape
50. Phoenix Shipping	031 568 1313	KwaZulu Natal
51. Pieter Volschenk Naval Architecture CC	031 205 3747	KwaZulu Natal
52. Poane Ship Chandlers	021 422 0555	Western Cape
53. Rainbow Marine and Industrial Services	031 206 1890	KwaZulu Natal
54. Rodman	031 304 7788	KwaZulu Natal
55. Rotan K Z N	031 569 6320	KwaZulu Natal
56. Russell Cleaver	082 441 1512	Western Cape
57. SACD Freight	021 418 1650	Western Cape
58. Sarie Marie Pleasure Cruises	031 765 5793	KwaZulu Natal
59. Saybolt	021 551 3021	Western Cape
60. Seek and Bark Storaway Detection	031 463 3152	KwaZulu Natal
61. Smit Amandla Marine	021 507 5777	Western Cape
62. SSI Engineers and Environmental Consultants	031 719 5536	KwaZulu Natal
63. Switches International	011 462 4253	Gauteng
64. Trade Ocean Shipping Services	021 417 3050	Western Cape
65. Unitainer	031 202 0110	KwaZulu Natal

66. Vasco da Gama Ship Chandlers	031-3687461	KwaZulu Natal
67. Versatille Container Handling	031 461 4403	KwaZulu Natal
68. Vouga Marine Services	021 591 4696	Western Cape
69. Irvin & Johnson (I&J)		
70. Sea Harvest		
71. Viking Fishing		
72. South African Oil and Gas Alliance (SAOGA)		

List of 30 Maritime Training And Education Providers/Institutions

NAME	TEL	Province
1. Cabinda Gulf Oil Company (CABGOC)(Chevron)		
2. Cape Peninsula University of Technology		
3. Cape Technikon Survival Centre	021 440 5715	Western Cape
4. Concord Maritime Training	021 4196534	Western Cape
5. De Beers Marine (South Africa	021 658 3208	Western Cape
6. Durban University of Technology		
7. Emergency Medical Training	021 701 6901	Western Cape
8. Engineering Training Centre – Kimberley		
9. Ingelosi Healthcare Management Training	031 7058092	KwaZulu Natal
10. Irvin & Johnson (Trawling Division)	021 402 9700	Western Cape
11. Marine & Technical Training Solutions		
12. Marine Crewing Services/Sanko/RK Offshore Management	021 421 3511	Western Cape
13. Northlink College, Table Bay Campus	021 591 9207	Western Cape
14. Port Academy of South Africa	031 361 6344	KwaZulu Natal

15. Professional Yachtmaster Training	031 307 4996	KwaZulu Natal
16. Project Maritime Training Saldanha		
17. Project Maritime Training Vredenburg		
18. Safmarine (Pty) Ltd Ship Management Division	021 408 6911	Western Cape
19. SAFMA	021 703 8911	Western Cape
20. SAMTRA	021 703 8911	Western Cape
21. Sea Harvest Corporation	022 701 4000	Western Cape
22. Smit Amandla Marine	021 507 5777	Western Cape
23. Sonasurf (Angola) Lda. c/o Seatrain	021 788 5429	Western Cape
24. Sonatide Marine Limited		
25. South African Safety Academy	031 708 5480	KwaZulu Natal
26. St John Ambulance Foundation	041 364 2701	Easter Cape
27. Table Bay FET		
28. Teekay Shipping (Glasgow) Ltd	021 440 5752	Western Cape
29. Unicorn Training School		
30. West Coast Medical	022 713 1453	Western Cape

Annexure C:

Maritime stakeholder survey interviews completed and secured

Interviews scheduled and conducted - SAMSA Maritime Skills Study			
Province	**Stakeholder Group**	**Stakeholder**	**Interviewee**
Eastern Cape	A Government DOT Regional	1. EC Department of Transport	Noxolo Fipaza Assistant Manager Maritime Safety Management
Kwa Zulu Natal	A Government Local Gov.	2. Ethekwini Municipality	Noma Sokhela Economic Development Manager
Gauteng	A Government DOT Agency	3. Transnet National Ports Authority	Sue Lund General Manager: Policy and Research
Gauteng	A Government DOT Agency	4. SAMSA	Reg Nkosi Executive Head : Centre for Strategy
Gauteng	A Government DOT Agency	5. SAMSA	Khakhathi Munyai Business Analyst
Gauteng	A Government DOT Agency	6. SAMSA	Sipho Mbatha Risk Compliance Manager
Western Cape	A Government DHET: SETA	7. Transport Education and Training Authority	Victor Muhlberg Chief Operating Officer Maritime Chamber
Western Cape	A Government DHET: SETA	8. Transport Education and Training Authority	Malcolm Alexander ETD Practitioner
Eastern Cape	B Industry	9. Algoa Bay Yacht Club	Anne Marie Vanvliet ABYC Sailing School
Western Cape	B Industry	10. Cape Town Boatbuilding and Technology Initiative	Veda Raubenheimer General Manager Vanessa Davidson Skills Development Facilitator

Eastern Cape	B Industry	11. DCD-Dorbyl	Andries Joubert General Manager
Eastern Cape	B Industry	12. Eastern Cape Development Corporation	Pierre Leppan Investment Promotion Head
Kwa Zulu Natal	B Industry	13. Elgin Brown and Hamer	Rob Deane Managing Director
Eastern Cape	B Industry	14. EL Shipyard	Callum Alexander General Manager
Kwa Zulu Natal	B Industry	15. Gearbulk	Richard Eacott
Western Cape	B Industry	16. Hesper Engineering	Jurgen Moller General Manager
Kwa Zulu Natal	B Industry	17. LH Marthinusen	Vernon Jones Marine Manager
Western Cape	B Industry	18. Marine Technology (Pty) Ltd	Dr. Brian Gowans Managing Director
Kwa Zulu Natal	Industry	19. Mitchell Cotts Maritime	Nigel Sargent General Manager
Eastern Cape	B Industry	20. Mossel Bay Fishing	Johnny Josias
Kwa Zulu Natal	B Industry	21. Phosfreight Marine	N. O'connor
Western Cape	B Industry	22. Sea Harvest	Greg Marshau
Western Cape	B Industry	23. Smit Amandla	Kevin Tate Vessel Manager Mandy Erasmus Training and Development Officer Jon Kloppers Crewing Manager
Eastern Cape	B Industry	24. Viking Fishing	Craig Bacon
Western Cape	C	25. Cape Town University of Technology - Faculty of Engineering	Prof Capt Dr Ed Snyder

	Education Institution		Head Maritime Studies
Kwa Zulu Natal	C Education Institution	26. Durban University of Technology	Edward Pines Chief Marine Engineer
Western Cape	C Education Institution	27. Simons Town School	Ms J Human Acting Principal
Western Cape	C Education Institution	28. South African Maritime Training Academy	Andy Maclennan General Manager
Western Cape	C Education Institution	29. University of Cape Town	Prof. John Hare
Kwa Zulu Natal	D Society/Professional Body	30. South African Society of Master Mariners	Capt Graham Mannall
Kwa Zulu Natal	D Society/Professional Body	31. Maritime Law Association of South Africa	Anisa Govender Secretary of the South African Branch Women`s International Shipping and Trading Association Executive Committee of the Durban Chapter Maritime Law Association of South Africa
Western Cape	D Society/Professional Body	32. Oil and Gas SPV Western Cape	Adrian Strydom SAOGA Project Manager Warwick Blyth CEO / Executive Director

Annexure D:

Letter from SAMSA mandating the research study

03 August, 2010

TO WHOM IT MAY CONCERN

Dear Sir/Madam

Re: Request for Participation: Maritime Skills Development Survey

As part of our efforts to develop the maritime sector, the **South African Maritime Safety Authority (SAMSA)** has commissioned **Deloitte** to conduct a skills development survey among South African government officials, academics, and key industry players.

The survey aims to shed light on the status of maritime skills in the country and thus inform possible immediate and future interventions. It will help to, among other objectives (1) indicate the current number and type of maritime skills available in the country; (2) indicate maritime skills that are not offered in South Africa, yet crucial for advancing the nation's maritime interests; (3) identify and examine current existing and emerging trends in the supply and demand of all such skills and prioritise those that South Africa needs or may need; (4) analyse the funding of skills across the country; and (5) detail out the partnerships that may have to be put in place to advance the development of skills.

Please note that our research intends to primarily draw on our interviewees' experience and knowledge, and therefore your insights on the maritime skills development challenges and possible remedial measures will be crucial to our analysis. Full confidentiality of individual responses will be maintained, and the findings will only be reported in summary form. All data and information gathered through this survey will become the property of SAMSA and Deloitte and will only be used for research purposes.

It is in this regard that we request you to spare some time in the coming weeks to either electronically respond to the enclosed questionnaire or engage in an interview with Deloitte researchers, to discuss issues of maritime skills.

Thank you for your assistance and we look forward to benefiting from your participation in the survey.

Yours sincerely,

Commander Tsietsi Mokhele
CEO: South African Maritime Safety Authority

Annexure E:

Examples of global solutions to the maritime skills shortage

Overview of global maritime education and training: examples of the UK, Australia, China, Singapore, Greece and India

Chapter 5, Section 5.3 provides a summary of the various solutions that maritime countries around the world have developed to address the global skills shortage in the maritime sector.

Examples are elaborated on below:

Government training subsidies:

- Germany:

  To preserve and develop maritime skills, the Federal Government of Germany established a Maritime Alliance between the Association of German Ship owners, the trade unions and the federal coastal states (European Union 2007b). The ASA (2008, p. 116-117) records that there is a subsidy, under the Maritime Alliance, for wage-related ancillary costs of seamen from the Federal Republic of Germany, as well as from the rest of the EU, employed on board German merchant ships.

  Additionally, there is a financial contribution for seafarer training which incorporates a financial commitment on the part of the German Ship-owners Association. In order to promote seafarer training, from 2002, the financial contribution of the German Federation was increased to EUR 30,000 per trainee. Heitmann (2005, p. 16) reports that the wage costs reduction measures along with tonnage tax requirements were estimated to have created 1850 jobs in 2004.

