

Title: Applicability of International Law in Development of Sustainable Port Policy: An Analysis of Good Practices and Future Policy of Gwadar Port

M Jahanzeb Butt,* Khadija Zulfiqar** and Yen Chiang Chang***

Abstract: With the emergence of Sustainable Development Goals (SDGs), the port governance models attempt to incorporate more sustainable practices in their operational policies. As nodes of international trade, ports play a significant role in global financial growth, and their operations are subject to environmental protection. However, the literature on port governance models is limited with the perspectives of either national economic growth or environmental hazards or ports interface with the hinterland. There is much margin in examining the role of the port in SDGs, which seems effective to accommodate the role of sustainable ports in achieving economic growth, environmental protection and social development simultaneously. The intricacy is due to the undeveloped connection between 'sustainable port' and 'SDGs.' On the other hand, good national port policies are effective and practical in harmonising port governance models and SDGs. The futuristic policy for a developing port will be further constructed to assist the international community in establishing policy for 'sustainable ports' and their influential role in global sustainability.

Keywords: Sustainable Ports, International Maritime Organization, Sustainable Development Goals, Port Governance, Sustainability.

* PhD Scholar, School of Law, Dalian Maritime University, China.

** PhD Scholar, School of Law, Dalian Maritime University, China.

*** Professor of International Law, School of Law, Dalian Maritime University, China.

1 Introduction

Recently, the Secretary-General of International Maritime Organisation (IMO), in reply to a question 'do ports need international regulation?' stated that, 'some IMO instruments extend to port operations, however, there are many opportunities to explore further and enhance the cooperation between shipping, ports and the logistics industries.'¹ In terms of international law, the IMO instruments are known as 'port State control,' which are limited to the shipping regulations, specifically regulate ships' surveys to ensure compliance of environment, labour, and safety standards.² International Convention for the Safety of Life at Sea, International Convention for the Prevention of Pollution from Ships, and International Convention on Standards of Training, Certification and Watchkeeping for Seafarers are placed for international shipping and as the port State control regulations mainly regulate ships.³

Other than the IMO instruments as mentioned earlier, the international law deals with the port and shipping interfaces, specifically, the ports' safety and security for shipping activities or particular to the port-State control for some particular violations.⁴ The only international multilateral treaty on the ports is the Convention and Statute on the International Régime of

¹ 'IMO Considers Regulating Ports' (*The Maritime Executive*) <<https://www.maritime-executive.com/article/imo-considers-regulating-ports>> accessed 22 October 2019.

² 'Procedures for Port State Control' (*Resolution A.1119(30) IMO Assembly, 1-114, 2017*) <<http://www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Assembly/Documents/A.1119%2830%29.pdf>>.

³ International Convention for Prevention of Pollution from Ships 1973 (1340 UNTS 61, 184); International Convention for the Safety of Life at Sea 1974 (came into force on 25 May 1980, (1184 UNTS 3)); International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978 (as amended in 1995, came into force on 28 April 1984, (1361 UNTS 2/1362 UNTS 2)).

⁴ Stephan Gollasch and others, 'Critical Review of the IMO International Convention on the Management of Ships' Ballast Water and Sediments' (2007) 6 *Harmful algae* 585.

Maritime Ports (Geneva Convention).⁵ The purpose of the Geneva Convention obliges the port-States to treat the ships equitably flying their flags with the facilities at ports as berthing, loading, charges and dues⁶. Apart from the Geneva Convention, there are regional agreements in quest of harmonising policies in port State control to protect the marine environment from shipping and ensure maritime safety⁷.

Secretary-General of the IMO also said that by streamlining the port policies to remove trade barriers, rethinking safety, security, and environmental protection is obliging due to the importance of the interplay between the ports and United Nations Sustainable Development Goals (SDGs).⁸ SDGs aiming towards environmental protection, social development, and economic growth simultaneously may complicate the future regulation of ports.⁹ As SDGs are overgeneralised, arising from international law, and coincided in the global epoch Anthropocene simply, their precise impact on the governance of usual business, including ports and shipping, is not addressed technically. The governance of ports under SDGs is crucial because the ports host 90% of international trade and 40% of the world's population economically and adversely impact the marine and terrestrial environments.¹⁰ Moreover, hypothetically considering the growing demands of international trade causing new ports or expansion of old ports is threatening to the space used for beaches, port cities, leisure activities and aesthetic purposes.

⁵ Convention and Statute on the International Régime of Maritime Ports 1923 (came into force on 26 July 1926, League of Nations Treaty Series (Vol 58, p 285)).

⁶ Louise de La Fayette, 'Access to Ports in International Law' (1996) 11 *The International Journal of Marine and Coastal Law* 1.

⁷ Ted L McDorman, 'Regional Port State Control Agreements: Some Issues of International Law' (2000) 5 *Ocean and Coastal Law Journal* 207.

⁸ 'IMO Considers Regulating Ports' (n 1).

⁹ Ilse R Geijzendorffer and others, 'Ecosystem Services in Global Sustainability Policies' (2017) 74 *Environmental Science & Policy* 40.

¹⁰ 'Factsheet: People and Oceans' (United Nations 2017) Available at: <https://www.un.org/sustainabledevelopment/wp-content/uploads/2017/05/Ocean-fact-sheet-package.pdf> <<https://www.un.org/sustainabledevelopment/wp-content/uploads/2017/05/Ocean-fact-sheet-package.pdf>>.

The two practical examples of port governance models harmonising the SDGs in business policies are developed under the Canada Marine Act (CMA) of Canada and the Sustainable Ports Development Act (SPDA) of Australia.¹¹ Both frameworks implement international law (soft and treaty law) in the implementation of SDGs. The regulation under the CMA governs the operations of the port in order to reduce environmental impacts.¹² SPDA governs the development of new ports or expansion of old ports to minimise the adverse impacts on the Great Barrier Reef.¹³ However, any of the frameworks do not harmonise SDGs holistically; both the frameworks address SDGs in a specific manner. As CMA focuses the environmental protection with economic growth and SDPA is for protection of the land-spaces which are threatened due to ports' development.

Given above, the complicated role of ports in the implementation of SDGs requires serious redressal. However, the literature converging on the SDGs implementation in port policies confuses the international law application with the enforcement of strong sustainability, which means that environmental protection or restoration hampers economic growth.¹⁴ On the other hand, the development or growth rationalists opines that the port operational role in economic development could be balanced with the SDGs under the global trade liberalisation policies.¹⁵ Perhaps a combination of SPDA and CMA provides a way forward if analysed with the

¹¹ Richard Gaudreau and others, 'Review of the Canada Marine Act' (Transport Canada 2002) ISBN 0-662-67359-X/Catalogue No. T22-120/2003/TP14107B, Available at: <http://www.bv.transports.gouv.qc.ca/mono/1150299.pdf> <<http://www.bv.transports.gouv.qc.ca/mono/1150299.pdf>> accessed 19 December 2019. And See, David Nicolls, Robyn Lamb and Ruby Rayner, 'Update: "Sustainable Ports Development Act 2015"' (2016) 35 Australian Resources and Energy Law Journal 3.

¹² Ramon Baltazar and Mary R Brooks, 'The Governance of Port Devolution: A Tale of Two Countries' (Citeseer 2001).

¹³ Nicolls, Lamb and Rayner (n 11).

¹⁴ L Sislian, A Jaegler and P Cariou, 'A Literature Review on Port Sustainability and Ocean's Carrier Network Problem' (2016) 19 Research in Transportation Business & Management 19.

¹⁵ Mary R Brooks, Kevin PB Cullinane and Athanasios A Pallis, 'Revisiting Port Governance and Port Reform: A Multi-Country Examination' (2017) 22 Research in Transportation Business & Management 1.

operationalisation of the international (soft and treaty) law and the literature on governance of SDGs.

Nevertheless, the effectiveness of harmonisation of diverse port policies is determined when a futuristic approach is attained, including their applicability to a national port.¹⁶ This futuristic approach on a national port contributing to economic growth while protecting the environment and preserving the natural resources can be determined by the future port of Gwadar, located in Pakistan. The port of Gwadar is under the infrastructure development phase, and its old policy framework is under reconsideration.¹⁷ China's Belt and Road Initiative most lubricated corridor China-Pakistan Economic Corridor (CPEC) routed towards the Gwadar, making it one of the busiest ports in Asia.¹⁸ Additionally, the Central Asian States, the Russian Federation and the Middle Eastern States have drawn their interests in Gwadar port as a trade route.¹⁹ Howbeit, the existing policy framework of Gwadar port entitled as the Gwadar Port Authority Ordinance (GPAO) has ignored the sustainability in totality.²⁰

A new framework for Gwadar port will be notable by harmonising sustainable port policy with CMA and SPDA. The development of the sustainable policy framework intends to assist the global ports community that is already moving towards sustainable ports.²¹ Nevertheless, the

¹⁶ Yehezkel Dror, 'Policy Analysts: A New Professional Role in Government Service' (1967) 27 *Public Administration Review* 197; Giuliano Mingardo, 'Cities and Innovative Urban Transport Policies' (2008) 10 *Innovation* 269.

