

Ecoport Implementation at Tanjung Priok Port: A Case Study

D N Gunarse^{1*}, F A Ramadhan², Sjahrial Nasution³, David Arosochi Lasse⁴, S Ekawardana⁵

^{1,2,3,4,5} Institut Transportasi dan Logistik Trisakti, Jakarta, Indonesia

*Corresponding author: gunarse@yahoo.com

Abstract. This case study aims to analyze the benefits of ecoport program at Tanjung Priok Port, Jakarta. This study used descriptive qualitative method. The results of this study indicate, first, the important role of the ecoport to develop environmental sustainability in the port area, which consists of; dock, ship, and anchor area. Ecoport has many important things to be implemented in the port area, especially in the reception facility area; Second, the importance of using reception facility for environmental sustainability in the port area. Ecoport is a solution for port operators to distribute cargos in ways that are sustainable, safe and environmentally friendly; Third, the effectiveness of reception facility for sustainable port development in Indonesia, especially Tanjung Priok Port, which is the main busiest port in Indonesia. In conclusion, the implementation of ecoport in Tanjung Priok Port is still not optimal because the integrated B3 waste storage system in the reception facility is still in the process to develop a port waste system management (PWSM) application integrated with Inaportnet. Coordination is needed between agencies to solve the problem related to regulation and monitoring so that vessels dispose of B3 waste into the reception facility.

Keywords : ecoport, reception facility, b3 waste management

1. Introduction

Indonesia is a maritime country with a large portion of its territory constituting sea and consists of 17,508 islands [1]. Sea transportation facilities are very important to connect islands scattered throughout Indonesia. As a maritime country, to support inter-island activities Indonesia must have adequate infrastructure. One of the supporting activities for inter-islands is the availability of adequate ports to support vessels that can lean and facilitate the transfer between modes from land to sea and vice versa.

The definition of port according to Law No. 17 of 2008 concerning Shipping, is a place that consists of land/ and or water with certain limits as a place of government activities and business activities that is used as a place for ships to lean back and forth, and/ or loading-unloading of goods, in the form of terminals and berths of ships equipped with shipping safety and security facilities and port support activities as well as intra-and inter-mode transportation facilities [2].

Greenport or environmentally ports or also ecoport is a port term that in management and operations considers not only aspects of business benefits but also social, economic and environmental aspects[3]. The definition issued by the International Association of Port and Harbor (IAPH) is related to Greenport or also called sustainable port, that sustainable port is where port authorities together with port users, are pro-active and responsible for developing and operating ports, based on growth strategies green economic, and work with natural philosophy and involve the participation of port stakeholders, starting from a long-term vision of the area where the port is located and from a special position in the logistics chain, thus ensuring development that anticipates the needs of future generations, to benefit themselves and the prosperity of the area it serves.

The port is one of the important connectivity nodes, so the efficiency and effectiveness, as well as the sustainability of the port business, are very important to note. The efficiency and

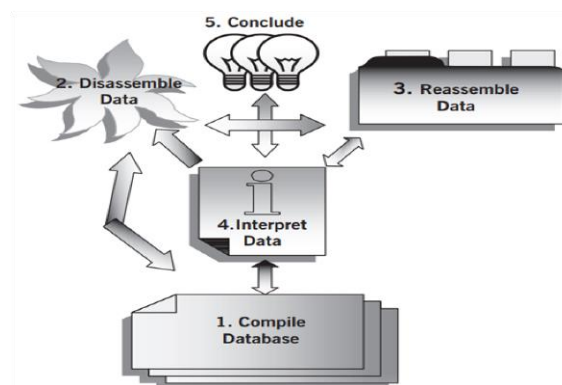
effectiveness and sustainability of ports can be improved through the application of good, systematic and integrated port management with various port service users, as well as paying attention to aspects of environmental, economic and social/ cultural sustainability. The disruption of one aspect of the port will result in considerable losses, not only for the company but also for the national economy and the entire community related to the supply chain of goods distribution through the port.

Currently, ports in Indonesia, especially the port of Tanjung Priok, are not only focused on export and import activities, but there are other obstacles, namely the decreasing quality of the port area. The port is not only required to serve ships and goods but also can overcome the deterioration in the quality of the environment. According to Talley, the increase in the volume of cargo handled by the port will also be followed by an increase in negative impacts on the environment[3]. One of the negative impacts on environmental pollution in the port area is the disposal of B3 waste (Toxic and Dangerous Material). Waste produced by ships during shipping should not be disposed of directly into the sea to prevent and avoid contamination of seawater. The waste is collected first at the port's Reception Facility and then the waste will be residual so that when it is disposed of it does not cause environmental pollution.