- Ireland:

  The Irish approach provides financial support for both the trainee, while ashore and at sea, and the maritime training institution. It should be noted that not all European governments are prepared to contribute to the on-board component of training, but those which do include Germany, Greece, Ireland, Portugal, and UK (Krishnan 2008).

  The Irish Government has adopted a different approach to the maritime skills shortage issue by focusing on and encouraging seafarer training. In 1999 it established the Irish Maritime Development Office (IMDO) as a statutory government agency with responsibility for the development of the maritime sector. Amongst its responsibilities, the IMDO oversees and coordinates seafarer development including maritime education and training.

  The government is aware that the difficulty is not one of encouraging shipping companies to undertake training, but of attracting young people to the sector. For this reason the government decided there should be no commitments or financial penalties linking seafarer training to the Irish tonnage tax regime, rather the government decided to invest directly in:

  - A EUR 58m state of the art National Maritime College
  - New and more appropriate educational courses
  - Grants for trainee officers
  - Increased tax allowances for seafarers (IMDO 2008a)

In Ireland, once a cadet is accepted into nautical college, training to their 1st Certificate of Competency occurs with financial support from the government's Irish Seafarer Education Assistance Scheme (ISEAS). This training grant covers all costs for mandatory training courses and, in addition, a seagoing training allowance of EUR 350.00 is made available for each cadet on a monthly basis. The overall maximum figures in support of seagoing training toward the attainment of the 1st Certificate of Competency are:

- Deck Cadet: EUR 5250 / cadet (15 months)
- Engineering Cadet: EUR 3150 / cadet (9 months)
- Rating Trainee: EUR 3150 / cadet (9 months)

The ISEAS provides funding to 90 cadets per year and to 25 officers per year studying for higher certificates of competency (Krishnan 2008). In effect, a ship operator offering training berths to Irish cadets can benefit from high quality, well-trained officers who have gained their experience and qualifications on board that company's vessels, and are familiar with the operations, policies and ethos of the company, at no cost (IMDO 2008b).

- Hong Kong:

In Hong Kong it is recognised that some seafaring experience is a valuable precursor to working in the shore-based maritime industry. In order to enhance the supply of local qualified personnel with sea-going experience to work in the maritime industry, the Hong Kong Government, with the full support of the Hong Kong Maritime Industry Council, set up the Sea-going Training Incentive Scheme in 2004.

This training scheme provides financial incentive for people to take up sea-going training as cadets, which paves the way for them to become shore-based professionals in the maritime industry. The scheme is administered by the Marine Department, and a cadet may receive as an incentive HK$ 4,000 per month during the training period.

The incentive is paid to the successful applicants by the Marine Department upon completion of each employment contract up to the maximum training period of 24 months for a deck cadet and 6 months for an engineer cadet.

To be eligible an applicant should:

- be a Hong Kong permanent resident
- be a graduate from a maritime training institute recognised by the department
- provide proof of employment as a cadet
- register as a seafarer with the department
- not have been granted other kinds of similar financial assistance

At the end of the training period, the cadets will qualify to sit for the Class 3 Deck/Engineer Officer Examination (Hong Kong Maritime Industry Council 2007).

The scheme had an initial allocation of HK$ 9 million and 32 applications were approved in the first year (2005); training completions were reported as 6 in 2005, 13 in 2006, whilst in 2007 it was reported that, thus far, 72 deck cadets and engine cadets had joined the Sea-going Training Incentive Scheme (Marine Department 2005, 2006, 2007).

In a briefing paper to the Legislative Council Panel on Economic Services (2007) it was reported that 62 cadets had joined the scheme since its launch in 2004, and 18 of them had passed their first professional examination. Whilst the numbers involved are relatively small, the Hong Kong approach is a good example of government and industry ensuring that there is a flow through of appropriate skills to the shore based maritime industry.

Overview of Global Maritime Education & Training

The research team selected various countries as examples of global maritime education and training interventions. These include the United Kingdom, Australia, China, Singapore, Greece, and India. The following section provides an overview of the maritime education and training trends for each of the countries.

UNITED KINGDOM (UK)

The United Kingdom is seen as one of the major world centres for shipping and a leader in maritime training & education. The UK relies heavily on its ports for 95% of its imports and exports and because of the vitality to the economy as a major employer

Maritime Education & Training Trends

Trends	Description
Active research	Various institutions conduct research for the maritime industry, such as the Department of Transport, the International Shipping Federation, Baltic and International Maritime Council and the British Chamber of Commerce.
Skills data is recorded and kept centrally	Data is kept at the UK Maritime and Coastguard Agency (MCA)

Support measures is linked to research	Measures to support the maritime skills base has been inextricably linked to research with relation to the state of labour in the maritime skills market.
Career Awareness Programmes	Multiple governmental actions and industrial led initiatives aimed at buoying up the numbers working in the industry. A strategy to create an increase in awareness of careers at sea and widening access to training opportunities was also implemented. Other programmes include a school career awareness programme and "Sea Vision, a UK Chamber of Commerce initiative.
Government support	Conducted an enquiry into what actions were required by government to support the UK's shipping industry, this included encouraging of shipping registration, establish what contribution shipping can make in achieving the aims of government transport policy, determining the levels of manpower and skills shortages, establish the importance of shore-based shipping services and determine how employment can be promoted. etc.
Private sector support	UK based ship owners developed a co-ordinated set of initiatives aimed at marketing careers in the maritime sector and increasing the number of merchant ship officers.
Maritime training trust	Government supported an initiative by industry, where companies donate to a pool to support training of cadets.

Maritime Education & Training Constraints

Constraints	**Description**
Inaccuracy of data	Although much has been done with regards to research of the skills in the UK maritime industry, the quality of data with regards to the numbers of seafarers is poor and

	inaccurate.
Skills shortage of suitably qualified seafarers	Because of the development in technology with regards to the seafaring profession, seafarers now have to be highly qualified to run these advanced ships.
Gap in demand and supply	It is estimated that the UK demand for cadets is currently double its supply.
Limited marketing of the maritime industry as a career option amongst the youth	The marketing of maritime as a career amongst eligible youth is an immediate requirement.

AUSTRALIA

Australia's economy is rich in natural resources which include: coal, iron ore, copper, gold, natural gas, uranium and renewable energy sources. Australia, China and Japan are engaged in free trade agreement negotiations. Australia's economy relies greatly on international trade, especially China. The country has a highly developed and efficient maritime sector.

Australia is globally renowned as a leader in vocational training and skills development. Their national qualifications frameworks are extensive and make provision for all sectoral occupational and cognitive levels. South Africa's own National Qualifications Framework (NQF) is largely based on the country's framework. Many of South Africa's maritime qualifications currently registered on the NQF have been benchmarked against Australian qualifications.

Australia has been successful in identifying skills gaps and developing focussed initiatives to address training in the maritime industry by partnering with various academic, governmental and private institutions

Maritime Education & Training Trends

Trends	Description
Research and studies	Numerous studies have been conducted with regards to maritime skills over the past decade

Detailed information with regards to skills shortages	In Australia the authorities have done a detailed analysis on skills shortages and their causes. There is also information around skills transferable to maritime onshore based sectors.
New policies	Suggestion that Australian Government develop policies to encourage growth of the shipping industry
Fee waivers/support	Suggestion to provide this to scholars wanting to enter the maritime education and training environment.
Increased funding	Suggestion to increase funding to national institute and to support vocational training provision.
Support of academic institutions	The subsistence of the Australian Maritime College and the maritime policy unit within the college supports maritime initiatives and training in the country.

Maritime Education & Training Constraints

Constraints	**Description**
Inflexible career pathing	There is a general lack of career pathing and no flexibility in career pathing progression.
Less Australian flag vessels	Causes less training berths available for trainee cadets.
Lack of awareness	A poor industry image and lack of awareness of the industry is contributing to the skills shortage.
Skills shortages	Because of continued industry growth, specifically in container trade, export of bulk commodities, offshore oil and gas exploration, construction, production, transportation.
Suitability of qualifications	Because of the changing trends as set out above and the ongoing global competitiveness in the industry, there is a lack of suitably qualified seafarers.

CHINA

As part of its global expansion policy China plans to invest R340bn in foreign countries in 2010 with specific focus on Africa. In March 2010, 26 SA and Chinese companies signed contracts to the value of R2.3bn. SA will mostly be exporting agricultural products, minerals and metals to China, with China selling mostly value added manufactured products to SA. At the recent China-SA Economic and Trade Forum China committed to implement measures to ensure that they import and invest in more value added manufactured goods from SA to improve bilateral trade.

One of the success factors of China as an international shipping centre is the sustainable growth in international trade and shipping activities. The maritime industry has always been a key factor in the economic development of China**.**

Maritime Education & Training Trends

Trends	Description
Formal training policy	The government has formulated policy to encourage training of officers who become employed by shipping vessels and onshore shipping companies.
Dedicated tertiary institutions	At least one tertiary institution has a dedicated maritime department, focussing on training for the maritime industry.
Career pathing	Students have the opportunity to train from undergraduate sub-degree level to PhD level maritime programmes.
Ensuring international standards	Training subscribes to international standards and the approach is one of a “global outlook”.

Maritime Education & Training Constraints

Constraints	Description
Flexibility of maritime degree courses	The curriculum should be designed in such a manner that students have the flexibility to work on vessels or on-shore at shipping companies.

SINGAPORE

Singapore has proved to be extremely stable, both politically and economically, and has been repeatedly rated by Transparency International as the least corrupt country in Asia and amongst the top ten in the world. The World Bank's "Doing Business 2010 Report," ranked Singapore's economy as no.1 for having the most open and liberal economy for international trade. The Singapore economy grew by 15.5% on a year on-year basis in Q110 led by robust growth in the manufacturing sector. The country's total trade is expected to grow between 9% and 11% this year after contracting 19% to $747bn in 2009.

Singapore's maritime sector is lead by the Maritime & Port Authority of Singapore (MPA) and the Singapore Polytechnic managing training in the maritime industry. The MPA is also the driving force behind Singapore's maritime development initiatives.