¹⁷ Maham Hameed, 'The Politics of the China—Pakistan Economic Corridor' (2018) 4 *Palgrave Communications* 1; Uzair Ikram, 'Federal Minister Khusro Bakhtiar Reviews Gwadar Master Plan' (*China Pakistan Investment Corporation Global*, 31 January 2019) <<https://www.cpicglobal.com/federal-minister-khusro-bakhtiar-reviews-gwadar-master-plan/>> accessed 9 May 2020.

¹⁸ Zahid Anwar, 'Gwadar Deep Sea Port's Emergence as Regional Trade and Transportation Hub: Prospects and Problems' [2010] *Journal of Political Studies* <<https://go.gale.com/ps/i.do?p=AONE&sw=w&issn=19941080&v=2.1&it=r&id=GALE%7CA253609189&sid=googleScholar&linkaccess=abs>> accessed 10 May 2020.

¹⁹ Sajjad Ashraf, 'Gwadar Will Be the Economic Funnel for the Region, Op-Ed, Page - 24.' (*Gulf News*, 24 May 2017) <<https://gulfnews.com/opinion/op-eds/gwadar-will-be-the-economic-funnel-for-the-region-1.2032494>> accessed 21 July 2019.

²⁰ Faisal Chaudhry, 'Perspectives from Balochistan's Natural Gas Fields and the Port City of Gwadar' [2014] *Globalization, Development and Security in Asia - The Political Economy of Energy*.

²¹ Verhoeven, 'World Ports Sustainability Program Started' (*International Association of Ports and Harbours*, 23 March 2018) <<https://www.iaphworldports.org/news/4718>> accessed 19 November 2019.

literature is not as organised to determine the importance of a sustainable port for global sustainability.²² There are sets of asymmetric ideas and notions lacking uniformity, posing a hurdle to suggest paths in harmonising policies.

Therefore, in its first part, this research will revisit the literature in reckoning the role of a sustainable port in SDGs. The corresponding parts are with analysis of the applicability and operationalisation of the international law for sustainable ports and good national practices contributing to the achievement of SDGs. The following part analyses the policy of Gwadar Port. It provides strong recommendations for it in following the international law and competent practices (CMA and SPDA) and with the foresight of implementing SDGs.

1 The Role of Sustainable Port in SDGs

The fundamental obstacle emerges with the commonly accepted definition of a 'sustainable port,' which is the one provided by the American Association for Port Authorities (AAPA). AAPA defines a sustainable port as 'business strategies and activities that meet the current and future needs of the port and its stakeholders while protecting and sustaining human and natural resources.'²³ While reviewing from the perspective of SDGs, this definition lacks a complete design of a sustainable port. This definition focuses the business strategically, which depicts limited to the port operational and management policies. Although it is urging to formulate policies to protect and sustain humans and natural resources, it seems that the definition prioritises the needs of the ports and their stakeholders. The predicament is with 'business strategies' because it does not include environmental protection and resource preservation

²² Dalwon Kang and Sihyun Kim, 'Conceptual Model Development of Sustainability Practices: The Case of Port Operations for Collaboration and Governance' (2017) 9 Sustainability 2333.

²³ Gul Denktas-Sakar and Cimen Karatas-Cetin, 'Port Sustainability and Stakeholder Management in Supply Chains: A Framework on Resource Dependence Theory' (2012) 28 The Asian Journal of Shipping and Logistics 301.

policies.²⁴ Whereas, preservation of natural resources requires effective and efficient port operational policies to mitigate ports' expansion.²⁵ Likewise, environmental protection is a broad phenomenon, and due to port operations, the environment of port cities (major stakeholder in ports) is compromised.²⁶

AAPA's definition is with a rationalist approach, which conceives that a sustainable port has nothing to do with SDGs or economic growth must be prioritised over SDGs. Notwithstanding, a comprehensive view of the current and upcoming needs of the port and its stakeholders are novel to support an argument that 'a sustainable port is necessary for the implementation of SDGs.' As the principal economic stakeholder in port, the State provides policy mechanisms to gain maximum through its operations.²⁷ The economic growth of any State in terms of industrialisation and trade development heavily relies on effective port operational management. More precisely, the State authorities regulating ports, the private sector and the port cities are primary stakeholders seeking swift employment, entrepreneurship, business and trade opportunities.²⁸

Besides economic growth, the stakeholders and port cities valiantly demand a clean environment, as the port operations substantially impact the air, terrestrial and oceans adversely.²⁹ As a matter of cultural and national recognition, heritage sites are among the other

²⁴ Andreas E Fousteris and others, 'The Environmental Strategy of Businesses as an Option under Recession in Greece' (2018) 10 Sustainability 4399.

²⁵ John RM Gordon, Pui-Mun Lee and Henry C Lucas Jr, 'A Resource-Based View of Competitive Advantage at the Port of Singapore' (2005) 14 The Journal of Strategic Information Systems 69.

²⁶ Will Focht, 'Governance for Sustainability' (2008) 17 Environmental Politics 131. See also, Magdalena Klopott, 'Restructuring of Environmental Management in Baltic Ports: Case of Poland' (2013) 40 Maritime Policy & Management 439.

²⁷ GS Dwarakish and Akhil Muhammad Salim, 'Review on the Role of Ports in the Development of a Nation' (2015) 4 Aquatic Procedia 295.

²⁸ Zhen Chen, 'Research on the Interaction between Innovation and Port-City Economic System: A Case from China' (2015) 2015 Discrete Dynamics in Nature and Society 9.

²⁹ Sulan Chen and Juha I Uitto, 'Governing Marine and Coastal Environment in China: Building Local Government Capacity Through International Cooperation' [2003] China Environment Series 67; Klopott (n 26).

interests of any State.³⁰ These sites are threatened due to port expansion and the development of a new port. Additionally, the waterfront is a leisurely interest, not limited to a State but also the port cities. Hence, summing up the needs of the port and its stakeholders construe a connexion between 'sustainable port policy' and 'policies for national economic, environmental and intergenerational sustainability.'³¹ The diverse interests of the port stakeholders are for the implementation of SDGs. However, the literature misconceives a complete visionary and integrated policy for 'sustainable port' from all aspects.

The literature developed by the rationalists focusing on economic growth also misinterprets the development needs of the stakeholders. As with the emergence of SDGs, global economic growth is not limited to finance; it extends to the social development of humans.³² Similarly, environmental protection calls to protect the environment beyond human needs as an ecosystem and natural habitat.³³ Moreover, intergenerational sustainability in terms of preservation of natural resources forwards energy conservation and conservancy of land spaces.³⁴ As the land-spaces fronting, the oceans are primarily natural resource endangered due to port expansion or development.

An inclusive visual of SDGs, seeking its output from a 'sustainable port,' is to balance economic growth with environmental protection and resource preservation,³⁵ as ports are a point of customs collection contributing to the economy of a State, a border area of immigration control

³⁰ David Pinder, 'Seaport Decline and Cultural Heritage Sustainability Issues in the UK Coastal Zone' (2003) 4 *Journal of Cultural Heritage* 35.

³¹ Chen and Uitto (n 29); Vitalii Nitsenko and others, 'Business Model for a Sea Commercial Port as a Way to Reach Sustainable Development Goals' [2017] *Journal of Security and Sustainability Issues* 155.

³² Sudhir Anand and Amartya Sen, 'Human Development and Economic Sustainability' (2000) 28 *World development* 2029.

³³ Stephen J Jordan and others, 'Accounting for Natural Resources and Environmental Sustainability: Linking Ecosystem Services to Human Well-Being' (2010) 44 *Environmental Science & Technology* 1530.

³⁴ Brian Barry, 'Sustainability and Intergenerational Justice' (1997) 44 *Theoria* 43.

³⁵ Nitsenko and others (n 31).

susceptible for the security, and the area connecting intermodal transportation networks.³⁶ Thus, SDGs' harmonisation goes beyond when ports interplays with economic growth, environmental protection, and security simultaneously.

Surprisingly, the literature is not covering the security aspect influentially because it is a grave national concern that cannot be harmonised and not tethered with SDGs. Conversely, in a few developed States, the port security policies are integrated with economic growth, promoting cooperation and coordination for good port performance through swift utilisation of advanced technology.³⁷ These integrated policies forward a mechanism of collaboration among security and regulatory authorities.³⁸ However, taking account of the port security policies in harmonisation for SDGs is quite complicated due to diverse national security arrangements.³⁹ A way forward may be to adopt technological means as utilised in a few developed States.

On the other hand, environmental protection and resource preservation, both are observed as an obstacle while balancing it with economic development.⁴⁰ Moreover, at national levels, and more precisely in developing States, coupling ports with global sustainability is invasive for economic growth.⁴¹ If tethered with strict environmental compliance, the influx of transportation and trade activities at ports hinders the economic activity.⁴² Likewise, hitching

³⁶ Gregory Parnell and others, 'Decision Analysis Tools for Safety, Security, and Sustainability of Ports and Harbors' In: Linkov I., Wenning R.J., Kiker G.A. (Eds) *Managing Critical Infrastructure Risks*. NATO Science for Peace and Security Series C: Environmental Security' [2007] *Managing Critical Infrastructure Risks* 245.

³⁷ Tahazzud Hossain, Michelle Adams and Tony R Walker, 'Sustainability Initiatives in Canadian Ports' (2019) 106 *Marine Policy* 103519.

