

**THE INTERNATIONAL MARITIME TRANSPORT & LOGISTICS CONFERENCE
(MARLOG 4)
A SUSTAINABLE DEVELOPMENT PERSPECTIVE FOR MEGA PROJECTS
29- 31 MARCH 2015**

**IDENTIFICATION AND ASSESSMENT OF TOP GLOBAL TERMINAL
OPERATORS' SUSTAINABILITY PRACTICES AND REPORTING**

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ABSTRACT: Sustainability has gained a wide global concern during the last decade. Container terminal operators have been seeking to adopt sustainability measures in their decision-making and strategic planning in order to provide for current and future generations a better quality of life without degrading the environment. The focus of this research is in the area of sustainability practices of top global terminal operators (GTO) as they constitute part of the ports' role in providing global sustainability. Such a study is important in order to identify and evaluate sustainability practices adopted and implemented by top GTOs. The top 5 GTOs are HPH, AP Moller, COSCO, PSA and DP World. The research adopted a qualitative approach to analyze the data gathered from annual company reports and websites. The findings from this research provide evidence that GTOs are keener to operate sustainable terminals and effectively utilize sustainability practices on the environmental, economic and social dimensions in order to achieve their strategic overall objectives that meet their stakeholders' expectations. The study concludes that GTOs have a major impact and an important role to play in maintaining worldwide sustainability. They participate in the most important sustainability indicators both regionally and internationally. Entailing sustainability within GTOs strategic objectives is highly challengeable and requires top management support and long-term vision, in addition to continuous stakeholder backup and feedback. This paper recommends that further developments are needed in the area of publishing sustainability reports independent from the company annual reports and to shed more light on the individual sustainability practices of subsidiaries spread all over the world. Moreover, the port authorities granting the concession for a private terminal operator should place more weight on the sustainable development section in the technical proposal and deploy supervisory and controlling measures on its behalf after the concession is effective until its maturity.

Keywords: global terminal operators, DP world, sustainability dimensions, sustainability measures, sustainability reporting.

INTRODUCTION

The world seaborne trade reached 9.6 billion tons in 2013 representing 85% of the total

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world trade, containerized trade reached 1.5 billion tons representing 15.6% of the world seaborne trade and the trend towards containerizing cargo is increasing especially with the new advancement in technologies deployed in container vessels and container handling cranes and yard equipment. [1] (UNCTAD RMT, 2014).

Together with the increased phenomena of public private partnership in building, managing and operating container terminals to efficiently and effectively serve shipping lines and accommodate container vessels reaching up to 18000 TEUs. The container terminal operations market has opened its arms widely for local and regional terminal operators to become global terminal operators. [2] Top container terminal operators such as Hutchison Port Holdings, Port of Singapore Authority, DP World, and APM Terminals contribute more than 50% of the world total container throughput,

On one hand, global terminal operators typically possess a market-based edge in the bidding procedure for concessions and their market share in terminal throughput is therefore likely to increase in the future. The market-based strengths of global terminal operators relate to their financial strength and their proven record in terms of terminal development and expertise. [3]

On the other hand, GTOs looking for growth seek to capture opportunities based on the following; gain market access, increase market share, perceived benefits (economic and non-economic), availability of resources, associated business and political risks.[4]

The container terminal industry is predominantly private, oligopolistic with multinational assets[5] (Rodrigue, 2010). [6] defined a Multinational Enterprise MNE as a firm holding at least one foreign subsidiary. Also referred as transnational terminal operators (TTO) [7] . The port authorities grant private terminal operating companies' concessions to operate a terminal and receive a concession fee from these companies. As a response to the concentration in container shipping, a number of terminal operators have expanded internationally. [3] (Pallis, 2010).

Thereby, the role of GTOs in maintaining a sustainable maritime transportation system as a node in the international supply chain and logistics industry has become increasingly important and needs to be explored, determined and evaluated.

Egypt has incorporated PPP and B.O.T. concession agreements to operate a number of container terminals located at Alexandria/El Dekhela port which is operated by AICT a subsidiary of HPH, in addition to East Port Said port which is operated by SCCT in which Maersk shipping line which is a subsidiary of AP Moller group is a shareholder. Moreover, container terminal at El Sokhna port which is operated by DP World Sokhna a subsidiary of DP World Ltd.

In the essence of the above, this research focuses on identifying and assessing the sustainability practices of top global terminal operators and evaluate their degree of disclosure in sustainability reporting and compliance with sustainability reports' guidelines recommended by sustainable development international regulatory bodies.

