BEFORE THE NATIONAL GREEN TRIBUNAL

PRINCIPAL BENCH AT NEW DELHI

APPEAL NO: 49 OF 2018

(EARLIER APPEAL NO: 04 OF 2017 (WZ))

IN THE MATTER OF:

CONSERVATION ACTION TRUST & ANR. ...APPELLANTS

VERSUS

UNION OF INDIA & ORS. ...RESPONDENTS

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THROUGH

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DATE: 18.11.2020

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RESPONSE ON BEHALF OF THE APPELLANT ON THE REPORT OF THE MINISTRY OF ENVIRONMENT FOREST AND CLIMATE CHANGE DATED JULY 2020

MOST RESPECTFULLY SHOWETH:

1. That the above titled Appeal has been filed against the Environmental Clearance dated 02.11.2016 granted for the upgradation and expansion of the existing ship recycling yard at Alang Sosiya, Gujarat. The present case is against expansion of ship breaking yards in Alang by adding more area of the inter-tidal zone (i.e. CRZ-I (b)) for the purpose of breaking old ships on the beach. It is an admitted fact on behalf of the Project Proponent that the said method, i.e., beaching method is the least environment friendly and has the highest pollution potential.

2. That on 19.08.2019, this Hon'ble Tribunal had passed the following order:-

> *"After taking into consideration the issues raised by the applicant and also the prayer, inter alia, that* ***a Comprehensive Impact Assessment with respect to the existing environment impact due to Beaching method and Ship Breaking method be called for, we direct the Ministry of Environment, Forest and Climate Change to have an environment audit conducted through an agency i.e. National Institute of Oceanography or NEERI, in compliance of CRZ Notification****. Let the study be done within a period of three months positively."*
>
> (Emphasis Added)

Thus, it is the Ministry of Environment Forest and Climate Change was given a clear mandate of undertaking a "comprehensive" assessment of the impact of the beaching method of ship breaking at Alang.

3. That subsequently, the Ministry has filed a report titled *"**Marine Environmental Monitoring and Verification for Compliance of CRZ Notification at Alang Ship Recycling Yard**"* in July 2020. The present response on behalf of the Appellant is being filed in relation to the said report.

4. At the outset, the Appellant would like to make the following submissions with respect to the MoEFCC report and the findings, observations and conclusions made therein:-

   i. ***Firstly,* the conclusions of the study are completely contrary to the findings in the report.** The study clearly found that the levels of toxic heavy metals were highly exceeding in the water as well as sediment samples taken from the shore and inter-tidal near shore locations. The findings at Table 5.1.5 at Page no. 162 of the Report clearly shows exceeding levels of heavy metals such as chromium, manganese, iron, cobalt, nickel, copper, zinc, arsenic, cadmium and lead in the onshore and near shore water samples. It is pertinent to note that a major ship run off from ship breaking activities is that of Mercury (Hg). However, the NIO failed to conduct any analysis of the water samples for Mercury in the entire report. Thus, it is clear that the presence of such high and toxic levels of heavy metals can be attributed only to the ship breaking activity. However, the report concludes that "*the impact of ship breaking activities on the marine environment is not significant*". This is clearly contrary, and it is submitted that this Hon'ble Tribunal may pass directions to the Project Proponent to discontinue with this highly polluting method of ship breaking and shift to a "safe and environmentally sound" methods of ship breaking.

   ii. That despite such categorical findings, the Report concludes as follows:-

> *"In general, the ecology of coastal water of Alang is seen similar to that of surrounding area of Bhavnagar and Dahej and it compares well with earlier studies of 2007–08 in Alang area. The adverse impact of ship breaking activities on water quality, sediment quality and biological characteristics was not significant except a certain intertidal region showing high concentration of PHc and some metals.*
>
> ...
>
> ***Influence of ship–breaking activities on intertidal microbenthic fauna resulting poor standing stock, was localized at Alang**. The results of bioaccumulation suggest that the concentration of all the metals are*

within the specified values for human consumption, except Fe. To confirm the impact of ship breaking activities on the ecology of Alang, the long-term monitoring is essential.
Present study reveals significant improvement in ship-recycling yards with respect to safety, security, health and environment. However, the living area of most of the shipbreaking workers is poor in regards to the infrastructure and sanitization, that can be prioritised in future. *The residential accommodation developed by GMB jointly with shipbreakers association is either insufficient and/or there is no awareness among the workers."*