³⁸ Khalid Bichou, 'Risk-Based Cost Assessment of Maritime and Port Security. In: Bell M., Hosseinloo S., Kanturska U. (Eds) *Security and Environmental Sustainability of Multimodal Transport*. NATO Science for Peace and Security Series C: Environmental Security' [2010] *Security and Environmental Sustainability of Multimodal Transport* 183.

³⁹ DE Onwuegbuchunam, 'Assessing Port Governance, Devolution and Terminal Performance in Nigeria' (2018) 2 *Logistics* 6; Marisa A Valleri, Maria Lamonarca and Paola Papa, 'Chapter 6 Port Governance in Italy' (2006) 17 *Research in Transportation Economics* 139, 6.

⁴⁰ Jong-Kyun Woo, Daniel SH Moon and Jasmine Siu Lee Lam, 'The Impact of Environmental Policy on Ports and the Associated Economic Opportunities' (2018) 110 *Transportation Research Part A: Policy and Practice* 234.

⁴¹ AD Couper, 'Environmental Port Management' (1992) 19 *Maritime Policy & Management* 165.

⁴² Bart W Wiegman and Harry Geerlings, 'Sustainable Port Innovations: Barriers and Enablers for Successful Implementation' (2010) 3 *World Review of Intermodal Transportation Research* 230.

the port development or expansion with resource preservation delays trade and economic activity.⁴³

Given the problems with ports and SDGs implementation, if the literature on SDGs governance is formulated in conjunction with the corporate regulatory practices will maintain the balance.⁴⁴ As the liberalisation of international trade regulation demands to remodel of port fiscal policies.⁴⁵ The model of port privatisation under the governmental authority's regulatory framework allowing private sector investment is beneficial for economic growth and the implementation of SDGs.⁴⁶ Such harmonisation will be a challenge; it seeks sufficient input from each sector or stakeholder of the port, as the ports evolve around the environment, employment, safety, trade, transportation, shipping and security regulations, all at the same time.⁴⁷ These regulations with the two exemplary policies conceivably determined by opting two phases of 'sustainable port,' i.e. i) development of a sustainable port and ii) operations of the sustainable port.

Policy for port development initially calls to avoid port expansion, but if there is no other resort, it seeks mitigation of the risk to natural resources. A policy for better port operations is to improve its management and security, cater to investment, trade and employment opportunities in line with environmental protection and social development. Both the policies are determined in the next section with the interplay of international law. The guidelines and programmes of

⁴³ CA Schipper, H Vreugdenhil and MPC de Jong, 'A Sustainability Assessment of Ports and Port-City Plans: Comparing Ambitions with Achievements' (2017) 57 *Transportation Research Part D: Transport and Environment* 84.

⁴⁴ KarenL Higgins, 'Economic Growth and Sustainability – Are They Mutually Exclusive?' (*Elsevier Connect*, 16 May 2013) <<https://www.elsevier.com/connect/economic-growth-and-sustainability-are-they-mutually-exclusive>> accessed 7 October 2019.

⁴⁵ Mary R Brooks, 'Port Governance as a Tool of Economic Development: Revisiting the Question' [2016] *Dynamic Shipping and Port Development in the Globalized Economy* 128.

⁴⁶ A Grech and others, 'Guiding Principles for the Improved Governance of Port and Shipping Impacts in the Great Barrier Reef' (2013) 75 *Marine Pollution Bulletin* 8.

⁴⁷ Marcella De Martino, Fabio Magnotti and Alfonso Morvillo, 'Port Governance and Value Creation in the Supply Chain: The Case of Italian Ports' [2019] *Case Studies on Transport Policy* <<http://www.sciencedirect.com/science/article/pii/S2213624X18303626>> accessed 16 November 2019.

the various international organisations are previewed to examine a holistic vision of a 'sustainable port.'

2 Policy for Development of a Sustainable Port

2.1 Operationalisation and Application of International Law for Development of Sustainable Ports

The United Nations Conference on the Human Environment (Stockholm Declaration), recognising intergenerational sustainability, urges to ratify the policies to mitigate the risk of exterminating natural resources.⁴⁸ Similarly, the Agreement Establishing the World Trade Organisation (Marrakesh Agreement) maintains this intergenerational balance as 'allowing for the optimal use of the world's resources following the objective of sustainable development.'⁴⁹ Moreover, principle 12 of the United Nations Declaration on Environment and Development (RIO Declaration) states that 'trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.'⁵⁰ This purview of SDGs under international law aggregates the policies for development and the preservation of natural resources, balancing economic growth with environmental protection.

Establishing port policies and governance models accommodating the international law for SDGs endorses that the State authorities avoid additional land allocation to ports. The maximum economic gain to be achieved through the existing land spaces of port and connected logistics. While defying the earlier claims that SDGs hinders economic growth, it is

⁴⁸ Declaration of the United Nations Conference on the Human Environment 1973 (UN Doc A/Conf48/14/Rev 1).

⁴⁹ WTO Agreement: Marrakesh Agreement Establishing the World Trade Organization 1995 15 April 1994.

⁵⁰ United Nations Conference on Environment and Development/Rio Declaration on Environment and Development 1992 (UN Doc A/CONF151/26 (vol I)).

acknowledged that a sustainable port policy under international law is not a barrier to economic development. Such policy encourages 'more utilisation of renewable resources and extracting best from non-renewable resources .' It intends to constitute balanced instruments ⁵¹.

The sustainable policies balancing is the *modus operandi* of international treaty law, which can also be observed through the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol.⁵² The UNFCCC and Kyoto Protocol encourage eco-friendly cheap energy to minimise the utilisation of existing energy resources.⁵³ Though the IMO acceleration of UNFCCC through Sulphur 2020 to reduce the emissions is still problematic due to the extra energy requirements of ships.⁵⁴ On the other hand, eco-friendly electric rail and road transport connected to ports has significantly reduced the monetary amount and emissions.⁵⁵

A sustainable port policy according to the objectives of the UNFCCC and Kyoto Protocol is constituted to preserve energy and promote eco-friendly. Although such energy transformation for States is challenging, the balance for intergenerational sustainability is obligatory. It is substantiated through the International Court of Justice opinion in *Gabcikovo – Nagymaros Case* as "Owing to new scientific insights and a growing awareness of the risks for mankind - for present and future generations of pursuit of such interventions at an unconsidered and

⁵¹ Couper (n 41).

⁵² United Nations Framework Convention on Climate Change 1992 (came into force 21 March 1994, (1771 UNTS 107)); Kyoto Protocol to the United Nations Framework Convention on Climate Change 1997 (came into force on 16 February 2005, (UN Doc FCCC/CP/1997/7/Add1, Dec 10, 1997)).

⁵³ Ron Benioff and others, 'Strengthening Clean Energy Technology Cooperation under the UNFCCC: Steps toward Implementation' (National Renewable Energy Lab(NREL), Golden, CO (United States), <https://www.eldis.org/document/A59713> 2010) NREL/TP-6A0-48596 <<https://www.eldis.org/document/A59713>>; Kyoto Protocol to the United Nations Framework Convention on Climate Change; United Nations Framework Convention on Climate Change.

⁵⁴ Mike King, 'Shipping Coalition Takes Aim at IMO 2020 Fuel Preparations' (*Freight Waves*, 11 September 2019) <<https://www.freightwaves.com/news/shipping-coalition-takes-aim-at-imo-2020-fuel-preparations>> accessed 16 November 2019.

⁵⁵ Grigore Danciu and others, 'Ecological Transportation System Based on Light Electric Vehicles', *2011 7th International Symposium on Advanced Topics In Electrical Engineering (ATEE)* (Institute of Electrical and Electronics EngineersIEEE 2011).

unabated pace, new norms and standards have been developed, outlined in a great number of instruments during the last two decades. Such new norms have to be considered, and such new standards are given proper weight, not only when States contemplate new activities but also when continuing with activities begun in the past. This need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development."⁵⁶

There are two subsequent challenges of the port's stakeholders and substantial harm to the State's economic development. One is the heritage preservation to safeguard and conserve the national identity and history, and the other is the protection of waterfronts of the port cities. The heritage sites and waterfronts are tourist attraction and require management and rehabilitation, conceivably a cost. Conversely, these sites are valuably contributing to the local economy, though their economic impacts compared to trade are less, notwithstanding, their educational importance is far high as compared.⁵⁷

Therefore, the Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention) distinctly protects the heritage for learning and experiencing history.⁵⁸ In addition to this, Article 2 of the World Heritage Convention defines cultural heritage to cover the protection of aesthetic waterfronts to port cities. Article 2 of the World Heritage Convention states' natural features consisting of physical and biological formations or groups of such formations, which are of outstanding universal value from the

⁵⁶ *Case Concerning the Gabčíkovo-Nagymaros Dam (Hungary v Slovakia)* (1997) (1998) Rep 37 LLM 162 (International Court of Justice).

⁵⁷ Marcin Poprawski, 'Intergenerational Transmission of Values and Cultural Sustainability: The Cultural Participation of Local, Small Town Communities in Poland' (2016) 20 *Law, Social Justice & Global Development* 1; Donovan D Rypkema, 'Heritage Conservation and the Local Economy' (*Global Urban Development Magazine*, 4, 1, 1, August 2008) <<http://www.globalurban.org/GUDMag08Vol4Iss1/Rypkema.htm>> accessed 15 November 2019.