Maritime Education & Training Trends

Trends	Description
A large variety of maritime education & training qualifications and courses are offered presented by public and private sector training providers as well as private companies	Singapore has various institutions conducting training from short courses to diplomas, focussing on the maritime industry and the onshore shipping industry.
Quality of training	Singapore prides itself on the quality of the training their seafarers receive, they believe in continuous training and have very modern facilities. Their seafarers can work on board various types of ships and have proficiency in English.
Simulation Centre	The MPA has a simulation centre to further enhance studies and this centre carries an array of simulators to assist with training in the maritime arena.
Awareness programme	Various stakeholders to the maritime industry, such as the MPA, the Singapore Maritime Foundation and the Singapore Shipping Association have joined forces to create awareness around maritime as a career.
Funding	The above organisations also provide funds for scholarships and internships. The MPA manages the Maritime Cluster Fund, which aims to develop human resources and business development in the maritime

	sector
Centre of excellence	Singapore envisages growing itself as an international maritime centre of excellence by growing its knowledge pool above and beyond its current core maritime business.

Maritime Education & Training Constraints

Constraints	**Description**
Training falls under the auspices of two statutory boards	Training is provided by the MPA, under the Ministry of Communication and Information technology and under the Singapore Polytechnic, under the Department of Marine Technology and Transport (under the Ministry of Education)
Wages	Because of the low wage differential between sea and shore based jobs and the availably of onshore jobs, many qualified seafarers prefer working onshore.

GREECE

Greece is one of the oldest seafaring countries in the world and the maritime industry has always been an integral part of the economy as a whole. Greece has a very structure approach to training in the maritime sector

Maritime Education & Training Trends

Trends	Description
Training institutions	There are various marine academies in Greece for both deck officers and engineers. All these academies are under the supervision of the Ministry of Mercantile Marine.
Funding	Funding for training is provided by the Greek government, mandatory contributions from owners of vessels registered in Greece and from the European Union.
Tuition Fees	No fees are charged for training, accommodation or subsistence as all maritime training is sponsored as set out above.
Post Training	There are two government funded centres for post training, which run professional short courses and professional development programmes for seafaring officers. There are also some private institutions that run courses.

Annexure F:

A BPO&O SSF Case Study

This section offers the BPO&O SSF case study as an example of an extra – ordinary, multi leveled public private partnership which transformed a priority SA economic sector to meet skills demand and be a competitive force in the global market[99].

At the end of 2005, the government identified Business Process Outsourcing and Off-shoring as a priority sector for the attraction of investment and creation of jobs. Because of its potential for accelerating and sharing growth, the BPO&O sector was identified as one of three priority sectors by government in 2005. It was determined that business and government should work cooperatively to develop and execute a strategy that would make South Africa preferred location for off-shored business processes.

The strategy agreed by the dti and leading firms in the private sector provides an example of the way in which sector strategies may be crafted in the future.

The Business Trust responded positively to the call for a partnership and allocated funding of R100-million to facilitate the process of interaction between the public and private sectors.

A plan was developed to:

- Improve infrastructure,
- Deepen the talent pool,
- Create incentives,
- Market South Africa's inherent strengths to the international community, and
- Strengthen the industry association and assure quality.

[99] Courtesy and acknowledgement to BPESA, the SA BUSINESS TRUST and the "dti" as well as the BPO_Stakeholder_Report_2009_Final

Research commissioned for the BPO Sector Support Programme concluded that the biggest problem is the skills shortage which will take time to address.

By the end of 2006, Cabinet had approved a substantial Government Assistance and Support (GAS) Programme that would provide over R1-billion to stimulate this sector. During 2007 and 2008, the work streams identified for the implementation of the plan were beginning to show results and investors started to respond to the Government Assistance and Support Programme, statistics show that 20 new investments have been attracted through the government incentive scheme, including those from some of the world's largest BPO operators. Investments worth R1.5-billion have been contracted. This will create 21 752 direct jobs and 65 256 indirect jobs against the target of 25 000 direct and 75 000 indirect by 2010. Since 2004, more than 35 000 unemployed people have been trained for this sector. Quality standards have been developed that are set to be adopted globally. Productive working relationships have been built between the Department of Trade and Industry and the industry association, Business Process enabling South Africa (BPeSA).

A focused effort to deepen and develop a high quality and competitive talent pool would be required to attract investors to SA, reducing unemployment, limiting attrition and avoiding labour cost escalation. The plan required a rapid increase in skills of potential operators or agents, supervisors and managers. It was planned to achieve this through focused education and skill development. This required the development of a comprehensive strategy that included the use of imported skills (in fields in which there was short supply in South Africa) and the transfer of skills over time. It aimed to improve perceptions, knowledge and career opportunities in the BPO industry, and enhance the quality of applicants while improving the efficiency with which people are attracted and retained.

The effective mobilisation of key stakeholders would require a strengthened industry body. This was aimed at aligning key stakeholders around a common South African vision and building a credible industry body.

The public and private sectors would have to work together to implement the sector development strategy. The sector support facility was organised by the Business Trust under the auspices of a partnership committee as described below and an investigation was launched into the establishment of a special purpose vehicle.

The BPO Sector Support Programme was established to enable the public and private sectors to work together to implement the BPO sector development strategy. The Support Programme is governed by a co-operation agreement between the Business Trust and the dti. A partnership committee was established in terms of that agreement to oversee the programme. The partnership committee is chaired by the Minister of Trade and Industry and includes two board members from the Business Trust and two from the industry association, BPeSA. The Director-General of the dti and chief executives of BPeSA and the Business Trust also serve on the committee. The programme is implemented through a sector support facility. Its functions were planned to be taken over by a special purpose vehicle which the dti and BPeSA agreed to establish with the support of the Business Trust. The sector support facility supports public and private agencies to implement the BPO sector development strategy.

The support facility works on the understanding that the development of a vibrant BPO sector would require:

- from government, sound policy, stable institutions and competitive incentives and infrastructure;
- from firms in the industry, the capacity to invest, train and compete globally in a manner that is profitable; and
- from the industry at large, a capacity to promote South Africa and the industry through actions like lobbying, quality assurance and the provision of ongoing market intelligence and support.

The availability of globally competitive talent at all levels of employment is a critical success factor for competing in the international BPO&O industry.

In order to achieve the creation of a pool of internationally competitive people at all levels of employment, a skills development strategy was developed for the BPO&O sector.14 The strategy aimed to provide a comprehensive integrated solution that is aligned with the National Skills Development Strategy, the Skills Development Act, Employment Equity Act, BEE Charter requirements and other relevant legislation.

A skills development strategy was developed that is aligned with South Africa's skills development policies. The Skills Development Act (1998) and the Skills Development Levies Act (1999) were developed to promote employment, alleviate poverty, enhance global competitiveness and accelerate economic growth in South Africa by addressing the skills shortage through the National Skills Development Strategy (NSDS) I: 2000-2005 and NSDS II: 2005-2010. NSDS II was launched by the Minister of Labour, effective on 1 April 2005.

The BPO skills development strategy aimed to increase the talent pool, accelerate the development of managers and supervisors, and encourage ongoing skills development at all levels of employment.

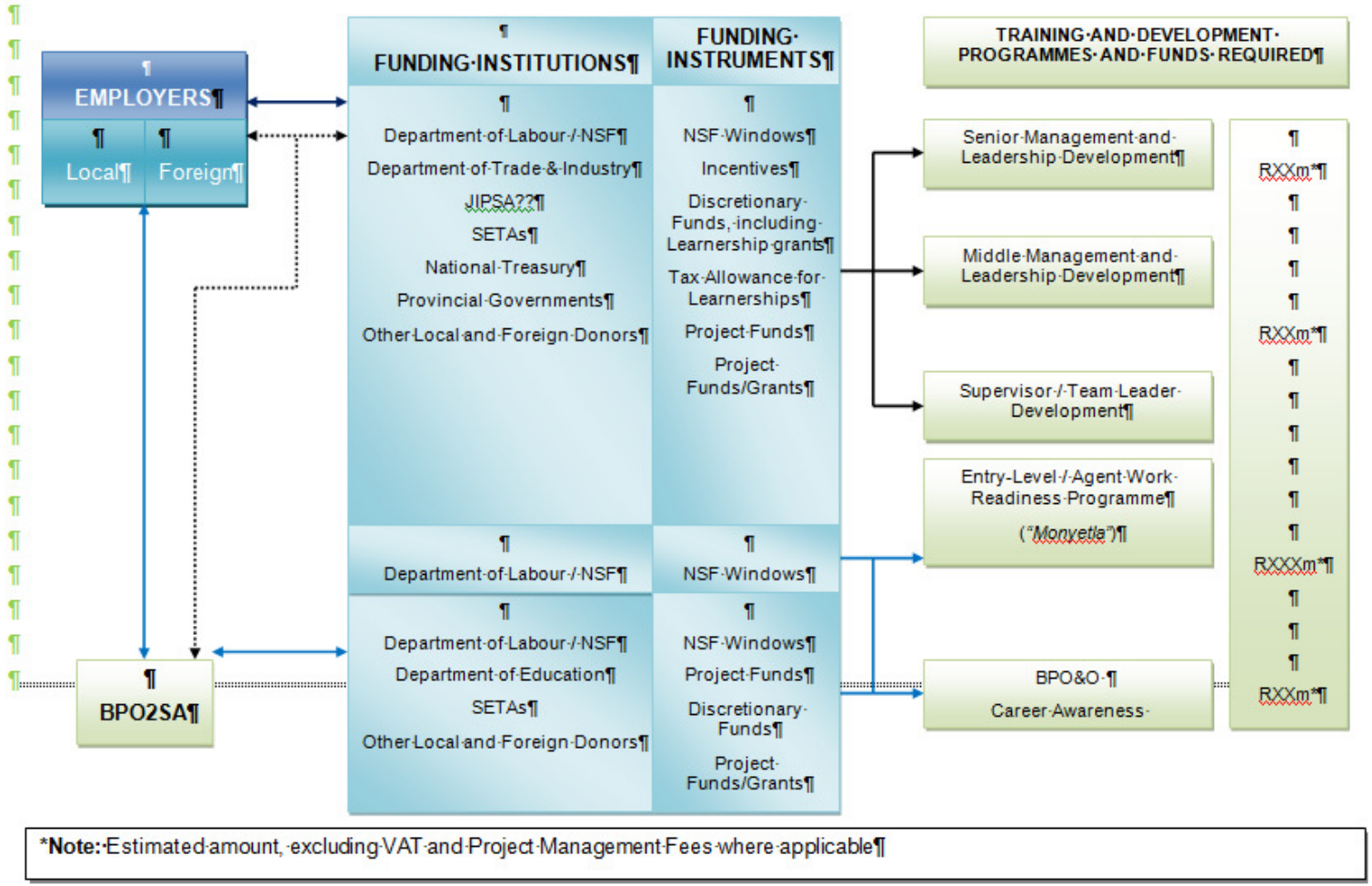
- The increase in the pool of employable entry-level people was planned to be achieved through a targeted, customised skills training programme aimed at 30 000 young unemployed people from disadvantaged backgrounds for the period 2006 to 2010 to meet the anticipated growing demand for staff from local and foreign companies. The Monyetla Work Readiness Programme was developed to play a crucial role in ensuring that the South African BPO&O sector can meet the expected growth in local and foreign demand. The existing resource pool of 80 000 entry-level staff was to be supplemented by 30 000 new entrants trained on the Monyetla Programme.
- The acceleration of the development of home-grown supervisors and managers would lessen the country's dependence on foreign managers by reimbursing company-specific c training for new jobs through the training support grant and funding from SETA discretionary funds for 5 000 supervisors and managers. The training and development of supervisors and managers is also vitally important in order to prevent any bottlenecks occurring in the workplace.
- The ongoing building of a globally competitive talent pool with the required skills at all levels of employment would provide the necessary service levels and build South Africa's value proposition through the effective operation of the national skills development system.