(Emphasis Added)

iii. ***Secondly,*** **the study clearly states that the entire ship breaking activity is being conducted in CRZ 1 (B),** CRZ III and CRZ-IV **and that the major activities happen in CRZ I (B) area.** (Page 135 of the report). At page 137-138 of the report, it has been observed as follows:-

"*The ship breaking yards including ship breaking units are listed at 7 (b) of the schedule of EIA Notification, 2006 covered under Category 'A', as it comes under the project requiring water front and fore shore facilities.* ***However, by grounding and cutting activities, temporarily disturbance benthic fauna takes place. Therefore, upgradation of ship recycling yard at Alang is highly required for the preservation of coastal environment***"

(Emphasis Added)

The main ground raised by the Appellants in the above titled Appeal is that beaching method is the most polluting and unsafe method of ship breaking. This has been clearly shown to be the observation of the Report as well. **It is pertinent to note that ship breaking by beaching method is not an activity permissible under the CRZ Notification.**

iv. The Report however erred in stating that "*The ship breaking yards including ship breaking units are listed at 7 (b) of the schedule of EIA Notification, 2006 covered under Category 'A', as it comes under the project requiring water front and fore shore facilities."* The Schedule of the EIA Notification, 2006 nowhere states that ship breaking activities require water front and fore shore facilities. The relevant part of the Schedule is reproduced hereunder:-

7(b)	All ship breaking yards including ship breaking units.	All projects

It may be noted that the project in question is "*Upgradation of existing ship recycling yard at Alang-Sosiya, Gujarat for undertaking safe and environmentally sound ship recycling operations.*" **It is pertinent to note**

that a CRZ Clearance can be granted only to an activity which is permissible under the CRZ Notification, 2011.

v. The CRZ Notification, 2011 was issued with a view to ensure livelihood security to the fisher communities and other local communities, living in the coastal areas, and, to conserve and protect coastal stretches, its unique environment and its marine area and to promote development through sustainable manner based on scientific principles taking into account the dangers of natural hazards in the coastal areas, sea level rise due to global warming. The Notification, thus, restricts the setting up and expansion of any industry, operations or processes and manufacture or handling or storage or disposal of hazardous substances as specified in the Hazardous Substances (Handling, Management and Transboundary Movement) Rules, 2009 within the CRZ area.

vi. In order to achieve the above objective, The CRZ Notification provides for two categories of restrictions:

- Prohibited Activities
- Regulated Activities

As a general principle, in all CRZ areas, the following prohibition has been imposed under the Notification under Para 3. The relevant provision is reproduced hereunder:

> *"3. Prohibited activities within CRZ,- The following are declared as prohibited activities within the CRZ,-*
> *(i) Setting up of new industries and expansion of existing industries.."*

There are several exceptions to this general prohibition under Para 3 (i) from clauses (a) to (e). The provision under clause (a) would be relevant in the present case:-

> *"(a) those directly related to waterfront or directly needing foreshore facilities;*
> *Explanation: The expression "foreshore facilities" means those activities permissible under this notification and they require waterfront for their operations such as ports and harbours, jetties, quays, wharves, erosion control measures, breakwaters, pipelines, lighthouses, navigational safety facilities, coastal police stations and the like.;"*

The most environmentally sound manner of ship breaking is the dry docking method which has already been admitted by the Project Proponent in the EIA Report submitted to the Ministry of Environment Forest and Climate Change. The dry docking method does not require waterfront facilities for its operation.

