**Issues and Prospects**

The Nexus of Ocean Trade and Climate Change: A Review Essay

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**Introduction**

International trade overcomes the restrictions of home markets as it develops an outlet for surplus production above national requirements. There is no doubt that trade is a vital engine of economic growth. By broadening markets, international trade increases the degree of specialization possible and enhances the overall productivity within a country. Exports can be the leading sector in the process because as exports grow they support an increasingly robust sector of intermediate suppliers within the exporting country. This creates growth by stimulating technological change and investment through spillover effects into other sectors. In fact, growth rates of developing countries correlate more with their export performance than with any other single economic indicator.

Trade does not occur in a vacuum. It was the freedom of the seas doctrine that advocated that shipping routes on the high seas are free and open to all nations. The cost of transport impacts on whether goods move at all and/or the size and direction of that movement. The cost and efficiency of the transport mode determines the competitiveness of goods shipped and the income of buyers or sellers. Shipping or maritime transport is the backbone of international trade and the use of the ocean and seas for transport of trade is the most valuable of ocean and seas services. According to the United Nations Conference on Trade and Development (UNCTAD) sources, the value of seaborne trade in

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2012 was estimated at about US$12.9 trillion. Consequently, maritime trade plays a vital role in national and international economies, particularly since seaborne trade accounts for 90 percent of world trade by volume.

However, as important as is maritime transport (shipping), it is the largest contributor to seaborne ocean pollution. Greenhouse gas emissions (GHG) generated by fossil fuel consumption in the shipping sector contributes directly to ocean acidification and to climate change. Hence, the complex and interdependent nexus of ocean trade and climate change.

The two pillars of ocean trade (including cruising vessels) are the ship and the port. Each pillar generates its own carbon footprint and, as such, contributes to the challenge that is climate change. However, climate change impacts the port and the port city more directly than it does the vessels of ocean trade, manifesting itself in the form of extreme weather, such as recurrent cyclones and hurricanes, as well as sea level rise, which may inflict permanent damage on port infrastructure. This article attempts to review this complex relationship focusing specifically on ocean trade.

The Dual Character of Shipping: A Service to Trade and an Industry in Its Own Right

Demand for shipping, as for any other transport service, is always a derived demand, the level of which depends on the type and quantity of goods traded, as well as on the geographic trade structure. The fact that there is no ‘original’ demand for cargo shipping services underlines the close linkage between trade and shipping. Yet, more important than the fact that demand for shipping services will not materialize unless there is cargo to be moved is the inverse relationship that no trade can take place unless adequate shipping services are at the disposal of the trading community. Consequently, the shipping industry has not only reacted to trading requirements but, in many cases, has created pre-conditions for the expansion of world trade based on an intensified international division of labor.

An example of such development can be seen in the rapid growth of trade in dry bulk commodities over the last three decades, combined with similarly important changes in trade patterns. Reductions in bulk shipping costs based on the exploitation of economies of scale in transport have resulted in a reduction of economic distances. Ocean shipping has experienced and continues to experience an ongoing technological revolution. This is seen in iron

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1 Estimates obtained directly from H. Benamara, Policy and Legislation Section, DTL, UNCTAD.