Based on analysis undertaken, a substantial Government Assistance and Support Programme was developed and governed by a solid multi tiered public private partnership. Ultimately an investment programme of some R2.8-billion over five years was developed with an expectation that it would create a potential 100 000 jobs. That included just over R1-billion for investment support and R532-million for training support as part of a comprehensive Government Assistance and Support Programme for BPO (GAS for BPO). Some R1.3-billion was also contemplated for telecommunications infrastructure in designated areas.

A national body was established in June 2004 by the regional associations, which hoped to represent their interests nationally by forming the South African Contact Centre Community (SACCCOM). The initiators were the regional body in Gauteng called 'ContactinGauteng' which had a membership of 100 companies and 'CallingtheCape' with some 140 corporate members. Subsequently, 'KZNonSource' (launched in January 2006 with five members) and Coega were invited to participate in the national body which led ultimately to the establishment of BPESA.

The figure on the next page provides an example of a funding model successfully applied to enable a Sector's skills development strategy and skills development programme;

Figure: BPO&O Sector Talent Development Funding Model 2006-2010[100]



[100] *Courtesy: Deloitte BPO&O Project Talent Development Workstream, the dti, & the SA Business Trust 2005*

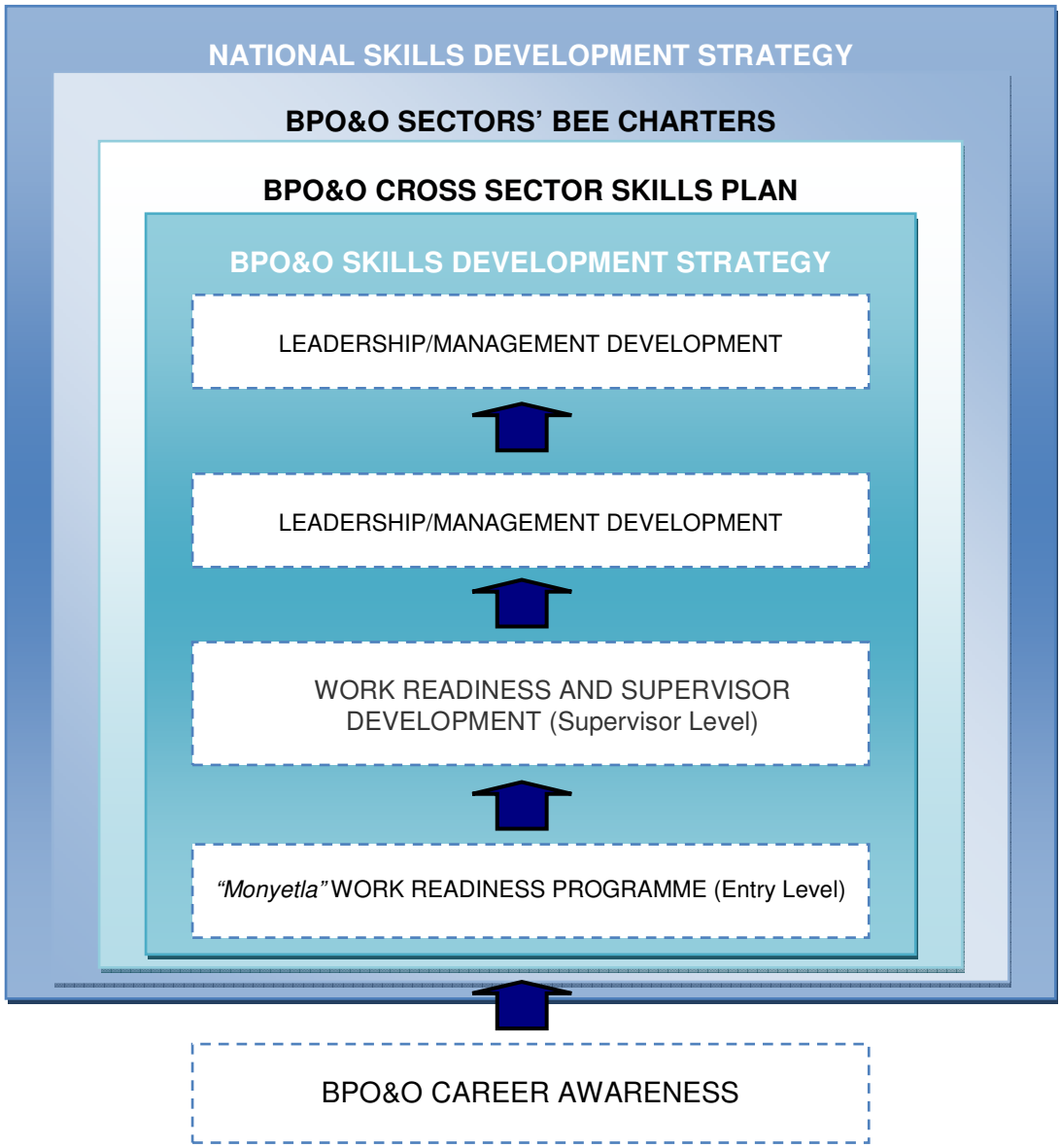
Conclusion

The strategy agreed by the dti and leading firms in the private sector provides an example of the way in which sector strategies may be crafted in the future. It resulted in:

- the approval of substantial government assistance and support for the sector,
- triggered in excess of R1-billion investment and
- brought some of the world's leading outsource companies to South Africa.
- Over 21 000 direct jobs have been created thus far and these have the potential to change the destiny of the young people who become call centre agents or back-office operators in BPO firms.

Over and above the co-operation between firms in the BPO industry and the dti, the support of the Business Trust and its corporate partners, who are generally not participants in the BPO sector, demonstrates a commitment by business and government to work together in the national interest.

Figure 19: BPO&O Sector Skills Development Strategy



The figure above graphically illustrates the BPO&O Sector Skills Development Strategy developed by the Deloitte BPO&O SSF Talent Development Workstream on behalf of the dti and the SA Business Trust during the project referred to in the aforementioned case study.

Annexure G: List of Maritime Specific and Maritime Related education and training offered by SA providers and institutions

This Annexure provides a comprehensive list of Maritime sector specific and maritime related clusters (as defined by SAMSA) qualifications/skills available at South African Education and Training Institutions:

- The matrix show qualifications registered with the South African Qualifications Authority (SAQA) against the National Qualifications Framework (NQF) and where the information was available a training provider and quality assurance body is also shown;
- Education and training offered in the sector ranges from NQF Level 1 “General Education and Training Certificate: Transport” which offers an entry level qualification into the transport/maritime industry right to the “new” NQF Level 10 which refers to post graduate studies at a number of universities;
- Higher education and training providers are accredited by the Council for Higher Education and Training (CHE);
- A large portion of maritime skills such as engineering, oil & gas, mining, ship repair artisan, finance, legal & economic skills are not falling within the scope of the Transport SETA and therefore this study should form the basis for further research to be conducted to provide a comprehensive list of all maritime relevant skills across all economic sectors defined within the skills development scope of MERSETA, MQA, AgriSETA, THETA, FASSET, SASSETA, FASSET and quite possibly other SETAs – the list includes training providers accredited by TETA and SAMSA;
- The list is by no means exhaustive and will form a good base document for developing a Maritime Sector Education & Training Provider Matrix.

Training provider	Region	Description/sample of Maritime specific and maritime related education & training	Accreditation
Cape Peninsula University of Technology (CPUT)	Western Cape	CPUT offers the following maritime studies: 1. Marine Navigation • Deck Officer (S1/S2) • Chief Mate/Master (S3/S4) 2. Marine Engineering Dept of Mechanical & Industrial Engineering • Engineer of Watch • Second Engineer Officer • Chief Engineer Officer 3. Marine Engineering Dept of Maritime Studies • Engineer Officer of a Watch • Second Engineer Officer • Chief Engineer Officer 4. Offshore Survival • Various SAMSA and other accredited courses Sample of relevant Qualifications registered with SAQA: • National Diploma: Maritime Studies • National Diploma: Fisheries Resource Management • National Diploma: Oceanography • Bachelor of Technology: Oceanography	CHE SAMSA
Durban University of Technology	KwaZulu Natal	• Chief Mate Certificate of Competency • NON DIPLOMA: MARINE ENGINEERING - Marine Engineering is offered as a Non-Diploma programme but the programme is under development to offer (in 2011) a Higher Certificate on completion of S2 and an Advanced Certificate on completion of S4 Sample of relevant Qualifications registered with SAQA: • National Diploma: Maritime Studies • National Higher Diploma: Maritime Studies	CHE
University of Cape Town	Western Cape	• Marine & environmental Law • Marine Research	
University of Stellenbosch	Western Cape	• Bachelor of Philosophy: Maritime: Transportation and Logistics • Bachelor of Military Science: Technology and Defence Management • Post-graduate degrees in Maritime Studies - BPhil -MPhil - PhD	CHE
University of KwaZulu-Natal	KwaZulu Natal	• Postgraduate Diploma: Maritime Law • Postgraduate Diploma: Maritime Transport • Postgraduate Diploma: Maritime Studies • Master of Laws: Marine and Ship Surveying • Master of Laws: Maritime Studies • Bachelor of Science Honours: Marine Ecology • Master of Business Administration: Maritime Transport Economics and Management	CHE
University of Zululand	KwaZulu Natal	• Diploma: Logistics Management • Diploma: Transport Management	CHE
University of South Africa	Countrywide	• National Diploma: Transport Economics	CHE