The reception facility is a facility of reducing, storing, collecting, transporting, utilizing, processing and storing waste in ports originating from port support activities. The type of waste served by Reception Facility is liquid oil waste from ship machinery space (sludge oil) and Liquid Oily Waste from Tanjung Priok Equipment (used oil or used lubricating oil). The legal basis of the port providing a Reception Facility is the Minister of Transportation Regulation Number PM 29 of 2014 concerning the prevention of maritime environmental pollution in CHAPTER IV concerning the prevention of pollution from port activities[4]. One of the ports that have a reception facility is Tanjung Priok Port. But the use of reception facility at Tanjung Priok is not optimal. Ships that anchor to Tanjung Priok port rarely dispose of their vessel waste during shipping to Tanjung Priok port. Because the cost of disposal of waste charged to ships is quite expensive. Besides, the application process for ship waste demolition services at Tanjung Priok port must be submitted by shipping companies or ship agents, which represents no later than 2 days before the ship is docked.

2. Research Method

This study was conducted with a qualitative approach to the case study method. Structured interview data collection techniques and management of nominal and ordinal data with the Robert K. Yin model was conducted. So that it was easy to get objective data to know and understand the ecoport role, case study in Tanjung Priok port. This study also used descriptive method.



*(Source © 2011 The Guilford Press A Division of Guilford Publications, Inc. 72 Spring Street, New York, NY 10012 www.guilford.com)[5]

Compiling data was sorting data such as field notes and interview results in the full collection; data disassemble was the phase of sorting data into small units and then gave a label or coding per small unit; data reassemble, the phase in which small units were rearranged according to their coding/ label; interpretation of data was the translation or interpretation of data that has been arranged so that it was meaningful to answer research questions; and finally concluded[6].

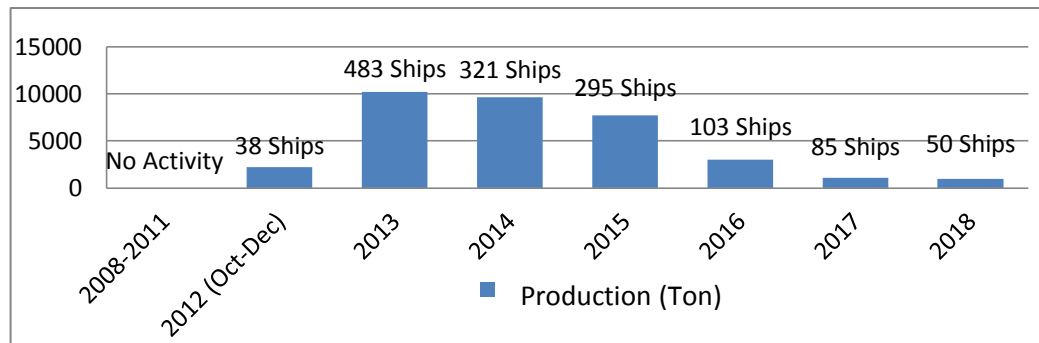
The main data source of this study was primary data, namely the results of interviews obtained from informants or informants who were considered potentially in providing relevant information, and observation. Furthermore, secondary data in the form of literature and documents as well as data taken in the field and contained in the research location in the form of reading the material, library materials, and research reports were obtained[7].

Analysis of the data in this study was carried out by looking for patterns, models, themes, relationships, equations, and meanings of data expressed in the form of statements and interpretations after extracting data from several key informants tabulated and presented. The results of data collection were processed manually, further reduced the results of the reduction were grouped in the form of certain segments (display data) and then presented in the form of content analysis.