⁵⁸ Convention Concerning the Protection of the World Cultural and Natural Heritage 1972 (came into force on 17 December 1975 (1037 UNTS 151)).

aesthetic or scientific point of view.⁵⁹ Hence, operationalising the port policies with the provisions of the World Heritage Convention impulses to minimise the risk to heritage sites and waterfronts of the port cities.

2.2 Sustainable Ports Development Act (SDPA) of Australia

SPDA is a competent national policy forwarding a path towards economic growth while protecting the environmental, social and cultural values of the Great Barrier Reef World Heritage Area.⁶⁰ It prioritises efficient and effective utilisation of existing ports instead of constructing new ports or expanding old ports.⁶¹ Additionally, it recognises the diverse challenges of culture and tourism, besides business, environmental and social policies concerning port development.⁶²

SPDA reconciles the planning, development, economic, environmental, coastal and forestry legislation of both the central (Australia) and provincial (Queensland) governments to ensure intergenerational sustainability (as referred to in Table – I).⁶³ The reconciliation of diverse legislation allows the regulatory authorities to work symbolically. The master plan for a new port or expansion of the old port is drafted by the State Development Minister, Coordinator-General of the Department of State Development, and Public Work Organisation, involving the relevant local government and port authority. The local government and port authorities disclose the environmental and cultural impacts due to the development of ports. The master plans incorporate a strategic vision with objectives, outcomes and environmental management

⁵⁹ Grech and others (n 46).

⁶⁰ Simona Duke, 'Port Sustainability Leadership in Tropical Australia' [2017] *Australasian Coasts & Ports 2017: Working with Nature* 416.

⁶¹ GBRMPA, 'Planning for Priority Ports: For Public Consultation' [2017] Great Barrier Reef Marine Park Authority Townsville.

⁶² Antra Hood and Matthew Roach, 'Complex Industrial Uses, Community Engagement and Environmental Issues-Challenges of Planning for Ports in Queensland' [2015] *Australian Environment Review* 1.

⁶³ Sustainable Ports Development Act 2015 (2015 Act No 28, Enforced by Queensland Government, 2015, <https://www.legislation.qld.gov.au/>) 1.

framework for ports' development. Though the master plan follows all the sustainability measures still, it seeks further consultation from the head of departments in any case of risk.⁶⁴

<i>Regulatory Authority</i>	<i>Title of the Legislation</i>	<i>Year of Enactment</i>
<i>State Development and Public Work Organisation</i>	Sustainable Ports Development Act	2015
	Economic Development Act	2012
	Planning Act	2016
<i>Department of Environment and Heritage Protection</i>	Great Barrier Reef Marine Part Act	1975
	Forestry Act	1959
	Aboriginal and Torres Strait Islander Communities (Justice, Land and Other Matters) Act	1984
	Environmental Protection Act	1994
	Aboriginal Cultural Heritage Act	2003
	Marine Parks Act	2004

⁶⁴ *ibid.*

<i>Department of the Environment and Energy (Central Department)</i>	The Environment Protection and Biodiversity Act (Central Legislation)	1999
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Table – I (Legislation of Queensland, Australia for Sustainable Ports Development)

Source: Department of Transport and Main Roads, Queensland Government, Australia (<https://www.tmr.qld.gov.au/business-industry/Transport-sectors/Ports/Sustainable-port-development-and-operation/Sustainable-Ports-Development-Act-2015>)

The Department of Environment and Heritage Protection of the Queensland government and the Department of Environment and Energy of the Australian government collaborates for compliance and enforcement of the Forestry Act, Aboriginal and Torres Strait Islander Communities (Justice, Land and Other Matters) Act, Environmental Protection Act (Queensland government legislation), Aboriginal Cultural Heritage Act, Marine Parks Act, and Environment Protection and Biodiversity Act (Australian government legislation).⁶⁵

The authorities further coordinate for the compliance to maintain and protect the forests, underwater and land-based cultural heritage and other natural resources while the development of ports. This compliance is mandated under the Forestry Act, Environmental Protection Act, Environment Protection and Biodiversity Act, Marine Parks Act, Aboriginal Cultural Heritage Act and Aboriginal, and Torres Strait Islander Communities (Justice, Land and Other Matters) Act.⁶⁶

⁶⁵ Nicolls, Lamb and Rayner (n 11).

⁶⁶ Sustainable Ports Development Act.

The Great Barrier Reef as an underwater cultural heritage site was brought to the limelight by the effort of UNESCO,⁶⁷ and its influence on the Australian and Queensland governments lead them towards the policy framework of SPDA. The policy framework in the form of SPDA had configured the totality of international law to develop sustainable ports contributing to SDGs. The reconciliation of environmental and cultural laws to protect the environment and preserve natural resources and cultural heritage is quite beneficial in this single policy. The aim of the SPDA for optimum utilisation of existing ports and to avoid construction of new ports is in line with the Stockholm Declaration, RIO Declaration and the World Heritage Convention.

3 Policy for Sustainable Port Operations

3.1 International Trade Liberalisation and its Impact on Port Policies

Since 1990, international trade liberalisation policies are the presage of national economic development.⁶⁸ The economic growth not only for State development is achieved, but the influential multilateral and bilateral trade and investment treaties and practices had also substantively reduced poverty.⁶⁹ As the Marrakesh Agreement unfolding the boundless opportunities of international trade 'recognises the relations in the field of trade and economic endeavour should be conducted to raise standards of living, ensure full employment and a large and steadily growing volume of real income and effective demand, and expanding the production of and trade in goods and services.'⁷⁰

The evolutionary trade liberalisation policies had enabled the World Bank and the United Nations Conference on Trade and Development (UNCTAD) to assist the States in pacing the

⁶⁷ Grech and others (n 46).

⁶⁸ Sara Dillon, 'A Farewell to Linkage: International Trade Law and Global Sustainability Indicators' (2002) 55 Rutgers Law Review 87.

⁶⁹ Rafael Leal-Arcas, 'New Frontiers of International Economic Law: The Quest for Sustainable Development' (2018) 40 University of Pennsylvania Journal of International Law 83.

⁷⁰ WTO Agreement: Marrakesh Agreement Establishing the World Trade Organization.

port policies. States for their port policymaking are assisted by the World Bank's 'Port Reforms Toolkit (WPRT)' and UNCTAD's 'Port Management Series (PMS)' to improve its competitiveness in the global market.⁷¹

WPRT stipulates the States to liberalise its trade and corporate policies about port operations. WPRT suggests opting Public-Private-Partnership (PPP), a corporate policy model of collaboration between the port authorities and the public/private corporations to ensure free movement of goods, services and capital.⁷² A comparable elucidation is observed under the PMS; it recommends listing the statutory powers of investment, finance, tariff, licensing and legal to the port authorities or a central authority (Port and Shipping Commission) regulating the ports.⁷³ PMS suggests that the devolution of powers to port authorities increases the private sector involvement influencing the business market positively. The port's competitiveness is maintained if the policies are constructed under the greater integration of the diverse public-private sectors. The policy entailing and assimilating the port-city transportation networks is beneficial for the interests of both.

PPP model aims to maximise the port operational efficiency, as the inclusive functions of ports from the formation of financial, labour, logistics and other arrangements to its execution are carried independently by the port authorities and private sector.⁷⁴ The State authorities under the PPP model works as a regulator and supervises port authorities for compliance. The private sector enhances the capabilities of port operationalisation because it solely focuses on trade

⁷¹ AKC Beresford and others, 'The UNCTAD and WORKPORT Models of Port Development: Evolution or Revolution?' (2004) 31 *Maritime Policy & Management* 93; 'Port Reform Toolkit | Module 4, Legal Tools for Port Reforms' (World Bank 2007) <<http://www.worldbank.org/transport/ports/toolkit/>>.

⁷² Zengqi Xiao and Jasmine Siu Lee Lam, 'Willingness to Take Contractual Risk in Port Public-Private Partnerships under Economic Volatility: The Role of Institutional Environment in Emerging Economies' (2019) 81 *Transport Policy* 106.

⁷³ 'Port Management Series (Volume - 4)' (United Nations Conference on Trade and Development 2016) UNCTAD/DTL/KDB/2016/1 <<https://unctad.org/en/Pages/DTL/TTL/Port-Management-Series.aspx>>.

⁷⁴ *ibid.*

influx.⁷⁵ The port's land is usually leased to the private sector for infrastructure development and operationalisation under a contract with the State. Customs and immigration authorities of the State cooperate with the private sector in enhancing the logistics and immigration operations to maximise economic benefits.⁷⁶

3.2 International Environmental Treaty Law and ISO 14001 Environmental Management Systems

Under the PPP model, the 'ISO 14001 Environmental Management Systems (EMS) – specifications with guidance for use gives general guidance on maintaining a satisfactory quality of environmental provision' at ports.⁷⁷ The EMS is a set of internationally recognised standards to minimise environmental risk by providing mechanisms for waste management, reducing pollution and improving energy efficiency. The elements of EMS provide steps to legislate, plan, implement, monitor, audit and review the environmental management policy.⁷⁸ Primarily, EMS is a mechanism to harmonise port environmental management policy according to regional or national environmental legislation.⁷⁹

As internationally ratified standards, the purpose of EMS is to cohabitate with international environmental treaty law.⁸⁰ Although the international environmental treaty law is fragmented, its integration is the only way to harmonise the environmental protection policy at ports.⁸¹ The interaction of port operations with air, marine and terrestrial ecosystems, all at the same time,

⁷⁵ 'Port Reform Toolkit | Module 4, Legal Tools for Port Reforms' (n 71).