Training provider	Region	Description/sample of Maritime specific and maritime related education & training	Accreditation
University of Johannesburg	Gauteng	• Postgraduate Diploma: Transport Management • Bachelor of Technology: Transportation Management • Postgraduate Diploma: Transport Management • Master of Commerce: Logistics Management • Master of Commerce: Logistics Management • Bachelor of Science Honours: Aquatic Health • Bachelor of Commerce Honours: Transport Economics • Master of Philosophy: Transport Economics • Master of Commerce: Transport Economics • Master of Philosophy: Logistics Management •	CHE
Damelin	Countrywide	• Further Education and Training Certificate: Cabin Crew NQF L 4	THETA
University of Venda	North West Province	• Certificate: Geographical Information System	CHE
Tshwane University of Technology (TUT)	Gauteng	• National Diploma: Meteorology • National Higher Diploma: Meteorology	CHE
Nelson Mandela Metropolitan University	Eastern Cape	• Postgraduate Diploma: Maritime Studies	CHE
The South African Coast Guard Training Institute	Western Cape	• Specialises in Maritime Safety Training according to the International Maritime Organisation's training standards in all areas of seamanship (STCW - 95) Convention for the Standards of Training for Certified Watchkeepers	SAMSA
The Academy of Maritime Medicine	Western Cape	• Specialises in Maritime Safety Training according to the International Maritime Organisation's training standards in all areas of seamanship (STCW - 95) Convention for the Standards of Training for Certified Watchkeepers	SAMSA TETA
Simon's Town High School and Lawhill Academy	Western Cape	• Maritime Studies - Maritime Economics and Nautical Science	DHET
Sethengile High School	KwaZulu Natal	• Maritime Studies - Maritime Economics and Nautical Science	DHET
SAMTRA	Western Cape	• SAMTRA (SA Maritime Training Academy) a SAFMARINE initiative- is Africa's first maritime simulation training academy. It is located in Simons Town. SAMTRA trains seafarers from the merchant marine, the military, the fishing industry and harbour craft fraternity, providing them with the opportunity to acquire advanced skills with technical training in a highly-realistic simulation environment. • SAMTRA also manages the Cadet Training Programs for various companies as an	SAMSA TETA

Training provider	Region	Description/sample of Maritime specific and maritime related education & training	Accreditation
		extension to its core business, which handles the entire process of a cadets training program, from recruitment to qualification as officer of the watch. • Specialises in Maritime Safety Training according to the International Maritime Organisation's training standards in all areas of seamanship (STCW - 95) Convention for the Standards of Training for Certified Watchkeepers	
Unicorn Shipping	Western Cape	• Specialises in Maritime Safety Training according to the International Maritime Organisation's training standards in all areas of seamanship (STCW - 95) Convention for the Standards of Training for Certified Watchkeepers	SAMSA TETA
SA Navy **SAS Saldanha Naval College**	Western Cape	• Further Education Training Certificate: Harbour Watchkeeping NQF L4 • Further Education and Training Certificate: Marine Engineering Watchkeeping NQF L4 • Further Education and Training Certificate: Military Operations NQF L4 • Further Education and Training Certificate: Military Operations NQF L4 • National Certificate: Navigation • National Certificate: Warship Command and Control • National Certificate: Submarine Operations • National Certificate: Vessel Safety Practices • National Certificate: Warship Operations • National Certificate: Vessel Safety Practices • National Certificate: Warship Command and Control • National Certificate: Submarine Operations • National Diploma: Electronic Warfare • National Diploma: Geospatial Image Analysis	SAS SETA
Anchor Powerboat Academy	Western Cape	Certificates of Fitness (CoF) & Safety Equipment Certificates of Competence (CoC) & Endorsements STCW 95 Training & Courses	SAMSA TETA
Aqua Academy		Marine Safety Equipment and Skipper Training	
South African Institute for Skippers (SAIS)	Western Cape	Small Vessel Skipper Training	SAMSA
Leading Light Academy	Eastern Cape	Small Vessel Skipper Training	SAMSA
Cape Town Sailing Academy CC	Western Cape	Sailing courses	SA Sailing

Training provider	Region	Description/sample of Maritime specific and maritime related education & training	Accreditation
The South African Maritime School and Transport College	KwaZulu Natal	• Maritime school and Transport College, Durban, South Africa. SA Maritime School and Transport College has been offering Learnerships and skills programs since 1986. Certificates & diplomas in international trade, specialising in either Shipping practice, ports and distribution, customs clearing and forwarding.	TETA
School of Shipping	Gauteng KwaZulu Natal Western Cape Eastern Cape	• Carries the applicable accreditation for import, export and customs clearing and freight forwarding related subjects. Also offers National Certificate: Freight Forwarding and Customs Compliance: SAQA 59365	TETA
Concord Maritime Training ("CMT")	Western Cape	• Specialises in Maritime Safety Training according to the International Maritime Organisation's training standards in all areas of seamanship (STCW - 95) Convention for the Standards of Training for Certified Watchkeepers	SAMSA TETA
2oceansmarineacademy	Western Cape	• Yachting and sailing training	Royal Yachting Association
Maritime Skills College	KwaZulu Natal	• Clearing and forwarding short courses NQF L2-3	TETA
Siyaloba Training Academy	Eastern Cape	• Basic Safety and Survival • Fishing Competency • Fishing Legislation • Restricted Radio • Safety Induction Course • Familiarisation (pre-sea) Course – STCW '95 • Proficiency in Life raft • Proficiency in Survival Craft • Personal Safety & Social Responsibilities • Safety Officer's Course • Restricted Radio Operator's • Gr. 2 Motorman Course (Engineering) • U/25 Ton Skipper's Course • Gr.4 Watchkeeper's Course (Officer of the watch/Deck Officer) • Gr. 4 Skippers Course (Deck Officer) • EDR Efficient Deck Rating – Able Seaman • Fire Fighting (small vessels) course • First Aid Sea course • ENS - Electronic Navigational Systems • ABET program	SAMSA TETA
S.A.Maritime School	Western Cape	• General Education and Training Certificate: Transport NQF L1	TETA SAMSA
Offshore Survival Training Facility	Western Cape	• National Certificate: Fishing Operations NQF L1	TETA

Annexure H: The changing legislative landscape

It is important to consider the changing legislative landscape in the skills development arena when preparing industry wide skills development planning. While this research is taking place, the legislative environment is changing, which may impact the outcome of SAMSA's strategic planning for transformation.

The new/amended Skills Development legislation passed in 2008 brought about changes to the South African Skills Development arena, which includes the following:

- Three quality councils;
- The establishment of the Quality Council for Trades and Occupations (QCTO);
- A focus on workplace learning;
- The opportunity to develop occupational qualifications from Level 1 – 10; and
- SETA's quality assurance role changing to a more focused monitoring role.

These changes also required the establishment of a new Department of Higher Education and Training (DHET) and its legal mandate, identifying the institutions for which the DHET is responsible and managing a transition phase between government departments.

In November 2009, South Africa's skills development administration & governance was officially handed from the Department of Labour (DOL) to the newly formed Department of Higher Education and Training (DHET). The new Department of HET formed through a split of the DoE to the DHET and DBE incorporating the Skills Development functions of the Department of Labour under the auspices of Minister Dr Blade Nzimande with these changes, a new dawn began in South Africa's Skills Development arena.

The Minister and his department assumed responsibility for skills development with acknowledgement amongst others of the negative perceptions about the performance, management and governance of the Sector Education and Training Authorities (SETA's). In so doing it was also accepted that there was misalignment of skills demand and supply especially with regards to critical & scarce skills such as artisan development. In order to address these issues the new Administration proceeded immediately to put a strategic framework in place aimed at aligning business skills needs with government skills development efforts. The move to DHET also includes custody over the Skills Development Act (SDA), (excluding Employment Services and Productivity SA), the Skills Development Levy Act and Section 9 of the NQF Act.

The Minister was tasked to:

- Strengthen relationships with key stakeholders;
- Clarify overarching skills strategies; and
- Strengthen the National Skills Authority (NSA).

The NSA was tasked to:

- Review National Skills Development Strategy (NSDS) III, and
- Review the recommendations on the SETA Landscape.

Institutions for which the DHET is responsible include the following:

Institution/Area of Responsibility	Role and responsibilities
Qualification Councils	• South African Qualifications Authority • Council on Higher Education (including HEQC) • Qualification Council for Trades and Occupations ○ Trade Testing Centres
Skills Development Institutes	The Skills Development Act amendment stipulates the role and function of SDI's as follows: 1. An SDI may provide advisory services on skills development, mentoring and the recognition of prior learning; 2. An SDI may provide learning programmes; and 3. An SDI may perform any other prescribed function necessary to promote skills development. • The function of SDI's is not limited solely to the provision of learning programmes, but also extends to an advisory service, mentoring and RPL service, as well as a generic provision, which extends the ambit of the SDI to incorporate any "function necessary to promote skills development".

Sector Education & Training Authorities (SETA's)	• Training providers within each SETA scope of delivery
	  ○ Occupational providers
	  ○ Private providers

Advisory Boards	• Council on Higher Education • National Board for Further Education and Training • National Skills Authority
Funding Structures	• NSFAS • National Skills Fund
Providers	• 23 Public HEI (and private) • 50 FET Colleges (and private) ○ Nationally planned

- Regionally relevant
- Responsive to local needs

- Nursing and Agricultural Colleges to remain with line Departments but to form part of a co-ordinated College sector within a defined framework

SAMSA/TETA MOU

SAMSA and the Transport Education and Training Authority (TETA) have entered into a Memorandum of Understanding to coordinate the recognition and accreditation of maritime training providers and to enhance co-operation with respect to training in the maritime industry. This partnership is aimed at meeting the objectives of the National Qualification Framework and the requirements of the Merchant Shipping (Training and Certification) Regulations, 1999.