The concept of Sustainability in ports introduced by PIANC WGI50,2011 debated that sustainable port [8] is "one in which the port authority together with port users, proactively and responsibly develops and operates, based on an economic green growth strategy, on the

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working with nature philosophy and on stakeholder participation, starting from a long term vision on the area in which it is located and from its privileged position within the logistic chain, thus assuring development that anticipates on the needs of future generations, for their own benefit and the prosperity of the region that it serves”. Moreover, AECA – Spanish Society for Accountancy and Management- 2006 as “allowing increasing container, bulk, general cargo and passengers’ traffic volumes, cutting back on energy and resources, generated waste volumes, and negative impacts to social systems and ecosystems in the port area of influence”. [9]

Many ports already publish a sustainability report or have it integrated in their annual report. Some of them are focusing on the activities of the whole port; others focus on the activities of the port authorities. Some drawn up by port authorities; others by port communities. Despite the different approaches, reports in general are based on the guidelines for sustainability reporting provided by the Global Reporting Initiative (GRI). [10]

The Global Reporting Initiative (GRI) is a network-based organization that produced a comprehensive sustainability reporting framework. This Global Reporting Framework is based on the principles and indicators that organizations can use to measure and report their economic, environmental, and social performance. The guidelines are quite generic. Only for a limited number of sectors specific guidelines are available (e.g. for airports) or under development (e.g. for logistics and transportation). So far, there is no sector specific guidance for ports but for note, PIANC is working on preparing working group specialized in preparing “ sustainability report standards for ports” and already presented terms of references for what is called WG174.

And according to GRI, “sustainability reporting” defined as “a practice of measuring, disclosing, and being accountable to internal and external stakeholders for organizational performance towards the goal of sustainable development”. [8].

RESEARCH AIMS AND OBJECTIVES

Several researches have been carried out to investigate and analyze the sustainability of seaports however not much attention has been directed towards the practices of container terminal operators as separate entities from port authorities and in that sense, their strategic objectives and management approach play an important role in determining their adopted sustainability practices.

This paper aims to fill the gap in the literature concerning the sustainability practices and reporting of top global terminal operators. The Practical implications of this research is to support decision makers/practitioners in ministry of transport, port authorities, and terminal operators to fully comprehend the main pillars of sustainable

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development and their associated measures and to further develop them in order to achieve the targeted outcome. Moreover, sustainable development entities and supporters could benefit from this research by shedding more light on the specific needs of the stakeholders in maritime transport industry generally and of container terminals specifically with respect to sustainability reporting and disclosure. This research supports academics in generalizing the results of the research and further investigate areas of sustainable development in different scopes and contexts.

The research objectives are:

1. Identify top global terminal operators market share and geographical coverage.
2. Determine sustainability dimensions and measures in seaports.
3. Explore top GTOs sustainability practices and reporting framework.
4. Evaluate top GTOs sustainability reporting according to international sustainability reporting standards.
5. Formulate future recommendations that enhance and foster sustainability practices and reporting within the GTOs industry to meet stakeholders' expectations.

RESEARCH QUESTIONS

The paper aims to answer the following research questions:

- What are GTOs market share and geographical coverage?
- What are the dimensions of sustainable development?
- How can these dimensions be measured?
- How do GTOs disclose their sustainability practices?
- What are the international sustainability reporting guidelines?
- How much is the degree of compliance of GTOs sustainability practices and disclosure with respect to international sustainability regulatory bodies and reporting guidelines?

LITERATURE REVIEW

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GTOS MARKET SHARE & GEOGRAPHICAL COVERAGE

The landlord port authority model is the most common institutional model in the global container port industry, evident in up to 90% of ports worldwide. There are 24 companies that are considered by Drewry to be global or international container terminal operators. In 2013, nearly 60% of world capacity fell under the GTO/ITO category, with just over 20% handled by the 'Other private operator' category and the balance state-operated category. The regions where GTOs and ITOs accounted for the highest proportion of volume in 2013 were Europe, Asia and the Middle East/Indian Subcontinent, with over 60% of throughput in each region.

For 2013, two new operators have been included in the league tables: China Merchants Holdings International (CMHI) and Bolllore Group. Both have aggressive expansion intentions. [11].

Table (1) illustrates the container throughput of each GTO during the period 2011-2013 showing their individual share of the total handled by GTOs and their accumulated shares which reach 50% from the shares of the first five GTOs as depicted in figure 1.