⁷⁶ Khalid Bichou and Richard Gray, 'A Logistics and Supply Chain Management Approach to Port Performance Measurement' (2004) 31 *Maritime Policy & Management* 47.

⁷⁷ Jasmine Siu Lee Lam and Theo Notteboom, 'The Greening of Ports: A Comparison of Port Management Tools Used by Leading Ports in Asia and Europe' (2014) 34 *Transport Reviews* 169.

⁷⁸ Nasrin Asgari and others, 'Sustainability Ranking of the UK Major Ports: Methodology and Case Study' (2015) 78 *Transportation Research Part E: Logistics and Transportation Review* 19.

⁷⁹ Haoliang Yao, 'Lessons Learned from ICOM Initiatives in Canada and China' (2008) 36 *Coastal Management* 458.

⁸⁰ Jennifer Clapp, 'The Privatization of Global Environmental Governance: ISO 14000 and the Developing World' (1998) 4 *Global Governance* 295.

⁸¹ GF Maggio, 'Inter/Intra-Generational Equity: Current Applications under International Law for Promoting the Sustainable Development of Natural Resources' (1996) 4 *Buffalo Environmental Law Journal* 161.

are addressed through various international environmental treaties. Such as the air pollution emerging from port operations, intermodal transportation network and shipping activities to be controlled and minimised under the specific application of the UNFCCC and its Kyoto Protocol.⁸² The provisions of UNFCCC and the Kyoto Protocol aiming to control and reduce emissions by incentivising, subsidising and promoting renewable energy are noteworthy for port operations.

Similarly, a particular application of the United Nations Convention on Law of the Sea (UNCLOS) to take precautionary measures to prevent marine pollution is valuable for port operations.⁸³ This general endorsement of UNCLOS specifies installing such machinery at ports that minimise the marine environment's risk. More precisely, the Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matters (London Convention) and its London Protocol prevents the deliberate disposal of waste due to ports' operations.⁸⁴ The London Convention and London Protocol are constituted to ensure marine environmental protection from dumping through any land-based source.

3.3 United Nations Environment Programme (UNEP) Initiatives under International Environmental Treaty Law

3.3.1 Key Principles for Port and Harbour Development

UNEP, with the International Association of Dredging Companies, the International Association of Ports and Harbours and the Global Programme for Action Coordination Office,

⁸² Kyoto Protocol to the United Nations Framework Convention on Climate Change; United Nations Framework Convention on Climate Change.

⁸³ United Nations Convention on Law of the Sea 1982 (came into force on 16 November 1994, (1833 UNTS 397)).

⁸⁴ 1996 Protocol to the London Convention 1996 (came into force on 24 March 2006, 36 ILM 1 (1997)); Convention for Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (26 UNTS 2403).

had developed 'Key Principles for Port and Harbour Development.'⁸⁵ These principles comprehensively envision the mechanisms to enact high standards of environmental performance and conduct impact assessment before developing or expanding ports. Further, assist the States in developing such port policies balancing the environmental protection with the port operations and expansion.

The basic 'precautionary' principle as provided by the Convention on Biological Diversity is incorporated to conduct impact assessment before the development and operations of ports.⁸⁶ Protection of the environment is endorsed in conformity with the Convention on Biological Diversity as an ecosystem. The London Convention, London Protocol, Montreal Convention on Land-Based Sources of Pollution, Montreal Guidelines for treatment of dredged material and other pollution sources, and the Resolution of a Dredged Material Assessment Framework are re-endorsed to protect the marine environment.⁸⁷

These Principles recalls the integration of the rural/urban development (port cities) and the socio-cultural aspects of port development and operations. The impact on air pollution is also framed, but generally, and the focus remains on marine environmental protection. It is recommended to utilise environmentally sound technologies and implement environmental management practices while conducting dredging, cargo handling, infrastructure, and superstructure development.

⁸⁵ 'Key Principles for Port and Harbour Development' (*UNEP/GPA Coordination Office*, 24 November 2012) <<https://dredging.org/documents/ceda/downloads/environment-keyprinciples%20.pdf>>.

⁸⁶ Convention on Biological Diversity 1992 (came into force on 29 December 1993, (1760 UNTS 79)); 'Environmental Considerations for Ports and Harbour Development' (World Bank/United Nations Environmental Programme, Available at: <https://iadc-dredging.com/publication/key-principles-port-harbor-development/> 1990) Technical Paper no. 126 <<https://iadc-dredging.com/publication/key-principles-port-harbor-development/>> accessed 18 November 2019.

⁸⁷ Gregory P Tsinker, 'Port (Harbor) Elements: Design Principles and Considerations' in Gregory P Tsinker (ed), *Handbook of Port and Harbor Engineering: Geotechnical and Structural Aspects* (Springer US 1997) <https://doi.org/10.1007/978-1-4757-0863-9_2> accessed 20 November 2019; 'V.I.24 Montreal Guidelines for the Protection of the Marine Environment Against Pollution from Land-Based Sources (With Annexes)' [2015] *International Law & World Order: Weston's & Carlson's Basic Documents*.

3.3.2 Sustainable Global Clean Port Hub Programme

Since 2012, the UNEP is working to harmonise the policies controlling emissions at the port under its 'Global Clean Port Hub' programme.⁸⁸ This programme focuses on air pollution under the specific implementation of UNFCCC and Kyoto Protocol within the State jurisdiction. The programme assists the States to develop a single policy framework integrating air pollution sources, such as intermodal transportation, cargo-handling equipment, and shipping. This UNEP's programme has comprised global partnerships with multilevel stakeholders at various national and regional levels.⁸⁹ This programme also forwards fiscal and financial guidelines to promote environment-friendly transportation networks. Those guidelines provide a mechanism for sponsoring, financing and subsidising renewable energy in transport machinery and integrates with trading policies.

3.4 Canada Marine Act

The ports of Canada are an excellent example of endeavouring the trade liberalisation policies, as the port authorities are a body corporate, incorporated without share capital and are financially self-sufficient. The ports of Canada are under the direct control of the central government, with few devolve functions of the provincial governments.⁹⁰ CMA is a mechanism to involve the private sector under the regulatory control of the port authorities under the 'letter patent'.⁹¹ The ports authorities are liable to issue financial and trade indexes for analysis and feedback by the Ministry of Transportation in the province's centre and Ministry of Finance.⁹²

⁸⁸ 'Global Clean Ports | UNEP - UN Environment Programme' <<https://www.unenvironment.org/explore-topics/transport/what-we-do/global-clean-ports>> accessed 1 November 2019.

⁸⁹ UN Environment, 'Why Does Global Clean Ports Matter?' (*UNEP - UN Environment Programme*, 26 July 2017) <<http://www.unenvironment.org/explore-topics/transport/what-we-do/global-clean-ports/why-does-global-clean-ports-matter>> accessed 17 November 2019.

⁹⁰ MC Ircha, 'Port Strategic Planning: Canadian Port Reform' (2001) 28 *Maritime Policy & Management* 125.

⁹¹ Gaudreau and others (n 11).

⁹² Tony R Walker and others, 'Harbour Divestiture in Canada: Implications of Changing Governance' (2015) 62 *Marine Policy* 1.

There are 14 board of directors in each port authority, one nominated by the Minister, one from the local authority, one from the Province and remaining with the consultation between the three nominated.⁹³

The port authorities of Canada and private/public corporations bear the regulatory burden under the specific guidelines, rules, regulations or frameworks established by the regulatory authorities.⁹⁴ The regulatory authorities under this model compel the port authorities and public/private corporations to issue interim reports, or these reporting practices are conducted jointly. The Canadian ports have enacted the EMS system, and it derives its policies from the national and provincial legislation (as referred to in Table – II).⁹⁵ Transport Canada is the transportation agency that manages the transport and ensures compliance with environmental regulations. Transport Canada works under the Canada Marine Act and Canada Shipping Act to regulate shipping and other transportation.⁹⁶

The Department of Fisheries and Oceans Canada is responsible for fisheries, habitat, marine environment and aquaculture protection under the Oceans Act, Fisheries Act, Canada National Marine Conservation Areas Act, and Coastal Fisheries Protection Act.⁹⁷ The Department of Fisheries and Oceans Canada, Environment and Climate Change Canada and the Port Authorities collaborate in regulating the marine environment from the threats of port operations. Precautionary measures are endorsed for protecting the marine environment as per the obligations of the UNCLOS, London Convention and London Protocol, including the guidelines of UNEP's under the Key Principles for Port and Harbour Development.

⁹³ Canada Marine Act 1998 (SC 1998, c 10, Revised 28-08-2019, Enforced by Canadian Parliament, 1998).