The purpose of the SAMSA/TETA MOU is:

- To promote a coherent and effective quality assurance system for education and training in the maritime industry
- To clarify the manner in which SAMSA and the TETA (ETQA) division will co-operate with each other, co-ordinate their functions and promote consistency in their respective quality assurance policies and procedures.
- To minimise duplication of effort by conducting combined accreditation activities.
- To offer the following benefits to the maritime industry:
    - Possible funding through learnerships.
    - Standardised training curricular for all maritime training.
    - South African Qualification Authority (SAQA) registered unit standards aligned with SAMSA and international requirements.
    - Combined initial accreditation by SAMSA/TETA.

It was noted by industry that the MoU is not active and requires more refining.

National Skills Development Strategy (NSDS) III

The framework of the NSDS III 2011/12 to 2015/16 is intended to guide the development of the sectoral skills plans (SSP) for adoption by September 2010. This framework should be read as a companion to the Human Resource Development South Africa (HRDSA) Draft strategy for discussion 2010 to 2030. The draft NSDS III is awaiting acceptance by the Minister, therefore NSDS II remains in force until March 2011.

Sector Skills Plan (SSP)

The proposed NSDS III aims to enable development of focused critical and scarce skills programmes to meet the skills demand of each particular economic sector, based on sound research and reliable data. It also requires shared responsibility at the highest level in each sector; SSPs will in future be signed off by Government, Industry, Labour and the SETA for each economic sector.

NSDS III is clearly being set up to force business towards focused training of scarce and critical skills in order to meet the requirements of Mandatory Grants rather than complete Workplace Skills Plans and Annual Training Reports with no real value. The NSDS places strong emphasis on accurate SSPs containing validated data to provide strategic guidance for skills planning in each sector. It mentions the creation of Research and Development hubs to collect the data required and not a mere reliance WSPs and ATRS completed in order to receive mandatory grant payments.

Public Training Providers

The draft NSDS III focus strongly on capacity building and empowerment of FET Colleges focused on development of young artisans, technicians and graduates.

Development programmes

The draft NSDS III mentions a number of programmes that will receive funding, all strongly focused on facilitating the supply of scarce and critical skills to meet to industry demand whilst meeting national priorities. Programmes mentioned specifically are:

- Career Guidance; Recognition of Prior Learning (RPL) and Foundational programmes
- PIVOTAL Programmes (Professional, Vocational, Technical and Academic learning programmes)
- Skills programmes and other non-accredited short courses, and
- Programmes that build the academic profession and engender innovation

Until NSDS III is formally adopted by the Minster, the NSA and DHET will face the challenge of ensuring that it aligns closely with South Africa's Human Resources Development Strategy, especially in the light of meeting the Government's targets for FET Colleges, learnerships and development of scarce & critical skills.

Creating formal structures and a quality assurance environment to enable the skills development changes

The National Qualifications Framework Act No 67 of 2008 repeals the SAQA Act No. 58, 1995 and provides for the responsibilities of Ministers, Quality Councils and for transitional arrangements, however the principles of NQF remain same. The most notable change is that South Africa now has three National Qualifications Frameworks, each governed by its respective Quality Council, as indicated below:

Qualification Framework	Quality Council
Higher Education Qualifications Framework (HEQF)	Council on Higher Education (CHE) with its Higher Education Quality Committee (HEQC)
General and Further Education and Training Qualifications Framework (GFETQF)	Umalusi Quality council for schooling and FET colleges
Occupational Qualifications Framework (OQF)	Quality Council for Trades and Occupations (QCTO)

South Africa's 'new' National Qualifications Framework with its three Quality Councils, is designed to enable articulation from school to further and higher learning. It is also designed to access the workplace with structures created towards occupational preparedness.

The current proposed structure of the Qualification Framework and Quality Councils is illustrated in the diagram below:

Quality Council for Trades and Occupations (QCTO)

The QCTO is clearly stipulated in the Skills Development Amendment Act as a quality council that will oversee trades and occupations and specifically be involved in standards generating and quality assurance of these qualifications. In both the NQF Act and the Skills Development Amendment Act, the QCTO is responsible for:

- Establishing occupational qualification standards and qualifications
- Quality assurance of occupational standards
- Designing and developing occupational standards and qualifications and submitting them to SAQA for registration on the NLRD
- Ensuring the quality of occupational standards and qualifications and learning in and for the workplace
- Promoting the objectives of the NQF
- Liaise with the NSA and SAQA.

The Organising Framework for Occupations (OFO)

SETA's have been required to use the OFO in the submission of the 5 Year Sector Skills Plans and Annual Updates since it was formally adopted in August 2005. The Scarce and Critical Skills reporting format (chapter 4 of the SSP) has enabled the identification and annual publication by the Department of Labour of a national scarce and critical skills list. This List has also informed the identification of scarce and priority skills targets in engineering for JIPSA.

In essence, the Organising Framework for Occupations (OFO) is a coded occupational classification system. It is the Department of Labour's key tool for identifying, reporting and monitoring skills demand and supply in the South African labour market. Occupations are classified according to two main criteria: skill level and skill specialisation, where skill is used in the context of competency rather than a description of tasks or functions.

Under the Amended SDA definitions, 'occupational qualification' means *"a qualification associated with a trade, occupation or profession resulting from work-based learning and consisting of knowledge unit standards, practical unit standards and work experience unit standards".*

Annexure I: Interview questions: Stakeholder interviews

A. Perspectives on skills development and how it applies to the maritime sector

1. Please describe your role at the department/organization, including your experience of/and familiarity with skills development in your department/organisation and in the maritime sector?
2. Can you define the South African maritime sector?
3. Which industry within the South African maritime sector does your organisation belong to?
4. What do you see as constraints to maritime specific skills development in South Africa?
5. What do you view as the current skills needs in the maritime sector in South Africa?
6. In your opinion are there any specific constraints to skills development in specific industries within the maritime sector?

B. Supply and demand of maritime skills

1. Can you identify any emerging trends in the supply and demand of maritime skills globally and/or in South Africa?
2. In your opinion, what are the skills shortages in the South African maritime sector as a whole?
3. Would you say that the same skills shortages are experienced globally? Can you name maritime skills which are globally regarded as scarce?
4. What maritime skills are not offered in South Africa that you believe are crucial to advancing the South African maritime sector?
5. Can you please provide detail of your organisation's skills development programme if any? Please provide detail of interventions, projects etc.
6. Can you name the South African institutions offering maritime studies? Would you say that these institutions are geared to meet the skills demand of the sector, can you please explain your answer?
7. Would you say that teaching maritime studies at one of these institutions offers a viable career for an ex-seafarer? Could you please motivate your answer?
8. Would you say that there are sufficient sea time opportunities for new cadets? Please elaborate?

9. Are you aware of any leadership development programme specifically designed to meet the skills development needs of the maritime sector? If it is in place, please provide details.
10. In your opinion, what changes are required in the South African skills development arena to enable the maritime sector to become more competitive in the global sphere?
11. What is being done to create awareness of the maritime sector in line with the economic growth in the country, could you please provide information with regard to any strategic programmes in support of your response?
12. Please name the SETA your organisation is registered at.
13. Is your organisation an accredited training provider? If so, could you please list your accredited programmes and/or qualifications?
14. Can you please explain what the role of TETA versus SAMSA is in terms of accreditation and certification in terms of maritime education and training?

C. Legal and policy frameworks governing the development of skills in South Africa

1. In your opinion is the national policy, planning and the institutional environmental enabling or constraining of economic growth in the sector? Can you please explain
2. Can you identify specific policies or frameworks that you believe contribute to the development of skills in the sector? Could you please explain?
3. Are there any legal or policy frameworks governing the development of skills in the sector that in your opinion can be regarded as an impediment to the process? (please provide the name of the policy and the perceived impediment)
4. Do you have access to a database or can refer us to sources that can assist us to collate the current number and type of maritime skills available in the country? (could you please provide the name of the database/source and the website/person who can provide it – please provide as much detail as possible)
5. In your opinion, is the maritime institutional environment efficiently structured and run (including the Department of Transport, SAMSA, National Ports Authority etc.? Please motivate your answer

D. Advancing South Africa's maritime industry

1. Can you identify any maritime skills that are not offered in South Africa that you believe are crucial for advancing our country's maritime interests? (name the skill and indicate how it would advance SA's interests)
2. How would you describe the ideal Skills Development platform for the maritime industry in South Africa? (E.g. SETA requirements, types of services offered, institutional structure, education and training supply, funding mechanisms etc.).
3. What would you regard as best practice in terms of a maritime industry? If not in South Africa please provide details of the relevant country and any other detail available.
4. What factors are hindering SAMSA and key stakeholders in the sector to lead the development of the maritime sector?

E. Funding institutions/individuals for maritime skills in South Africa

1. What comments do you have about the funding of skills across the country? Could you please comment in general and skills specific to maritime?
2. Have you come across funding in the past for the maritime sector? When (year) – what funding was it, to whom and from where?
3. Can you identify funding mechanisms to fund skills development in the sector? Please name funding institutions/individuals and specify in SA or which country. What kind of funding is provided?
4. Do you have any suggestions of how funding should be allocated to maritime skills development, please explain.
5. What comments do you have about the funding of skills across the country? Could you please comment in general and skills specific to maritime?

F. Partnerships to advance skills development in maritime in South Africa

1. Has your department/organisation entered into any partnership with another country/department/organisation in order to address the scarce skills needs of the maritime sector? Could you please provide details?
2. Can you give an example of any partnerships your organisation formed to aid skills development? Are you able to refer to any other partnerships in the industry aimed at skills development?
3. What partnerships do you believe must be put in place to advance the development of skills for the maritime sector in South Africa?
4. Can you identify specific international partnerships that you believe must be put in place to advance the development of skills for the maritime sector in South Africa?
5. Can you identify specific regional/African/SADEC partnerships that you believe must be put in place to advance the development of skills for the maritime sector in South Africa?
6. How could we enhance collaboration of existing partnerships? (specify which partnerships to enhance and how)

G. Identifying stakeholders to be interviewed-

1. Are you able to recommend anyone else that you believe will have valuable inputs into this study?
2. Which stakeholder (s) participation would you consider crucial to this study

H. Concluding inputs

1. In your opinion, this skills study would be successful if …
2. What added advantage/s do you believe this study could bring to the maritime industry?
3. Do you have any additional comments or recommendations with regard to skills development challenges in the maritime industry, including any issues causing a bottleneck in skills supply to the sector?