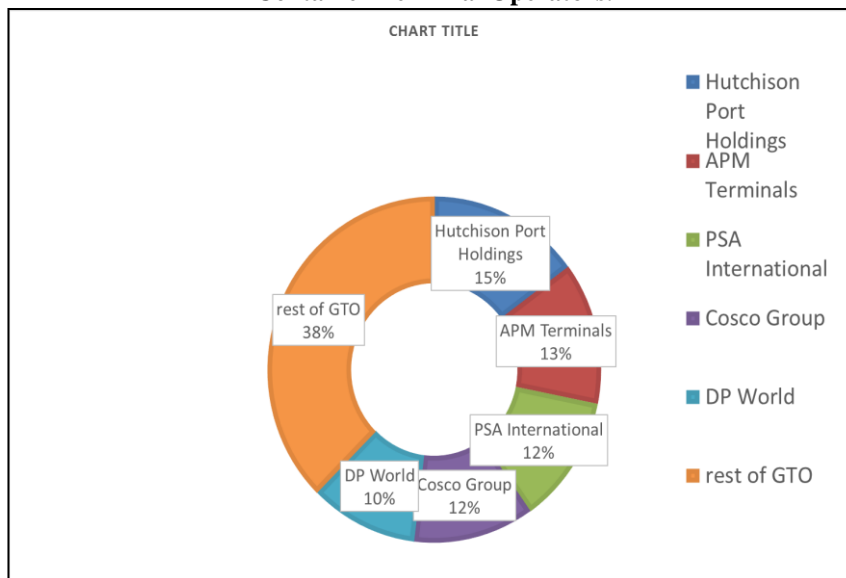
Table (1) GTOS market share 2011- 2013

Operator	2013			2012			2011		
	Million teu	Share%	Accu share	Million teu	Share%	Accu share	M- Teu	Share%	Accu share
Hutchison Port Holdings	76.1	%11.80	%11.80	74.3	%12.00	%12.00	71.8	%12.1	%12.1
APM Terminals	68	%10.60	%22.40	66.2	%10.60	%22.60	63.7	%10.7	%22.80
PSA International	61.7	%9.60	%32.00	59.7	%9.60	%32.20	57.1	%9.6	%32.40
Cosco Group	59.9	%9.30	%41.30	56.3	%9.00	%41.20	53.2	%8.9	%41.30
DP World	53.7	%8.40	%49.70	54.5	%8.80	%50.00	54.1	%9.1	%50.40
Terminal Investment Limited (TIL)	29.9	%4.60	%54.30	26.6	%4.30	%54.30	23.1	%3.9	%54.30
CMHI	23.5	%3.70	%58.00	21.5	%3.50	%57.80			%54.30
China Shipping Terminal Development	20.3	%3.20	%61.20	20.7	%3.30	%61.10	18.8	%3.2	%57.50
Hanjin	14.4	%2.20	%63.40	13.5	%2.20	%63.30	10.0	%1.7	%59.20
Eurogate	14	2.20%	65.60%	13	2.10%	65.40%	12.9	2.2%	61.40%
CMA CGM	9.9	1.50%	67.10%	8.8	1.40%	66.80%	8.1	1.4%	62.80%
SSA Marine / Carrix	9.8	1.50%	68.60%	9.6	1.50%	68.30%	9.7	1.6%	64.40%
Evergreen	9.5	1.50%	70.10%	9.7	1.60%	69.90%	9.1	1.5%	65.90%
NYK	7.6	1.20%	71.30%	7.3	1.20%	71.10%	6.6	1.1%	67.00%
HHLA	7.5	1.20%	72.50%	7.2	1.20%	72.30%	7.1	1.2%	68.20%
OOCL	6.5	1.00%	73.50%	6.1	1.00%	73.30%	5.6	0.9%	69.10%
Yang Ming	6.5	1.00%	74.50%	6.2	1.00%	74.30%	5.9	1.0%	70.10%

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ICTSI	6.3	1.00%	75.50%	5.6	0.90%	75.20%	5.2	0.9%	71.00%
APL/NOL	6.3	1.00%	76.50%	6.1	1.00%	76.20%	6.3	1.1%	72.10%
K Line	5.8	0.90%	77.40%	5.4	0.90%	77.10%	4.5	0.8%	72.90%
MOL	4.1	0.60%	78.00%	4.1	0.70%	77.80%	3.4	0.6%	73.50%
Hyundai	4	0.60%	78.60%	3.2	0.50%	78.30%	2.7	0.5%	74.00%
Bollore	3.9	0.60%	79.20%	3.5	0.60%	78.90%			74.00%
Grup TCB	2.4	0.40%	79.60%	2.2	0.40%	79.30%	2.6	0.4%	74.40%
GTO total	511.6	79.60%		491.5	79.10%		441.6	74.1%	

Source: compiled by the researchers based on Drewry Maritime Research Annual Report of Global Container Terminal Operators.



**Figure (1) Chart of top 5 share of the total
Source: compiled by the researchers based on Drewry Maritime Research Annual Report of Global Container Terminal Operators.**

The top GTOs geographical dispersion and concentration varies according to each company's strategic objective and home based market. HPH portfolio is dominated by the far east region then Northern Europe market followed by South east Asia. While APM has a much more equivalent share in Far East, North Europe and Africa followed by North American and South Europe then SE Asia and the middle east. However, Port of Singapore Authority reflects a different geographical market coverage by operating 64% in SE Asia and 14% in North Europe and 12% in Far East with no market access in Middle East. Cosco group as well does not have any presence in middle east but it is 71.5% present in far east followed by South Europe. DP World is the leader in the Middle East as it represents 45.4% of its portfolio and it has the largest number of market access worldwide

Table (2)Geographical Coverage

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Operator	North America	North Europe	South Europe	Far East	SE Asia	Mid East	Central America/ Caribbean	South America	Aust.	South Asia	Africa	East Europe
Hutchison Port Holdings		%21.40	%1.90	%47.00	%10.70	%2.10	%12.60	%0.60	%0.20	%1.70	%1.20	%0.60
APM Terminals	%12.80	16. %10	%12.80	%18.10	%8.60	%5.20		%3.80		%6.60	%15.20	%0.80
PSA International		14% .60	%5.60	%12.00	%64.20		%0.20	%0.70		%2.70		
Cosco Group	%4.40	3.3%0	%14.70	%71.50	%2.80						%3.40	
DP World	%1.70	%6.00	%1.00	%14.20	%6.20	%45.40	%1.70	%5.30	%2.40	%10.80	%4.10	%1.50

Source: compiled by the researchers based on Drewry Maritime Research Annual Report of Global Container Terminal Operators.