⁹⁴ Mary R Brooks, 'The Governance Structure of Ports' (2004) 3 Review of network economics 168.

⁹⁵ Rafael Sardà and others, 'A Proposed Ecosystem-Based Management System for Marine Waters: Linking the Theory of Environmental Policy to the Practice of Environmental Management' (2014) 19 Ecology and Society.

⁹⁶ Hossain, Adams and Walker (n 37).

⁹⁷ Canada Marine Act.

<i>Regulatory Authority</i>	<i>Title of the Legislation</i>	<i>Year of Enactment</i>
<i>Transport Canada and Port Authorities</i>	Canada Marine Act	1998
	Port Authorities Operations Regulations	2000
	Canada Shipping Act	2001
	Canada Transportation Act	1996
	Canada Environmental Protection Act	1999
<i>Environment and Climate Change Canada</i>	Canada Waters Act	1985
	Canada National Marine Conservation Areas Act	2002
<i>Department of Fisheries and Oceans Canada</i>	Coastal Fisheries Protection Act	1985
	Oceans Act	1996

Table – II (Legislation of Canada for Sustainable Port Operations)

Source: Justice Laws Website, Government of Canada (<https://laws-lois.justice.gc.ca/>)

Air quality is monitored, maintained and protected through a collaborative mechanism among the port authorities and Transport Canada.⁹⁸ The port authorities with Transport Canada and private corporations promote eco-friendly technologies and transportation. The ships receive discounts on voluntary practices reducing emissions along with other environmental impacts.⁹⁹ The incentivising eco-friendly programme in line with the UNFCCC, Kyoto Protocol and the UNEP Global Clean Port Hub programme is succinctly contributing to improving air quality.

Environment and Climate Change Canada are empowered to review and monitor the air, water and land environment quality under the Canada Environmental Protection Act and Canada Waters Act.¹⁰⁰ Each corporation operating at ports is responsible for developing a process to monitor and record the environmental plan and legal obligations reviewed and audited by a third party before the Environmental Protection Agency's inspection.¹⁰¹ The port authorities prepare environment compliance reports for inspection conducted by the Environment and Climate Change Canada under a centralised reporting mechanism. The reports are analysed and forwarded horizontally through the local and provincial government officials to the central government for environmental compliance.

Although, the security, including customs and immigration, are not under the framework of CMA. As it is mandated for customs, immigration, security and surveillance operations, Canada Border Service Agency closely collaborates with port authorities for effective port

⁹⁸ Hossain, Adams and Walker (n 37).

⁹⁹ Kenneth Chan, 'Port of Vancouver to Invest in Improvements for Crab Park' (*Daily Hive*, 9 April 2019) <<https://dailyhive.com/vancouver/port-of-vancouver-container-ships?auto=true>> accessed 8 January 2020.

¹⁰⁰ 'Canada's 7th National Communication and 3rd Biennial Report' (Environment and Climate Change Canada 2017) Cat. No.: En4-73/2017E-PDF/ISBN: 978-0-660-23785-5, Available at: https://unfccc.int/files/national_reports/national_communications_and_biennial_reports/application/pdf/82051493_canada-nc7-br3-1-5108_eccc_can7thncomm3rdbi-report_en_04_web.pdf <https://unfccc.int/files/national_reports/national_communications_and_biennial_reports/application/pdf/82051493_canada-nc7-br3-1-5108_eccc_can7thncomm3rdbi-report_en_04_web.pdf>.

¹⁰¹ 'Environmental Management Systems and ISO 14000 An Overview' Pollution Prevention Factsheet 4/ Reviewed/Revised-01/2004, Available at: https://www.novascotia.ca/nse/pollutionprevention/docs/EMS_factsheet.pdf <https://www.novascotia.ca/nse/pollutionprevention/docs/EMS_factsheet.pdf>.

operations under the Canada Border Service Agency Act.¹⁰² It provides an advanced technical mechanism for adequate security and regulatory compliance.¹⁰³

4 (Un)Sustainable Port Policy of Gwadar

Effective implementation of international law is overall futile in Pakistan, as the economic demands are much higher than other concerns. Such futility has compromised the position of SDGs within the existing policy framework of Gwadar Port. Its framework lacks regulatory compliance mechanisms; neither the clarity of jurisdiction mandates any authority to enforce its rules and regulations.¹⁰⁴ The investment policy framework of Gwadar port has been drafted, finalised and implemented without involving the local community, stakeholders and regulatory authorities. The main issues highlighted as 'hotchpotch governance' are the jurisdictional overlaps between the central and the provincial governments.¹⁰⁵ The local authorities had addressed their particular concerns as they were ignored throughout the development phase, and they are seeking their position in the operational phase.¹⁰⁶ The alarming situation has led the government of Pakistan to reconsider the existing GPAO and the Gwadar Port Master Plan.

The Gwadar port is one of the projects under the CPEC, a bilateral set of agreements between China and Pakistan on infrastructure, energy and industrialisation.¹⁰⁷ Hence, the environmental impact assessment for overall CPEC, carried out by the International Union for Conservation

¹⁰² Mary R Brooks, 'Port Devolution and Governance in Canada' (2006) 17 *Research in Transportation Economics* 237.

¹⁰³ Canada Border Services Agency Act 2005 (SC 2005, c 38, Revised 03-12-2019, Enforced by Canadian Parliament, 2005, Available at: <https://laws-lois.justice.gc.ca/eng/acts/c-14/>).

¹⁰⁴ Muhammad Naveed Iftikhar and others, 'The Institutional and Urban Design of Gwadar City' (International Growth Centre, UK Aid, London School of Economics, Available at: <https://www.theigc.org/wp-content/uploads/2019/05/Iftikhar-et-al-2019-Final-report.pdf> 2019) Analytical C-37422-PAK-1.

¹⁰⁵ Rorry Daniels, 'Strategic Competition in South Asia: Gwadar, Chabahar, and the Risks of Infrastructure Development' (2013) 35 *American Foreign Policy Interests* 93.

¹⁰⁶ Usman Shahid, 'Balochistan: The Troubled Heart of the CPEC' (*The Diplomat, Features - Security - South Asia, Pakistan*, 23 August 2016) <<https://thediplomat.com/2016/08/balochistan-the-troubled-heart-of-the-cpec/>> accessed 7 January 2020.

¹⁰⁷ Asmat Naz and Fatima Ali, 'Gwadar Port: As an Economic Hub for Maritime Trade in the World Corridor (CPEC)' (2018) 4 *Journal of Business and Social Review in Emerging Economies* 7.

of Nature, which the Pakistan Environmental Protection Agency rejected.¹⁰⁸ This rejection was sanctioned without any apparent justification, as the Pakistan Environmental Protection Agency only stated that the report was prepared by amateurs and lacked specific details about cutting trees.¹⁰⁹

The infrastructure phase of the Gwadar port, following the PPP model, is in the process of implementation. The Board of Investment, Gwadar Port Authority (GPA), Federal Board of Revenue of Pakistan and China Overseas Port Holding Company Ltd (COPHCL) of China are collaboration partners for infrastructure development.¹¹⁰ Initially, the Ministry of Commerce, Ministry of Maritime Affairs and Ministry of Finance supervise the infrastructure development. The Gwadar port is leased to COPHCL, and the Gwadar Port Authority is empowered to regulate the infrastructure development of roads and port infrastructure.¹¹¹

The central government is empowered to appoint the Chairman, Board and the Management of the GPA. The involvement of other departments and ministries have compromised the independent position of the GPA.¹¹² The Ministry of Maritime Affairs supervising GPA is not privy to any policy, legal or operational matters. The central government is kept in the loop for

¹⁰⁸ Shah Meer Baloch, 'CPEC's Environmental Toll' (*The Diplomat*, 18 April 2018) <<https://thediplomat.com/2018/04/cpecs-environmental-toll/>> accessed 18 March 2020; Dr. Abdul Rauf, 'Environmental Impact Assessment of CPEC Projects and Mitigation Strategy' (*Pakistan Observer*, 23 August 2019) <<https://pakobserver.net/environmental-impact-assessment-of-cpec-projects-and-mitigation-strategy/>> accessed 18 March 2020.

¹⁰⁹ Jamal Shahid, "'Environmental and Economic Sustainability' of CPEC Assured' (*The Dawn*, 8, Islamabad, Pakistan, June 2015) <<https://www.dawn.com/news/1186880/environmental-and-economic-sustainability-of-cpec-assured>> accessed 4 November 2019.

¹¹⁰ Umbreen Javaid, 'Assessing CPEC: Potential Threats and Prospects' (2016) 53 Journal of the Research Society of Pakistan.

¹¹¹ Obortunity Info, 'Chinese Company Grants \$1.2bn for Gwadar Port's Development' (*Obortunity*, 21 September 2019) <<https://obortunity.org/2019/09/21/chinese-company-grants-1-2bn-for-gwadar-ports-development/>> accessed 24 October 2019.