Interview questions: Skills supply and demand survey

A. Skills Supply and Demand Survey Questions to Maritime Companies:

1. How many people do you employ? How many are on contract versus permanent?
2. Do you have all your vacancies filled? Yes or No
3. How many vacancies are not filled?
4. How many of those vacancies need to be filled by people with specific maritime qualifications or experience? How many of those vacancies are for maritime people? What proportion of those vacancies?
5. Of these maritime vacancies, what specific specialities do you need?
6. Of the non-maritime vacancies, what types of occupations are you looking to fill?
7. From your perspective, what is the scarcest maritime speciality?
8. What proportion of your workforce requires specific maritime qualifications or experience?

B. Skills Supply and Demand Survey Question to Big Companies:

1. Please could we get hold of your workplace skills plan as we need to ascertain what skills shortages have been reported and to understand the specific roles or specialities where you have shortages?
2. Which skills did you place on your Scarce Skills List?

C. Skills Supply and Demand Survey Questions to Training Institutions:

1. What maritime qualifications do you offer?
2. For each of those qualifications, how many people graduate each year? For, example, how many people graduated in each of those qualifications last year (2009)?
3. How different are your enrolment figures versus your graduation figures (Do many people fail?)
4. Are all your classes full? Are you running at capacity or is there space for more students in many of your classes?
5. If the demand for your courses was higher, would you have the capacity to offer places in your courses? What are your constraints?
6. What are the graduate numbers per qualification listed in the table below for every year starting 2007, ending 2010?

Table 1: Sample Training Institutions Graduate numbers for period 2007-2010

Training Institution	Qualification	Qualification Category	2007	2008	2009	2010
1. Cabinda Gulf Oil Company (CABGOC)(Chevron)	Deck Cadets	Accelerated Cadet Training Programme				
	Engineering Cadets	Accelerated Cadet Training Programme				
2. Cape Peninsula University of Technology	Engineering Cadets	Accelerated Cadet Training Programme				
	Deck Cadets	Accelerated Cadet Training Programme				
	Deck Officer (S1/S2)	Deck Officer				
	Chief Mate & Master (S3/S4)	Chief Mate & Master (S3/S4)				
	Skipper Coastal	Skipper Coastal or Unlimited				
	Skipper Unlimited	Skipper Coastal or Unlimited				
	Mate & Master Coastal	Skipper Coastal or Unlimited				
	Able Seaman	Deck Ratings				
	Engineer Officer in Charge of Watch	Engineer Officer				
	Second & Chief Engineer Officer	Engineer Officer				
3. De Beers Marine (South Africa)	Deck Cadets	Accelerated Cadet Training Programme				

	Engineering Cadets	Accelerated Cadet Training Programme				
	Deck Ratings	Accelerated Ratings Training Programme				
	Engine Ratings	Accelerated Ratings Training Programme				
4. Durban University of Technology	Deck Officer (S1/S2)	Deck Officer				
	Chief Mate & Master (S3/S4)	Chief Mate & Master (S3/S4)				
	Engineer Officer in Charge of Watch	Engineer Officer				
	Second & Chief Engineer Officer	Engineer Officer				
	GMDSS	Engineer Ratings				
5. Irvin & Johnson Trawling Division	Able Seaman	Deck Ratings				
6. Marine & Technical Training Solutions	Oiler/Wiper	Engineer Ratings				
7. Marine Crewing Services/Sanko/RK Offshore Management	Engineering Cadets	Accelerated Cadet Training Programme				
	Deck Cadets	Accelerated Cadet Training Programme				
	Engine Ratings	Accelerated Ratings Training Programme				
	Deck Ratings	Accelerated Ratings Training Programme				
8. Northlink College, Table Bay Campus	Skipper Coastal	Skipper Coastal or Unlimited				
	Skipper Unlimited	Skipper Coastal or Unlimited				
	Mate Coastal	Skipper Coastal or Unlimited				

	Master Coastal	Skipper Coastal or Unlimited				
9. Project Maritime Training Saldanha	Oiler/Wiper	Engineer Ratings				
	Deck Officer (S1/S2)	Deck Officer				
	Skipper Coastal	Skipper Coastal or Unlimited				
	Skipper Unlimited	Skipper Coastal or Unlimited				
	Mate & Master Coastal	Skipper Coastal or Unlimited				
	Able Seaman	Deck Ratings				
10. Safmarine (Pty) Ltd Ship Management Division	Deck Ratings	Accelerated Ratings Training Programme				
	Engine Ratings	Accelerated Ratings Training Programme				
11. SAMTRA	Deck Officer	Accelerated Cadet Training Programme				
	GMDSS	Engineer Ratings				
12. Smit Amandla Marine	Deck Cadets	Accelerated Cadet Training Programme				
	Engineering Cadets	Accelerated Cadet Training Programme				
13. Sonasurf (Angola) Lda. c/o Seatrain	Deck Cadets	Accelerated Cadet Training Programme				
	Engineering Cadets	Accelerated Cadet Training Programme				
14. Sonatide Marine Limited	Deck Cadets	Accelerated Cadet Training Programme				
	Able Seaman	Deck Ratings				
15. Unicorn	Deck Cadets	Accelerated Cadet Training Programme				

	Engineering Cadets	Accelerated Cadet Training Programme				
	Able Seaman	Deck Ratings				
	Engine Ratings	Accelerated Ratings Training Programme				
	Deck Ratings	Accelerated Ratings Training Programme				
	Oiler/Wiper	Engineer Ratings				

Annexure J:

Additional information on supply and demand data

The current number of certified seafarers in South Africa

To understand the severity of the shortage in seafarers, the shortfall reported in scarce skills data is considered as a proportion of the current number of seafarers employed in the South Africa maritime sector. This is a convention adopted from the major studies on seafarer shortages, including the BIMCO/ISF Manpower Study and updates (1990, 1995, 2000 and 2005), as well as the more recent JITI and the Nippon Foundation study entitled *The Future Global Supply and Demand for Seafarers and Possible Measures to Facilitate Stakeholders to Secure a Quantity of Quality Seafarers* (2010).

Number of certified seafarers in South Africa

According to SAMSA's records, there are 5490 qualified officers certified in South Africa. Of those, only 24 deck officers and 16 engineering officers are registered under recognition of foreign competency provisions, indicating that the majority by far qualified in South Africa.

The table below illustrates the number of certified officers in South Africa according to industry clusters. The data indicates that the largest proportion of officers is registered in the commercial fishing industry, followed by shipping transport and then ports. This is a reflection of the relative sizes of the industries within the South African maritime sector. There are only 223 more deck officers than engineering officers nationally; however the ratio of deck to engineering officers in ports services is noticeably larger than the same ration in the other industries reported.

Table 16: Number of certified officers in South Africa

Officers	Shipping Transport	Ports Services	Commercial Fishing	Officer Category Totals
Deck Officers	935	296	1620	2851
Engineering Officers	774	56	1728	2558
Totals	**1709**	**352**	**3348**	**5409**

From the SAMSA database of certified seafarers, 2010

While the account of certified officers in South Africa can be accepted as reliable, it is evident that the numbers on certified ratings cannot. Table 17 reports the number of certified ratings in South Africa according to industry clusters. There are only 1287 qualified ratings registered in the SAMSA database, the vast majority in the shipping transport industry. Rather than an accurate depiction of ratings shortages, this low number is partly a function of the less formalised pathway for securing a position as a hand in the sector. Certification as a rating is not conventionally considered a prerequisite for employment and there is therefore no mandatory registration.

It is also a reflection of the challenges currently being experienced in keeping track of maritime data at a national level. The absence of an exhaustive account of ratings implies that, at least until an effective monitoring solution is implemented, national skills planning will be undermined by a lack of precision.

Table 17: Number of certified ratings in South Africa

Ratings	Shipping Transport	Ports Services	Commercial Fishing	Ratings Category Totals
Deck Ratings	828	46	24	898
Engineering Ratings	376	13	N/A	389
Totals	1204	59	24	1287

From the SAMSA database of certified seafarers, 2010

In terms of independent corroborating data, the commercial fishing industry provides the most comprehensive data on crews publicly available. It is the largest of the primary maritime industries in terms of workforce, with 13117 personnel employed on vessels of which 2445 are classified as skilled fishers (Economic & Sectoral Study of the South African Fishing Industry, 2003). Considering that the reported number of skilled fishers is a 7 year old figure, it compares favourably with the SAMSA numbers and suggests confidence in the SAMSA data's utility.

The current demand for seafarers in South Africa

Currently the South African maritime sector reports a significant shortage of seafarers relative to the number of qualified seafarers certified in the country. A total shortage of 1383 officers represents the equivalent of 25% of the currently certified officer complement. This proportional shortage is significantly larger than the estimated shortfall of 2% or 10000 officers reported in the 2005 update of shortages in the global shipping industry (BIMCO, 2005). It should be noted that the methodology for the BIMCO study biases the shipping transport industry and would likely either under-report or miss shortages of officers in other industries such as port services, and the shore-based demand.

In agreement with international trends the shortage of officers exceeds that of ratings; however the South African shortage of ratings runs contrary to the global oversupply (BIMCO, 2005). The ratings shortage is not an aberration due to questionable scarce skills data, but is confirmed in both the skills demand and supply survey and the key informant interviews. What is unexpected is that the reported engineering ratings shortage is very low. This runs counter to the general trend in South Africa of higher shortfalls in more technically demanding occupations. There is nothing in the demand and supply survey data or the key informant interviews to support a finding in this regard and the number reported should be interpreted with caution.