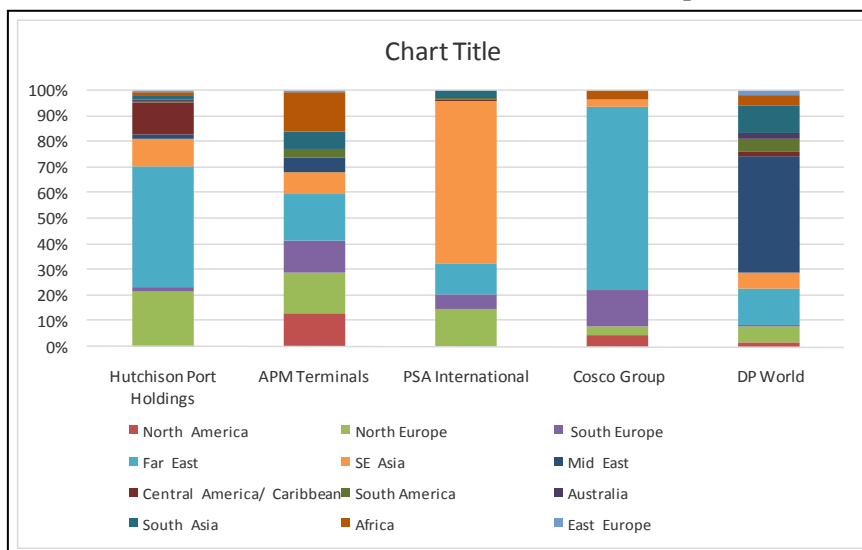


Figure (2) illustrates the geographical coverage portfolio for each of the top 5 gtos
Source: compiled by the researchers based on Drewry Maritime Research Annual Report of Global Container Terminal Operators.

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DP World operates in 27 countries in all regions of the world with different market concentration strategies. It highly focuses on emerging markets although it has some presence in Europe & limited presence in North America. Significant volume of its operations is generated from its home base in Dubai. It prefers to be a gateway terminal to handle foreign trade of the countries rather than to operate a transshipment hub although that is the case only in its home base terminals. DP World expects to handle 100 Million TEUs by 2020.

We evolved from serving local trade in Dubai (UAE) started with the development of Port Rashid in 1972, followed in March 1979, with the opening of Jebel Ali port. In 1991, the operations of Port Rashid and Jebel Ali port were combined to create Dubai Ports Authority.

In 1999, Dubai Ports International FZE was formed to manage and operate container terminals and other facilities outside the UAE. In 2005, it acquired CSX World Terminals, a leading global container terminal operator. In 2006, the acquisition of The Peninsular & Oriental Steam Navigation Company (P&O) further increased their global network and market position in Asia, India, Australia, the Americas, Europe and Africa. DP World was listed on NASDAQ Dubai in 2007 and on the London Stock Exchange in 2011. Figure 3 depicts the market coverage of DP World in 2013. [12].

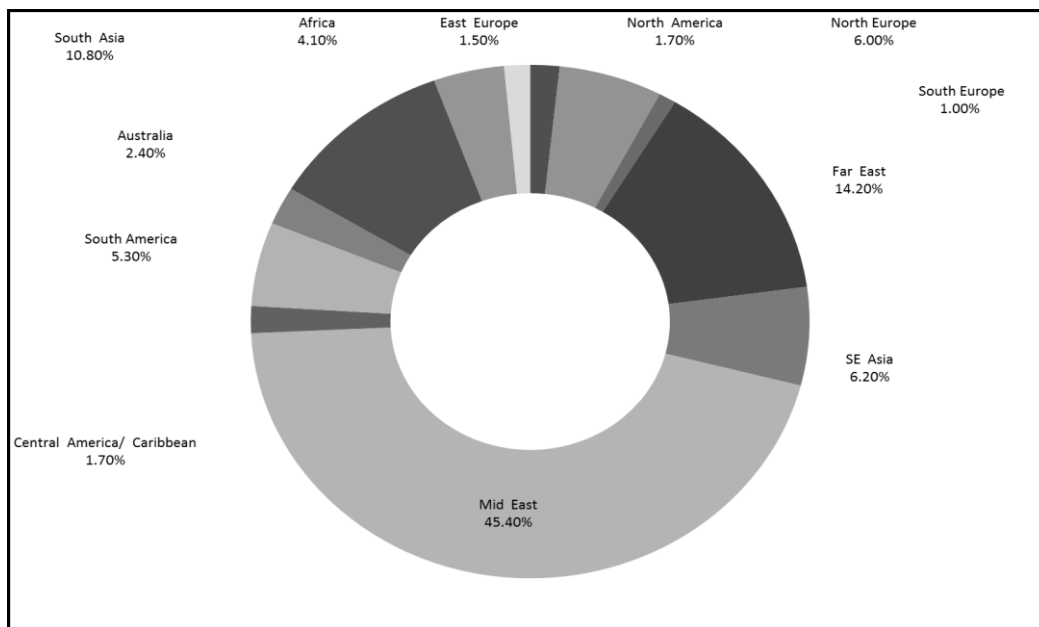


Figure (3):