¹¹² Muhammad Awais and others, 'The Sustainable Development of the China Pakistan Economic Corridor: Synergy among Economic, Social, and Environmental Sustainability' (2019) 11 Sustainability 7044.

financial and investment matters. It is empowered to issue any further order to remove difficulties, including jurisdiction, environment, and other matters.¹¹³

GPA cannot move independently for any infrastructure, development or trade project; neither it can implement its rules and regulations (if framed) without the permission or approval of the central government.¹¹⁴ Henceforth, the fiscal policy of the Gwadar port is not completely complying with the trade liberalisation policies. The PPP agreement for infrastructure development is not accommodating other investors besides COPHCL. GPA, as it is responsible for preparing a master plan and the programme for Gwadar port development, it allocates port zones, lands, water, power, and natural resources. The environmental protection policy is also the sole responsibility of the GPA and is framed with the port master plan preparation. It is unnecessary to consult with any local authority or environmental authority to conduct a framing of the environmental policy and port master plan.¹¹⁵ This policy framework is adopted through parent legislation entitled 'Ports Act,' capitalising ports as a federal/central subject.¹¹⁶ Therefore, the environmental impact assessment of infrastructure development is conducted solely by the Gwadar Port Authority.

However, environmental impact assessment is the mandate of the Pakistan Environmental Protection Agency under the Pakistan Environmental Protection Act (PEPA).¹¹⁷ Another environmental authority at the provincial level mandated for impact assessment is the Baluchistan Environmental Protection Agency under the Baluchistan Environmental

¹¹³ Gwadar Port Authority Ordinance, 2002 (F No 2(1)/2002-pub (Ordinance no LXXVII of 2002), Enforced by Pakistan Government, 2002, <http://www.pljlawsite.com/Statuteview.asp?ID=2391&offset=-1>).

¹¹⁴ *ibid.*

¹¹⁵ *ibid.*

¹¹⁶ Ports Act 1908 (Act XV of 1908, Enforced by Pakistan Government, 1947, Available at: <https://pljlawsite.com/Statuteview.asp?ID=4462§ion=>).

¹¹⁷ 'Evaluation of Environmental Impact Assessment System in Pakistan' (2008) 28 Environmental Impact Assessment Review 562; Pakistan Environmental Protection Act 1997 (Act No XXXIV of 1997/No F 9(46)/97-Legis, Enforced by Pakistan Government, 1997).

Protection Act (BEPA).¹¹⁸ The uncertainty is due to the jurisdiction of central authorities over the ports, including the provincial and local interests, emerging as a significant jurisdictional overlap.¹¹⁹

Incrementally, PEPA and BEPA are itself ambiguous on port development and operations, which has led the Gwadar without a comprehensive impact assessment. The environmental impact assessment under both the PEPA and BEPA is substantiated for any industrial activity causing environmental damage.¹²⁰ Although port development and operations can be covered under the definition of the 'industrial activity,' as it states that 'operation or process for making, formulating, synthesising, altering, repairing, or otherwise treating any article or substance with a view to its use, sale, transport, delivery or disposal, or for mining, for oil and gas exploration and development, for any other industrial or commercial purpose.' Despite that, there is a lack of clarity in carrying impact assessment regarding industrial activity concerning port development and operations.

Hence, both the BEPA and PEPA contain imprecise provisions for the protection of the marine environment. For instance, in PEPA, the only marine environmental protection provision is inculcated in the biodiversity clause. Similarly, the BEPA only imposes an obligation to protect the marine environment from ship breaking and dismantling waste. Therefore, the port environmental protection policy of the Gwadar has ignored the obligations under the UNCLOS, London Convention and its Protocol. Furthermore, air quality regulation is also placed under both the PEPA and BEPA, establishing the emissions standards through specific regulations.

¹¹⁸ Irum Ahsan and Saima Amin Khawaja, *Development of Environmental Laws and Jurisprudence in Pakistan* (Asian Development Bank <https://www.adb.org/sites/default/files/publication/31140/environmental-law-jurisprudence-pakistan.pdf> 2013) <<https://www.adb.org/sites/default/files/publication/31140/environmental-law-jurisprudence-pakistan.pdf>>.

¹¹⁹ Iftikhar and others (n 104).

¹²⁰ Pakistan Environmental Protection Act; The Baluchistan Environment Protection Act 2013 (Act no VIII of 2012 (No PAB/Legis: V (9)/ Baluchistan Assembly, Came into force, 2013, Available at: https://elaw.org/system/files/balochistan_environment_protection_act_2012-1.pdf).

Pakistan Environmental Protection Motor Vehicle Regulations prohibit excessive emissions from vehicles and the Pollution Charge for Industry (Calculation and Collection) Rules that introduce the pollution trading schemes.¹²¹ However, their shipping and port operations application requires a significant tantamount of regulations as per the UNEP Global Clean Port Hub Programme, the UNFCCC and the Kyoto Protocol.

PEPA empowering Pakistan Environmental Protection Agency necessitates, and BEPA re-endorse the conduct of environmental impact assessment and environmental protection. Beyond that, BEPA's specific implementation for Coastal Zone covers the environmental concerns due to the development of new ports or expansion of old ports as it calls 'to monitor strictly the environmental degradation caused by the ports and shipping.'¹²² However, it is unclear on the preservation of the 'land spaces' as natural resources than the SPDA. The cultural heritage preservation concerns are not included in any investment, development or operational framework of the Gwadar port. The authorities responsible for cultural protection and preservation were not involved in any consultation or policymaking process. The general policy framework has not encompassed any such provisions to involve them in developmental projects.¹²³

Although, the environmental policy framework generally endorses the obligations of the international treaty law. The foremost dispute in implementing international treaty law is the jurisdictional overlaps between the port authorities, local authorities, and the provincial and central environmental authorities. Disintegration among the authorities responsible for

¹²¹ National Environmental Quality Standards (NEQS) to the Pakistan Environmental Protection Act, 1997 2010 (SRO 1062/2010 - Act XXXIV of 1997 Available at: <http://environment.gov.pk/images/PDF/NEQS-Air-IndustrlGas.pdf>); Pakistan Environmental Protection Motor Vehicle Regulations 2016 (SRO (1)/2015/ under Pakistan Environmental Protection Act, 1997 (XXXIV of 1997), Enforced by Pakistan Environmental Protection Agency, 2016, Available at: <http://www.environment.gov.pk/images/regulations/20160201DraftMVR2016.pdf>).

¹²² The Baluchistan Environment Protection Act.

¹²³ Pakistan and Cabinet Division, *Rules of Business (As Amended up to 3rd March 2017)* (Government of Pakistan, <http://cabinet.gov.pk/cabinet/userfiles1/file/ROB-amended-03-03-2017.pdf>) <<http://cabinet.gov.pk/cabinet/userfiles1/file/ROB-amended-03-03-2017.pdf>>.

developing city and port, environmental protection, preservation of natural resources and cultural heritage is among other issues. Additionally, the GPAO and the Ports Act are unclear on protecting the environment, natural resources, and cultural heritage.

5 Sustainable Port Policy – The Future of Gwadar Port

As illustrated in the form of WBPRT, PMS and UNEP's programmes, the applicability of international law is a way forward in the harmonisation of port policies for SDGs. Port liberalisation policies are critical to economic development under the State regulatory framework. UNEP's 'Key Principles for Port and Harbour Development' and 'Global Clean Port Hub Programme' are a better form of integration. The threats to the environment, including air and marine, are considerably addressed under these UNEP's programme and principles. A specific application of both these UNEP's programme and principles with the international environmental law supports harmonising environmental policies. The disintegration among the PMS, WBPRT and UNEP's guidelines and programmes serves as a barrier to harmonising policies for the development of sustainable ports at the global level.

EMS as a system is problematic, although internationally recognised, in developing States, the involvement of the environmental authorities at each stage is laborious.¹²⁴ Additionally, the EMS system stems from an environmental policy of a State, and weak environmental legislation is symbolic in developing States.¹²⁵ The authorities in the process of environmental policy development are not usually involved primarily in developing States. In developed States although, joint conduct of monitoring and reporting of the environmental authorities and the port authorities seems effective. However, the environmental hazards due to intermodal transportation networks and the shipping embark aligning questions on the jurisdiction of the

¹²⁴ Lam and Notteboom (n 77).

¹²⁵ Clapp (n 80).

port, transportation and environmental authorities. Road, rail and shipping transportation, and port operations lacks an integrated policy in most of the States.

The vulnerability to the environment at ports is quite technical; its consecutive interactions with the air and oceans ecosystems seek stringent regulations.¹²⁶ A generic application and operationalisation of international environmental treaty law, including UNFCCC, Kyoto Protocol, UNCLOS, London Convention, and London Protocol, is technically avoided from the operations at ports. Better management of port operations for SDGs requires horizontal and vertical integration of the port, local and State regulatory authorities for a policy formation.¹²⁷

The environmental challenges at ports call for adopting new and more inclusive perspectives with effective and comprehensive objectives to respond to the various issues.¹²⁸ An overall, IMO's coherent and integrated approach in developing and implementing shipping policy is compelling.¹²⁹ The IMO's regulatory practices in the implementation of international environmental treaty law to control shipping pollution have remarkably contributed to protecting the marine environment. Comparable guidelines amalgamating the international environmental treaty law is prospective to address the alarming environmental harms at ports.

In port development and expansion, the disaster is more significant, while accommodating invasion of trade due to immense increasing monetary demands of the States.¹³⁰ Degradation of land and oceans, destruction of fisheries and species, and contamination of soil and water

¹²⁶ Cheng-Hsien Hsieh, 'Disaster Risk Assessment of Ports Based on the Perspective of Vulnerability' (2014) 74 *Natural hazards* 851.