3. Discuss And Result

The reception facility in Tanjung Priok has been begun to be implemented since 1986 at Tanjung Priok port. In 1986-2001 the waste service was managed by the Tanjung Priok Branch but without adequate Reception Facility storage facilities. Ships were forced to illegally dispose of oil waste so that the remaining amount of waste oil that can be accommodated was finally disposed of into the sea as well. Then in 2002-2004, the Pelindo Tanjung Priok Reception Facility worked with PT. Nusantaraarindu Abadi Pesona. In 2004-2007 the Reception Facility was managed by the Tanjung Priok branch. In that year there was a back obstacle such as the disposal of B3 waste (Toxic and Dangerous Material) by the collector and sold it freely, the waste collection activity had not yet used the manifest. The peak was in the 2008-2012 period in which taking B3 waste (Toxic and Dangerous Material) in Tanjung Priok was stopped because the operation of the Reception Facility did not yet have an activity permit from KLH so that the Tug Boat and Reception Facility was detained by the Water Police Headquarters based on the No.3 year Minister of Environment Regulation 2007 concerning B3 Waste Collection and Storage Facilities in Ports[8]. In 2011 PT. The Port of Indonesia II (Persero) Tanjung Priok Branch obtained permission as a collector with the Decree of the State Minister of Environment number. 87 of 2011[9]. Currently, PT. Tanjung Priok branch Pelindo II conducts cooperation in the management of B3 waste (Toxic and Dangerous Material) not only with land transporter companies namely PT. Binasamsurya Mandala, PT. Dame Alam Sejahtera and PT. Indowastek but also with Waste Utilization Companies namely PT. Karya Nusa Bumi Persada and PT. Dame Alam Sejahtera.

Table 1. Production of B3 Waste Management activities at PT. Pelabuhan Indonesia II (Persero) Tanjung Priok Branch



*(Source above taken from PT. Pelabuhan Indonesia II)

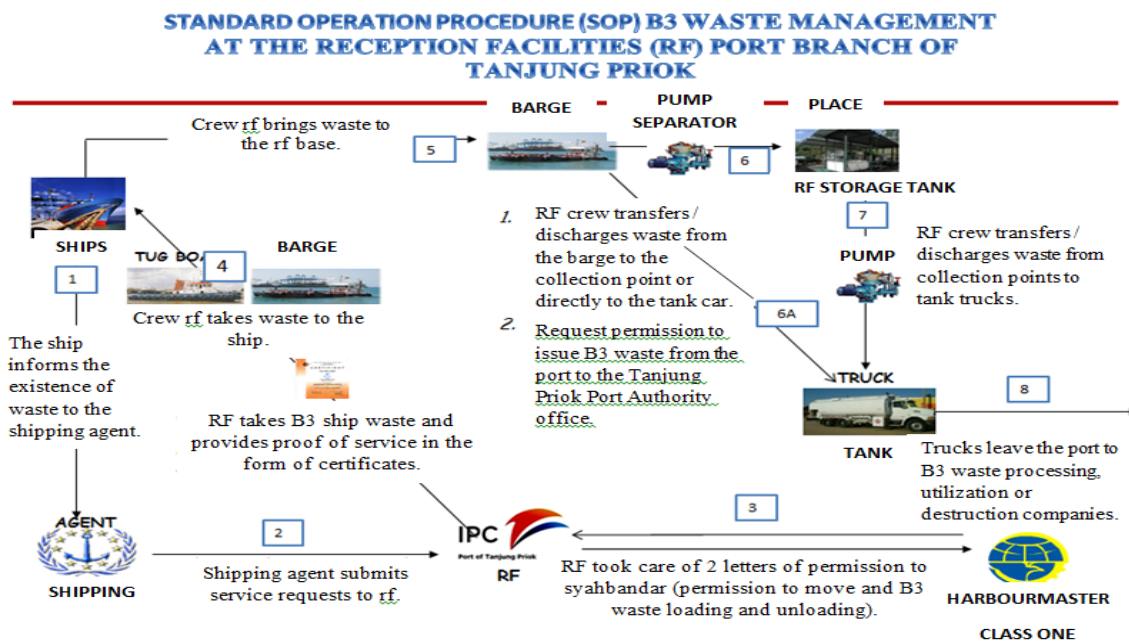
At Tanjung Priok Port, the number of vessels that dispose of their waste when their vessels are anchored continues to decline every year. In 2018 from Inaportnet Tanjung Priok Port Authority which anchored in Tanjung Priok Port both at port dock and self-interest pier as many as 15,663 ships and which dumped ship waste only 50 ships dispose of ship waste or only 0.33% of vessels that dispose of their waste at Tanjung Priok Port. This is because the cost of waste disposal services in Tanjung Priok is very high, reaching IDR 1,500,000/ Ton. According to Rahmat Desrial, as a Harbour Master of Tanjung Priok. These costs are quite high compared to the cost of waste disposal in other ASEAN regions. The fees that they pay according to them are very high. Even though the waste is thrown away, it still has economic value.