Chart of DP World

Source: compiled by the researchers based on Drewry Maritime Research Annual Report of Global Container Terminal Operators

IMENSIONS OF SUSTAINABLE DEVELOPMENT

- 1. Environmental dimension:-** Ports and Container terminals are considered to be the largest sources of air pollution in coastal cities which come with a heavy environmental burden and imposing threats to public health and environment, where containers are lifted from a

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marine vessel by a crane and later moved by other crane, handler or forklift. The majority of these handling equipments (HEs) are conventionally powered by internal combustion engines that are powered by diesel engines with non-road emission standards. Due to the fact that handling loaded containers is an energy-intensive function, HEs are often considered to be one of the most significant sources of air pollution caused by terminal operations. So, awareness of necessary action for the reduction of pollution has become a public concern. [13]. There are another faces of ports' pollution that harm community like noise, waste production, changes in marine ecosystems, odour, resource consumption , port development on land or sea and bunkering operations may engender oil spill risks with potentially catastrophic impacts on beaches, food chains, sediment and fishing communities.

All of these pollutions requires coordination and collaboration to adapt policies, initiatives, and regulations not only to reduce the amount of waste produced by ports or using less energy, but are concerned with developing processes that will lead to businesses becoming completely sustainable in the future and protecting the natural world. Many ports have started to work together directly or through industry organizations to share technical expertise and best practices and create new tools to advance port sustainability. [14].like: PIANC Sustainable Ports Guide, ESPO Green Guide, ISO 14001

2. **Economic dimension:** Second face of sustainability is economic one, which was defined by European Commission,2001 as “*the ability of holdings to generate sufficient funds to sustain their production potential in the long*”[15] so it concentrates on economic success than only financial result and included all aspects of an organization such as innovation and technology, collaboration, knowledge management that must be managed and respected in order to add value for port in the market. These aspects have been handled by many green port guides like PIANC (2013), ESPO PPISM Port Performance Indicators (2012), And also Baumgartner and Ebner (2010) who identified the economic aspects of sustainability within port organizations and focused on: the competitive ranking among container ports, the investments they are making in their future growth and technologies, innovative policies or practices that promote sustainability, and incentives they offer to their customers to reduce the negative impacts of port operations and improve the industry as a whole. Thus the use of such aspects seems meaningful, as good results in these aspects are likely to lead to good financial and sustainability results of the port.
3. **Social dimension:** Third dimension is defined according to Rijsenbrij as “*Processes, systems and equipment should not violate social aspects, but improve them*”. The social dimension of sustainability can be classified as internal and external activities with a focus on stakeholders and the surrounding community and internal activities with focus on employees and performance management.

MEASUREMENT OF SUSTAINABLE DEVELOPMENT DIMENSIONS

As mentioned before, environmental, economic and social dimensions are the backbone of

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sustainability behavior in organizations. And in order to develop sustainability strategies regarding each dimension, it is necessary to be aware of the range of sustainability issues that have to be regarded and also designed in such a strategy. [16].

For environmental aspect

- Resource Use
 - Emissions into Air, Water, Ground
 - Biodiversity/
Habitat
Management
 - Waste and Hazardous Waste
 - Environmental issues related to the goods movement
supply chain; Traffic, Noise, Light/Glare, Aesthetics,
Public Health Impacts
- **Example**, ACT: aqba container terminal has set a 10% CO₂ emissions reduction target to be achieved annually over the next 5 years. Moreover, the deployment of greener yard equipment, such as the recently acquired Eco Rubber-Tyred Gantry Cranes, is helping to save up to 40% on fuel consumption and hence emissions, also greenhouse gas emissions per move were reduced by 11.3% in the period of 2008-2010. In order to continually reduce emissions, [17].
- Australia DP world sustainability report: has achieved in 2014 about 13.4% CO₂ emissions reduction compared with 2008.

And there are many tools used to measure these aspects like:

- Risk Assessment
- Life Cycle Analysis
- Ecological
Footprint
- Leadership in Energy and Environmental Design
(LEEDS)
- Environmental Impact Analysis

Economic aspect:

- Financial Strength
 - Collaboration
 - Knowledge Management
 - Processes
 - Innovation, Technology,
Investment & Incentives
 - Sustainability Reporting
- **Example**. ACT: aqba container terminal: A group of employees recently devised an innovative spreader mechanism that resulted in substantial savings to operational costs. This contingency mechanism allowed them to adapt one of the Replaceable Tailgate Spreader (RTG) to support container transfer through both RTG and Ship-to-Shore (STS) cranes, thereby saving the terminal the cost of importing a dedicated STS spreader at the cost of (JOD) 120,000. [17].