Table 18: Reported shortages of seafarers

Seafarer Categories	Shortages Reported
Deck Officers	891
Engineering Officers	592
Total Officers	1383
Deck Ratings	420
Engineering Ratings	10
Total Ratings	430

Adapted from the TETA scarce skills list, 2010

Ideally the shortage of seafarers across the maritime industries focussed on in this study should be extracted from the raw workplace skills plans data. It is possible however to extrapolate shortages by industry from the TETA scarce skills list using the Organising Framework for Occupations (OFO) codes. Although the codes do not provide a sufficiently discriminating mechanism for the purpose, introducing reasonable assumptions nevertheless offers useful results.

It is difficult to draw plausible conclusions from the reported shortages being attributed here to the Oil, Gas & Mining industry and the Operational Support Services Cluster. This is because there is no quantified baseline of seafarers employed in those industries to compare the shortages to. However, if we consider the fact that Oil, Gas & Mining is a young industry regionally and that Operational Support Services by definition require less personnel with seafaring experience than primary maritime industries, the numbers can be reasonably interpreted as significant.

It is noticeable that the ratings shortage is being reported exclusively in the commercial fishing industry. Assuming that all industries are reporting equally thoroughly, the numbers appear to corroborate interview findings from fishing industry informants on the high mobility of fishing industry seafarers as they migrate to other industries within the sector.

The numbers however suggest that Commercial Fishing is the most successful in managing its seafarer supply, reflecting the lowest reported shortage of the larger industries.

Table 19: Seafarer shortages by industry categories

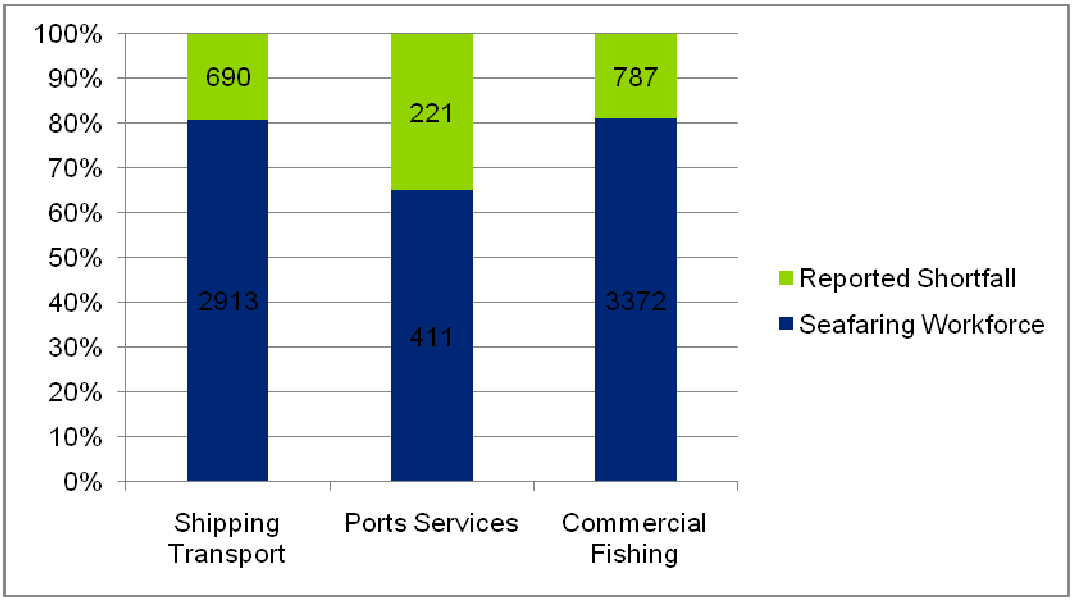
Deck officer	**150**	**110**	**201**	**430**
Engineering officer	110	105	20	357
Deck ratings	420	0	0	0
Engineering ratings	10	0	0	0
Grand Total	690	215	221	787

Adapted from the TETA scarce skills list, 2010

In considering Shipping Transport and Ports Services figures only, the industries report a total shortage of 1008 seafarers. In comparing the reported shortage to the number of certified seafarers employed in those industries it becomes evident that the shortage in the Shipping Cluster, especially in Ports Services, might be considered severe.

The Transport, Storage & Communications Industries large sample survey reported that the total employment in the Sea and Coastal Water Transport segment of the Transport industry amounted to 3043 jobs including contract workers (StatsSA, 2006). Sea and Coastal Water Transport is the sector industry code intended to incorporate shipping transport and port services industries. Although this figure was considered an underestimation of the workforce in the shipping cluster, the significant difference between the official statistics on employment in the cluster, the SAMSA numbers on officers and ratings and the reported shortages in the TETA scarce skills list underscores the urgent necessity to revise the manner in which national measures are applied to the maritime sector.

Figure 14: Proportion of seafarers employed to seafarers required by maritime industry



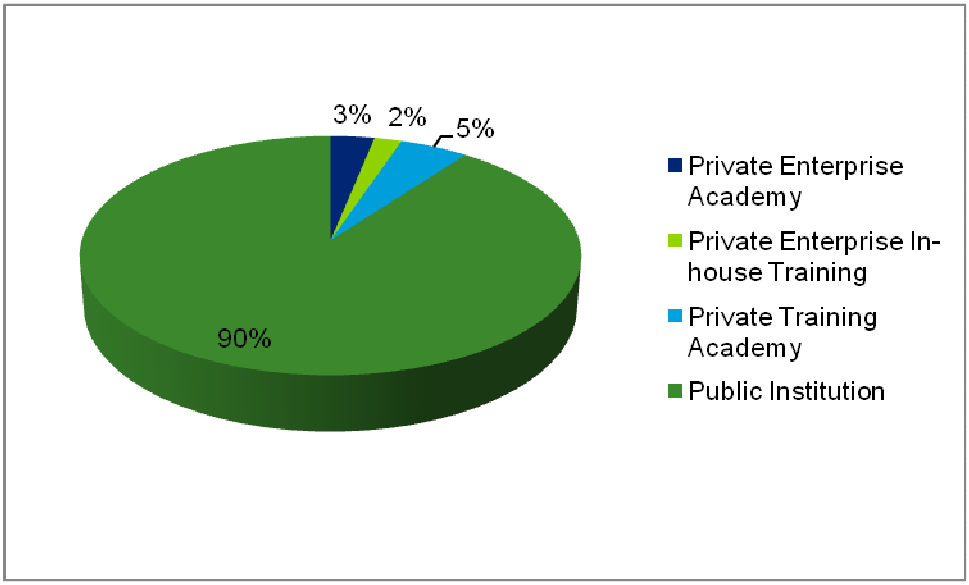
The current supply of seafarers in South Africa

To draw useful conclusions on the supply of seafarers it is important to consider the numbers of cadets graduating from education and training institutions. Training institutions provide the necessary theoretical training that cadets must complete before being eligible for securing time at sea. It is noted that regardless of the numbers completing theoretical training however, the supply of officers is determined by the number of cadets that complete time at sea and receive certification.

There are a total of 14 training institutions in South Africa that offer SAMSA accredited courses which, coupled with time at sea, lead to seafarer certification. These institutions can be classified into 3 broad categories, namely Private Enterprise In-House Training, Private Academies and Public Institutions. The institutions are training providers not just to South African cadets, but service the region. As quoted, "we have successfully trained over 150 Angolan and Nigerian Seafarers who are fully sponsored through their respective Governments".

The largest number of cadets is trained by the three public institutions. Private enterprise has resorted to in-house training programmes in an attempt to address skills shortages and meet their staffing requirements. In some instances the in-house training solution has developed into a formalised academy function with substantial numbers of candidates being trained.

Figure 15: Annual proportion of candidates trained by type of institution



The private training academies are either associated with a candidate management company or provide candidate management themselves on behalf of private enterprises sponsoring cadet training. This involves enrolment of candidates in training courses, disbursing of bursary or scholarship funds and management of learnerships. Full service training academies also make a significant contribution by including a placement function for candidates' sea-going berths. The undertaking to deliver this added service contributes to their limited capacity, as they constrained by berth scarcity to what they are able to commit to. In general the training academies and public institutions report that they are training at capacity. As indicated by an interviewee from a private training academy "We have over the past five years placed over 400 seafarers in employment with international ship-owners and we hope to grow the pool of seafarers not only from South Africa but from the African Continent as a whole".

Across the 14 institutions offering seafaring courses accredited by SAMSA that lead to certification, an average (calculated over a 4 year period) of 244 new cadet officers graduate their theoretical training from accelerated cadet programmes or S1/S2 training. In addition, an average (calculated over a 4 year period) of 104 existing officers complete their theoretical component for their senior officer certification.

In terms of ratings only 4 of the 14 institutions offer SAMSA accredited courses that lead to certification. The data indicates that cumulatively these institutions graduate 50 candidates per annum, 35 as deck ratings and another 15 as engineering ratings. At this rate and under static market conditions the supply of ratings can meet the demand within a decade. However, in order to meet the demand of a growing market additional intervention will be required.

The data on ratings supply is clearly not comprehensive. Nor are the dynamics of crewing clear for most maritime sector industries included in the survey. According to records, there are more certified officers than ratings, which is obviously not a reality reflected on sea going vessels. The absence of an exhaustive account of ratings will continue to undermine national skills planning unless a suitable solution for monitoring numbers is devised.

Table 20: Institutions offering SAMSA accredited training leading to seafarer certification

Private Enterprise In-house Training
De Beers Marine (South Africa)
Irvin & Johnson Trawling Division
Unicorn
Safmarine (Pty) Ltd Ship Management Division
Smit Amandla Marine
Private Training Academy
Marine Crewing Services/Sanko/RK Offshore Management
Project Maritime Training Saldanha

SAMTRA
Sonasurf (Angola) Lda. c/o Seatrain
Sonatide Marine Limited
Public Institution
Cape Peninsula University of Technology
Durban University of Technology
Northlink College, Table Bay Campus

Table 21: Numbers of Officer completing theoretical training per year

Officer Qualifications	Completing Theory Requirements
New Officers	
Deck Cadets (accelerated programme)	49
Deck Cadets (S1/S2)	72
Engineering Cadets (accelerated programme)	65
Engineer Cadets (S1/S2)	58
New Officers Totals	244
Senior Officers	
Second & Chief Engineer Officer (S3/S4)	61
Chief Mate & Master (S3/S4)	43
Senior Officers Total	104
Qualifying Officers Totals	348