¹²⁷ Harry Barnes-Dabban, CSA van Koppen and Jan PM van Tatenhove, 'Regional Convergence in Environmental Policy Arrangements: A Transformation towards Regional Environmental Governance for West and Central African Ports?' (2018) 163 *Ocean & Coastal Management* 151.

¹²⁸ SangHyun Cheon, Arnold Maltz and Kevin Dooley, 'The Link Between Economic and Environmental Performance of the Top 10 U.S. Ports' (2017) 44 *Maritime Policy & Management* 227.

¹²⁹ Lawrence Sciberras and Joaquim Ramos Silva, 'Establishing an Institutional Conceptual Framework for Effective Delivery of the United Nations SDGs: An Application of Grounded Theory to Assist IMO Stakeholders' (2019) 18 *WMU Journal of Maritime Affairs* 379.

¹³⁰ Wei Yim Yap and Jasmine Siu Lee Lam, '80 Million-Twenty-Foot-Equivalent-Unit Container Port? Sustainability Issues in Port and Coastal Development' (2013) 71 *Ocean & Coastal Management* 13.

due to dredging with a limited prescription is supported through the generic impact assessment mechanism in the Convention on Biological Diversity. Nonetheless, the exigency is to cogitate way-beyond beyond a simplistic application of the impact assessment mechanisms as provided under the existing international treaty law.¹³¹

Applicability of the RIO Declaration, Stockholm Declaration and World Heritage Convention supports harmonisation of policies for port development and resource and cultural preservation. Most imperative is the Marrakesh Agreement urging to balance international trade with environmental protection. Hence, the application of the Marrakesh agreement is imperious and straight on ports as they are nodes of international trade. Fragmentation of international treaty law for intergenerational sustainability serves as an obstacle for sustainable port policy development. A distant approach is unclear, as there is no precise treaty, rule or policy on the port to affirm intergenerational sustainability.¹³² Such an ambiguous position of international treaty law is problematic, which may coerce the global ports community to make specific assertions about land spaces, waterfronts, heritage sites, and energy utilised for port development and operations.

A positive prescription of international treaty law implementation aligning economic growth and environmental protection is observed in CMA.¹³³ The international trade liberalisation policies through the CMA mandates the port authorities to work independently. Therefore, the port authorities of Canada are significantly contributing to provincial/state level and national economies in terms of industrialisation, an influx of employment, business and

¹³¹ Schipper, Vreugdenhil and de Jong (n 43).

¹³² Marco Casagrande, 'The Lack of Interest for Seaports in International Law and Doctrine', *Seaports in International Law* (Springer International Publishing 2017).

¹³³ Environment and Climate Change Canada, 'Participation in International Environmental Agreements and Instruments' (*aem*, 9 January 2007) <<https://www.canada.ca/en/environment-climate-change/corporate/international-affairs/partnerships-organizations/participation-international-environmental-agreements.html>> accessed 23 November 2019.

entrepreneurship opportunities.¹³⁴ The purpose of the CMA is to originate a system for efficient and competitive ports by establishing the port authorities to contribute to the Canadian economy.

CMA has integrated legislation on ports addressing widespread issues of the environment. Congruently, the policy impediments at ports in CMA are removed effectually. It establishes the applicable laws on the segmented issues the compliance and monitoring procedures resolve the wide-ranging issues.¹³⁵ Therefore, the diverse environmental protection under international environmental treaty law is the hallmark of the CMA. SPDA, although specify the protection of the Great Barrier Reef but is considered concerning balancing the intergenerational interests attached to ports' development. SPDA has promulgated intergenerational concerns at a large scale, protecting culture, environment and natural resources.¹³⁶

The above debate and analysis suggest that integrating international treaty law supports harmonising the sustainable port policies for SDGs. Global ports' community and the international community generally had never recognised the importance of geo-strategic, environmentally divergent, culturally diverse, and economically multidimensional ports. The ports stayed behind the national legislations except for the Geneva Convention and few international regulations on other port-ship interfaces.¹³⁷ The Geneva Convention prompts the principles of equity, conferring to international treaty law amount of clarity and coherence, howbeit, limiting the domain of ports as only for treating the ships is challenging.¹³⁸ The

¹³⁴ Jeremy Hainsworth, 'Updated: Port Automation Could Cost Thousands of Jobs, Tax Income: Union | Vancouver Courier' *Glacier Media*, Available at: <https://www.vancourier.com/updated-port-automation-could-cost-thousands-of-jobs-tax-income-union-1.23928888> (Vancouver, Canada, 28 July 2019) <<https://www.vancourier.com/updated-port-automation-could-cost-thousands-of-jobs-tax-income-union-1.23928888>> accessed 4 November 2019.

¹³⁵ Gaudreau and others (n 11).

¹³⁶ Nicolls, Lamb and Rayner (n 11).

¹³⁷ Casagrande (n 132).

¹³⁸ Marco Casagrande, 'A Contribution from Private International Law and Some Municipal Legal Orders' in Marco Casagrande (ed), *Seaports in International Law* (Springer International Publishing 2017) <https://doi.org/10.1007/978-3-319-60396-4_19> accessed 19 November 2019.

Geneva Convention lacks applicability in terms of harmonisation of port policies. Nevertheless, the Geneva Convention recognises its limitation and remains open-ended in the form of protocols.¹³⁹

Therefore, the future of port policies and its harmonisation under international treaty law in the form of the protocol to the Geneva Convention, if established, then for SDGs shall considerably follow:

- 1) Sustainable development of new ports or sustainable expansion of old ports under the Marrakesh Agreement, RIO Declaration and Stockholm Declaration for the preservation of natural resources, cultural heritage and ecosystems;
- 2) Sustainable Operations of ports under the UNFCCC, Kyoto Protocol, UNCLOS, London Convention and London Protocol for environmental protection (UNEP's Guidelines, Principles and Programmes shall be deliberated in case if further clarity is required);
- 3) State economic development through better management of ports under the PPP model specified by WBPRT and UNCTAD PMS).

The future policy of Gwadar port to remove difficulties for better management of port operations shall follow the PPP model inclusively by opening the framework to embrace more private investment. The limitation of the PPP model to a specific corporation is hindering competition and is not beneficial for future trade and infrastructural development of Gwadar port. WBPRT and UNCTAD PMS financial models are quite resounding for remodelling the Gwadar port fiscal model.

¹³⁹ Convention and Statute on the International Régime of Maritime Ports.

A comprehensive environmental compliance framework to be developed with central and provincial environmental regulatory authorities, local authorities and stakeholders. The framework shall be constituted under the international standards as provided by the international environmental treaty law and followed by CMA, integrating air and marine environment issues.

Policy for expansion of Gwadar port shall be subject to the interests of the residents of Gwadar city, including the preservation of the water spaces and heritage sites. Provisions of the RIO Declaration, Stockholm Declaration, Marrakesh Agreement, and World Heritage Convention and SPDA are pretty accommodating for such policy development. The heritage sites around Gwadar are of national identity and cultural concern. Similarly, there is a potential for tourism as the Gwadar front Arabian Sea is aesthetically scenic.

6 Conclusion

The existing situation appears unsustainable in this era of globalisation towards the ports, vital financial and security hubs. The development and operation of ports are quite vulnerable to the environment, natural resources, trade and economic development. Promulgation of normative international law by tailoring it for ports generally appears efficient. The scholarly pavement is grossing; other good policies and guidelines support harmonising the diverse policies. Enhanced efforts of the UNCTAD and World Bank to develop specific guidelines to tool the financial strategies at ports are beneficial. UNEP's Global Clean Ports programme for emission prevention and guidelines, including the 'Key Principles for Port and Harbour Development,' are quite resounding.

An integrated mechanism noting the international treaty law is valuable to underpin the suggestion of Secretary-General IMO to 'harmonise port policies.' Distant thinking and dialogue among the international community to remove the barriers are required to achieve

inclusive sustainability at and through ports. Port cities, communities, and other stakeholders are looking forth towards international communities for a positive response. For these purposes, a further specific guideline from the United Nations Educational and Scientific Cooperation Organisation is thoughtful for protecting heritage. The United Nations Development Programme emerging programmes ought to comprise ports as one of the tools in development. Moreover, the United Nations and IMO shall consider guidelines for the community resilience and social welfare of ports' employees and emerging communities.

The existing policy mechanism of Gwadar port gives an unsustainable impression, as it lacks harmonisation and coherency of the regulatory frameworks. The investment policy framework of Gwadar is also ambiguous and vague because its mechanism to involve stakeholders is not clear. The ignorance of the local community at any level of policy preparation, implementation and the environmental protection framework is alarming. The environmental and scholarly organisations had already addressed several concerns, and the social development of the Gwadar port city is questionable. Considering the international treaty law obligation, it is the State's responsibility to get the public on board for decision-making. The government of Pakistan shall involve the local community for their concerns and adopt a transparent policy framework.

Social development and protection policies appear to be future research concerning the sustainable port. The health and safety of the labourers employed, interests of the social actors, including non-governmental and environmental organisations, will be significant to harmonise port sustainability agendas further.

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