Tools used to measure these aspects like:

- Economic Impact
Assessment
- Cost-benefit analysis
- Ecosystem service
valuation
- Green Accounting
- Eco-Efficiency Analysis

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Social aspects

External aspects:-

- Ethical Behavior/No Corruption/ Human Rights; Public Health & Safety
 - Employment/Workforce Development – External
- Community Engagement/ Manage Community Relations
 - Corporate Citizenship - Quality of Life, Livability, Social integration
- Internal aspects:
- Corporate Governance
 - Motivation and Incentive - Internal
- Human Capital Development – Training and Education
 - Health & Safety; Emergency/Disaster Management
- **Example** , HPH Trust takes its anti-corruption responsibilities very seriously. They have established channels through which their stakeholders can report illegal or excessively risky activities in a confidential manner. Persons making appropriate reports are assured of protection. They also encourage all managers to communicate and instill a culture of good corporate governance among their staff. [18].
- **Tools used to measure these aspects like:**

<ul style="list-style-type: none"> • Health impact assessment • Environmental Analysis 	<ul style="list-style-type: none"> • Collaborative Problem-Solving • Network Analysis
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GTOS DISCLOSURE OF SUSTAINABILITY PRACTICES

Ap moller sustainability report, dp world annual company report, dp australia sustainability report, hph trust sustainability Report, cosco annual report, psa company website & annual report International Sustainability reporting guidelines

‘Sustainability reporting’ is a broad term considered synonymous with others used to describe reporting on economic, environmental, and social impacts and include a disclosure about results that occurred within the reporting period in the context of the organization’s commitments, strategy, and management approach. Reports can be used for the following purposes: [10]. Benchmarking and assessing port sustainability performance with respect to laws, norms, codes, performance standards, and voluntary initiatives;

- Demonstrating how the organization influences and is influenced by expectations about sustainable development; and
- Comparing performance within an organization and between different organizations over time.

All reporting organizations should describe the scope of their reporting and are encouraged to indicate their plans for expanding their reporting over time. In order to ensure a balanced and reasonable presentation of the organization’s performance, a determination must be made about what content the report should cover. This determination should be made by considering both the organization’s purpose and experience, and the reasonable expectations

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and interests of the organization's stakeholders (Public Authorities, Technical Experts, Contractors, Financiers, Shipping Companies, Shippers, NGO's). Both are important reference points when deciding what to include in the report.

BENEFIT OF ADOPTING SUSTAINABILITY APPROACH:

- One of the benefit of applying sustainability aspects on ports are increasing "Return on total Assets", which is defined as a relation between (Net Income (NI) / Average Total assets (TA) and used to measure how efficient management is at using its assets to generate earnings/net income, So Higher the ROA % the better business line is in making a profit on its investment.
- At the same time, there are instances of goodwill on the part of the private sector to invest in sustainable development; in consequence, the value of investments explicitly linked to sustainability objectives is growing. Many "innovative financing" initiatives have sprung up, many of which are collaborative efforts between the public and private sectors, as well as international organizations, foundations and NGOs. Signatories of the Principles for Responsible Investment (PRI) have assets under management of almost \$35 trillion, an indication that sustainability principles do not necessarily impede the raising of private finance[19].
- Ports are a major economic driver in counties across the nation. They are also competitive environments, and are constantly vying for new business while maintaining current relationships. As more and more major national and international companies, manufacturers, retailers and cruise operators are looking to improve their environmental record, they will be examining how sustainable their entire shipping process is. Ports which are able to demonstrate their sustainable operations are likely to catch the eye of such organizations. These ports will be able to remain competitive in the global market and support local communities by creating and sustaining employment opportunities; improving local infrastructure; improving local air and water quality; and minimizing environmental degradation to habitats and wildlife.[20].
- Adopting a strategy of sustainable development may give ports and shipping lines a competitive advantage and enhance efficiency and profitability.

RESEARCH METHODOLOGY, SCOPE & INSTRUMENTS

This is an exploratory research as it gives ideas and insights that may lead to other more detailed and representative research in the future). This research uses the qualitative approach as it depends on the secondary data collected from company website, annual company reports, company sustainability reports, specialized press, technical publications and United Nations and international sustainable development regulators' reports.

The units of analysis of this research will be organizations. Characteristics of these organizations are; (1) Global container terminal operators (the scope of this research is GTOs operating in Egypt through their local subsidiary); (2) GTOs that have large market coverage

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in the Middle East region.

DATA ANALYSIS

DP World is the chosen GTO for analyzing its sustainability practices and reporting since it has the largest presence in the Middle East region. In addition, the company has a subsidiary DP Sokhna which operates a container terminal in Egypt and has expansion plans in the near future. However, there was no sustainability disclosure concerning DP Sokhna and most of the other DP subsidiaries. DP World has worldwide recognition for its sustainability practices and disclosure as it is included in the DJSI world [21] and DJSI emerging markets in addition to being rated at the top of the S&P Hawkama ESG Index for Pan Arab region. [22]The company has received several awards for its sustainability initiatives and it is the first GTO to embark on the disclosure of carbon emission project. [23]

The analysis will depend on the most recent published reports for sustainability practices, which are DP world Australia sustainability report 2013. [24], DP world annual report 2013[25], DP World Dubai EXPO 2020, DP world UAE region presentation 2015, and sustainability information released on company website.

The data presented in the reports is analyzed and benchmarked against GRI Sustainability Reporting Guideline. These guidelines consist of basic principles and what should be included in the report which could be either an independent sustainability report or within the annual company report. DP world publishes an annual company report which entails within a section for Corporate responsibility and discloses its sustainability practices. DP World has adopted sustainability scorecard which entails 4 main pillars, Community, Environment, market Place and Safety. The sustainability Advisory committee meets quarterly to follow up on the progress indicators and set development plan and policy.