Table 2. Operational Cost for B3 Reception Facility (RF) Waste Collection at Tanjung Priok Port

No	Description	Total (IDR)
1	Security Coordination	2.000.000
2	Permission to Move	2.500.000
3	Harbour Master Waste Disposal Permit	1.300.000
4	B3 Waste Transport Permit Out of Port (Tanjung Priok Port Authority)	1.000.000
5	Fee Crew Ships	1.300.000
6	KPLP (Indonesia Sea & Coast Guard) Coordination	1.000.000
7	Tank Truck	1.000.000
8	Utilization Company	8.000.000
9	Upper Pelindo 2	4.000.000
Total		22.100.000

*(Source above taken from PT. Pelabuhan Indonesia II)

Besides, the problem is that the application process for the demolition of ship waste in Tanjung Priok port is quite long. The shipping company or representative agent no later than 2 days before the ship docked. In 2015, the M.V Thana Bitum ship was authorized by PT. Evergreen, M.V Geberly express ship which was represented by Serasi Shipping, and the M.V Fesco Voyager ship which was authorized by PT. Cruise CMA. The three vessels are not served for the disposal of used waste or sludge oil. This is because agents representing service applicants provide shipping applications less than 2 days before the ship is docked[10]



*(Source above taken from PT. Pelabuhan Indonesia II)

Figure 1. Standard Operation Procedure (SOP) B3 Waste Management at The Reception Facilities (RF) Port Branch Of Tanjung Priok

The picture describes shipping groove requests at the Tanjung Priok Reception Facility. The ship informs the existence of waste to the shipping agent; shipping agent submits service requests to Reception Facility; Reception Facility manages 2 permits to Harbour Master (Permit for movement and loading and unloading of toxic and dangerous material); Crew of Reception Facility takes waste to the ship; Reception Facility takes ship B3 waste (toxic dangerous goods) and provides proof of service in the form of certificate; crew brings Reception Facility to base Reception Facility; Crew Reception Facility transfers or discharges waste from barge to collection point or directly to tank car and requests permission to issue B3 waste from the port to the Tanjung Priok port authority office; the Reception Facility crew transfers or discharges waste from the collection point to the tank truck; the truck exits the port to the company utilizing the utilization or destruction of B3 waste (Toxic and Dangerous Material).

4. Conclusion

The integrated system for monitoring B3 waste vessels is still in the process of making the Port Waste System Management (PWSM) application that will be integrated with the internet port. This has not been implemented yet that makes ships which will dispose of their waste cannot be known. Moreover, it needs coordination between agencies to solve the problem related to regulation and monitoring systems integrated B3 waste so that ships dispose of B3 waste into Reception Facility. Furthermore, sanctions are needed if there are differences in waste on the log-book sheet and the vessel waste loading tank. It can be known whether the

vessel is properly disposing of its waste in the previous port or dumping it into the sea when the ship sails.

5. References

- [1] Jusna and T. Nempung, "Peranan Transportasi Laut Dalam Menunjang Arus Barang Dan Orang Di Kecamatan Maligano Kabupaten Muna," *J. Ekon.*, vol. 1, no. 1, pp. 189–200, 2016.
- [2] Pemerintah Republik Indonesia, "Undang - Undang Nomor 17 tahun 2008 Tentang Pelayaran," *Pemerintah Republik Indones.*, 2008.
- [3] N. Ahmadi, T. Kusumastanto, and E. I. Siahaan, "Strategi Pengembangan Pelabuhan Berwawasan Lingkungan (Greenport) Studi Kasus: Pelabuhan Cigading-Indonesia," *War. Penelit. Perhub.*, vol. 28, no. 1, p. 9, 2018.
- [4] Kementrian Perhubungan, "Peraturan Menteri Perhubungan nomor PM 29 Tahun 2014 Tentang Pencegahan Pencemaran Lingkungan Maritim," 2014. .
- [5] R. K. Yin, *Qualitative Research From Start to Finish*. The Guilford Press, 2011.
- [6] DR. DAVID A. LASSE, *SHIPPING RESEARCH METHOD*, 1st ed. JAKARTA: PT RAJAGRAFINDO PERSADA, 2018.
- [7] Sugiyono, *METODE PENELITIAN KUANTITATIF, KUALITATIF, DAN R&D*, 23rd ed. Bandung: ALFABETA, cv, 2016.
- [8] Kementrian Lingkungan Hidup, "Peraturan Menteri Lingkungan Hidup nomor 3 Tahun 2007 Tentang Fasilitas Pengumpul dan Penyimpanan Limbah B3 di Pelabuhan," 2007. .
- [9] Kementrian Lingkungan Hidup, "Surat Keputusan Menteri Lingkungan Hidup nomor 87 Tahun 2011."
- [10] Dwi, "Ketua APLI: Tidak Dilayani Kapal Asing Bersihkan Limbah B3 Bisa Merusak Citra," 2015.