It has appointed sustainability champions team who are responsible to enhance internal and external awareness of responsibility and what it means to DP World and provide feedback to the advisory committee from stakeholders and employees.

The following tables summarize the assessment of the sustainability practices and disclosure of DP World. For some factors, the researcher states whether the reports included the criteria, parameters or they were not found in the reports. Management approach is stated as the DP World chosen strategy to achieve its sustainability goals. Performance indicators for social, environment and economic dimensions are listed as disclosed in the reports.

- Assessment of sustainability practices and reporting of DP World.

Table (3) sustainability practices and reporting of DP World

Criteria	Annual report	Sustainability report Australia	presentation
Materiality	Not included	Not included	Not included

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Stakeholder	included	Included	Not included
Sustainability context	included	Included	included
Balance	Not included	Not included	Not included
Comparability	Included	Included	included
Accuracy	included	Stated	Not included
Timeliness	included	Stated	Not included
Clarity	included	Included	Included
Boundaries	included	Included	Not included

Source: compiled by the researchers based on sustainability reports, DP world annual report, DP World Dubai EXPO 2020, DP world UAE region presentation February 2015, Company website

- Components of sustainability report (strategy and Profile) and (management approach and performance indicator)

Table (4) Components of sustainability report (strategy and Profile)

	Annual report	Sustainability report Australia	Presentation
Statement	Included	Included	Not included
Description of impact, risks & opp	Deliver accident investigation training to all terminals to enhance quality investigations and improve risk management	Include high risk & impact initiatives, reduce work place incidents, improve health & well-being of their workforce, improve their incident response & investigation	
Org. profile	Included	Included	
Scale	Included	Not included	
Awards	Not included	Not included	<ul style="list-style-type: none"> •CSR Award (SCATA) - 2014 •Dubai Awards for Sustainable Transport (DAST) (3rd Consecutive year) (RTA) – 2014 •Corporate Social

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	Annual report	Sustainability report Australia	Presentation
			Responsibility Award - Seatrade Middle East & Indian Subcontinent Awards 2013
Report parameter	Included	Included	
Report Scope & boundary	Determined	Determined	
Identify stakeholders	Included	Shareholders, customers, employees and broader public	
Governance	Included	Not included	

Source: compiled by the researchers based on sustainability reports, DP world annual report, DP World Dubai EXPO 2020, DP world UAE region presentation February 2015, Company website

Table (5) Components of sustainability report(management approach and performance indicator)

		Annual report	Sustainability report Australia	Presentation
Managem ent Approach		<p>The DP World balanced scorecard framework defines strategic pillars to be implemented across the Company and strategic priorities which are measured against KPIs.</p> <ul style="list-style-type: none"> • Strategy Implementation: • Corporate Governance • Communications: • Corporate Responsibility: 	3 years regional Safety & environment strategy, 4 pillars: Robust system, effective risk management, effective leadership and capable future.	

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		Annual report	Sustainability report Australia	Presentation
Performance Indicators	Environment	<ul style="list-style-type: none"> • 15% reduction of Kg CO2 e/Mod TEU(per Modified TEU) since 2009. • 17% reduction in Mega Joules of Energy used per Total Terminal Move since 2009. • their team at Jebel Ali (UAE) have taken steps to reduce fresh water consumption that have resulted in the annual water saving of almost 64 million litres and the installation of water recycling plants, saving approximately 75% of water consumption by the technical department workshop. 	<ul style="list-style-type: none"> • Green House – Gas emission Co2 per modified TEU 2014 (24.5) and decreased 13.4% from 2008 • Fuel consumption (litres) per modified TEU 4.14 in 2014 with a decrease.7% from 2008 • Electricity Consumption per modified TEU (Kwh) 15.73 in 2014 decreased 10.7% from 2008 • Water consumption (liters) per modified TEU 8.27 decrease 55.4%. • Waste consumption (kg) per modified TEU .80 increase 122% from 2008. 	<ul style="list-style-type: none"> • 35% Reduction in co2 emission during 2008-2013. • Energy saving– reefer tower • Sky lighting at sheds, clinic, accommodation • E-RTG’s – Electrically • E-RTG’s – Electrically operated • Water recycling & setup of in-house sewage treatment plant • PRIME Route on trailers • Gate Automation • Clean-up UAE campaign

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		Annual report	Sustainability report Australia	Presentation
	Social	<ul style="list-style-type: none"> • launched a number of e-learning initiatives and workshops to support the continued learning and development of our people. • 556 people from team received operations specific training delivered by DP World Institute. • 37% reduction in our lost time injury frequency rate since 2009. • 52% of their people have been with the Company for over five years 	<ul style="list-style-type: none"> • Safety measures • Lost time injury Frequency rate 19.5 decrease 44.1% from 2008 • All injury frequency rate 228.6 decrease 50% from 2008 • Total days lost 2430 a decrease of 31.9% 	<ul style="list-style-type: none"> • External 500 Pints of blood donated in 2013 • Ramadan activity with Beit Al Khair Society. • Dubai Autism Centre • Fazza disabled sports championship • Engagement with Al Noor to support children with special needs Internal 0 Fatalities, 4.79 Lost Time Injuries Frequency Rate During 2013 • ‘Beat the heat’ campaign • World heart day campaign

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		Annual report	Sustainability report Australia	Presentation
				<ul style="list-style-type: none"> • Safety induction to all employees, truck drivers etc. • Quit smoking campaign • Regular trucker trainings
	economic	- From automated remote controlled quay cranes to optical character recognition systems for containers, they implement technological advancements that will improve our efficiency which in turn benefits our stakeholders.	Report discussed safety and environment indicators only	<ul style="list-style-type: none"> • Transparency in information • Corporate Responsibility Award – • SCATA 2014 MRMBA – Best Performing Company in UAE

Source: compiled by the researchers based on sustainability reports, DP world annual report, DP World Dubai EXPO 2020, DP world UAE region presentation February 2015, Company website

DISCUSSION

Sustainability reporting is not only about if the piece of information is included or excluded from the report but it is deeper than that, it's more to how mature is the company in its practices and disclosure. This is the maturity level benchmark and rubric devised by Baugmatner and Ebner,2010. [26] The scale starts by the beginner level then develops to the elementary and then is upgraded to satisfying and finally the highest degree of maturity that is the sophisticated level. When DP World Australia enables two way communication that places it at the sophisticated level according to “ maturity level”.

Several measures and initiatives DP World Australia has utilized in order to carry on and

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progress in its sustainability goals. It obtained regional certification to OHSAS 18001:2007 Occupational Health and Safety Management Systems and ISO 14001:2004 Environmental. In order to manage environmental risk and save water the Australian sites changed the connection of the current maintenance septic system to sewer and made modifications to the existing wash treatment facilities. These modifications were designed by the Facilities and S&E Departments and included the installation of filtration and treatment equipment and an additional holding capacity for recycled water.

They arranged S&E week to raise awareness in the country. Best practice initiative portal page and forums. S&E Leadership Interaction Program was launched across Australia to enhance leadership commitment. Identify knowledge skills gap and modify training packages. They recognize that engagement with both internal and external stakeholders is crucial in creating a capable culture. They have achieved this through various mediums including training seminars, conferences and meetings, industry forums and active participation in legislative reform. At a supervisory level they held a supervisor training forum. The sessions allowed for open discussions on how they can achieve consistency across their terminals.

S&E issues and planning is organized through the Executive Safety and Environment Committee (ESEC). In 2013, they have explicitly mentioned their stakeholders initiatives which again reflects highest level of maturity. They have worked with our external stakeholders by: continuing to be an active member of the Stevedoring Temporary Advisory Group working with other industry representatives, Government, Regulators, Safe Work Australia and the Maritime Union

of Australia to develop a state of knowledge and provide guidance in managing risks in stevedoring and improving safety within the industry. Facilitating forums with their

customers, the shipping lines, to discuss how they can work together to improve safety whilst working aboard a vessel. Working with the Port of Melbourne on a port carbon footprint project to raise awareness of climate change issues in the port, identify opportunities for adaptation to future climate change and to assist port entities to adjust to a low carbon economy.

However, the DP World annual company report lacked the principle of materiality section which states the impact on the business and the impact on the stakeholders and justifies the topics included in the report and their priorities. More details on subsidiaries sustainability practices and disclosure should be seen within the future reports. Further feedback from the stakeholders should be stated in the report and how did the company handle these comments in future reports.

The carbon emission figures should be stated not just the percentage of decrease from the baseline year although DP World is already a leader in the initiative of carbon emission disclosure.

CONCLUSION

The container terminal industry has been dominated by GTOS such as HPH, AP MOLLER, PSA, COSCO group and DP world. These GTOS play a major role in sustaining and

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maintaining a balanced maritime transportation system. Emissions from quay and yard container handling equipment have huge impact on degrading the environment.

Through incorporating sustainable development strategic objectives within the organization's overall strategic plan, it seeks to deploy specific strategic pillars and priorities to effectively implement and achieve sustainability objectives. It requires a lot of change in the process, behavior, culture and technologies utilized. Innovation and awareness lay at the heart of the success of sustainable development.

Sustainability reporting has not become optional if the company is seeking global recognition. The degree, clarity, timeliness and accuracy of disclosure is being assessed by many international organizations and stakeholders have strong feedback with regard to sustainability practices and disclosure.

Extra attention should be directed for subsidiaries adoption of sustainability regulations and policies developed by their holding company. More GTOS are recommended to meet to set common criteria and parameters for their practices. Governmental authorities should play a bigger role in supervising and controlling the action plan of their terminal operators in order to ensure the promised sustainability measures provided during the bidding and concession agreement. More concern from the community and stakeholders towards the three dimensions of planet, people and profits is recommended in order to ensure that companies will take sustainability practices and disclosure to a higher degree of maturity level.

DP World is among the top identified GTO and transport company by sustainability indices and technical regulatory bodies. It has a strategic framework for sustainable development enhancement within all the company's portfolio. It has deployed the necessary human, physical and financial resources in order to incorporate sustainability practices and increase level of awareness internally and externally.

More focus should be directed towards materiality principle in the sustainability report and the regular timing of its publishing. Co2 emission should be stated in figures not just percentage of decrease from a baseline year.

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