vii. As far as Regulation of Permissible activities in CRZ areas are concerned, Para 4 of the CRZ Notification states as follows:

> *"4 (i) (a) Clearance shall be given for any activity within the CRZ only if it requires waterfront and foreshore facilities"*

viii. Para 8 of the Notification deals with 'norms for regulation of activities permissible under the notification. Sub Para (i) states the development or construction activities in different categories of CRZ shall be regulated by the concerned CZMA in accordance with the norms stipulated in the para. It is pertinent to point out that the expression used so far as the restriction is concerned is 'shall' and not 'may'. As such it is mandatory in nature. The relevant provisions of the notification are reproduced hereunder:-

> *"8. Norms for regulation of activities permissible under this notification,-*
> *(i) The development or construction activities in different categories of CRZ shall be regulated by the concerned CZMA in accordance with the following norms, namely:-*
> *...*
> *I. CRZ-I,-*
> *(i) no new construction shall be permitted in CRZ-I except,-*
> *(a) projects relating to Department of Atomic Energy;*
> *(b) pipelines, conveying systems including transmission lines;*
> *(c) facilities that are essential for activities permissible under CRZ-I;*
> *(d) installation of weather radar for monitoring of cyclones movement and prediction by Indian Meteorological Department;*
> *(e) construction of trans harbour sea link and without affecting the tidal flow of water, between LTL and HTL.*
> *(f) development of green field airport already approved at only Navi Mumbai;"*

There is a specific provision with respect to CRZ I (B) area between LTL and HTL which are not ecologically sensitive. The relevant portion is reproduced hereunder:-

> *"(ii) Areas between LTL and HTL which are not ecologically sensitive, necessary safety measures will be incorporated while permitting the following, namely:-*
> *(a) exploration and extraction of natural gas;*
> *(b) construction of dispensaries, schools, public rainshelter, community toilets, bridges, roads, jetties, water supply, drainage, sewerage which are*

required for traditional inhabitants living within the biosphere reserves after obtaining approval from concerned CZMA.
(c) necessary safety measure shall be incorporated while permitting such developmental activities in the area falling in the hazard zone;
(d) salt harvesting by solar evaporation of seawater;
(e) desalination plants;
(f) storage of non-hazardous cargo such as edible oil, fertilizers and food grain within notified ports;
(g) construction of trans harbour sea links, roads on stilts or pillars without affecting the tidal flow of water."

It is clear from the above listed permissible activities that ship breaking/recycling is not permissible in CRZ-I (B) area.

ix. It is pertinent to point out that while EIA Notification, 2006 is a general law applicable to all projects irrespective of where the project is set up, the CRZ notification is a 'site specific' law which specifically regulates and prohibits certain activity in coastal stretches. The main objective of the notification has been spelt out in the preceding paragraph and only that interpretation of the CRZ notification is permitted which will aid in meeting the objective of the principle objective of the Notification. Any interpretation which is contrary to the objective will defeat the purpose of the legislation.

x. Another critical issue which has not been considered at all by the Report is the presence of mangroves in and around the area. The presence of mangroves clearly shows that the area would also be categorised as CRZ 1A area. As per the CRZ Notification, 2011 ship breaking activities are impermissible in such ecologically sensitive areas. The Appellant would like to put on record photographs of the mangroves in the area as **ANNEXURE-1**

xi. That in the matter ***of Meenava Thanthai K.R. Selvaraj Kumar Meenavar Nala Sangam v. Union of India & Ors***. (Appeal No. 4 of 2019 (SZ)), this Hon'ble Tribunal vide judgment dated 30.09.2020 has noted that the CRZ Notification was drafted very carefully, and therefore must be strictly construed, otherwise there would be adverse impact on the coastal environment. The relevant part of the judgment is reproduced hereunder:

"if it is liberally construed and it was allowed to provide beyond that area without any restriction then, it is likely to be misused by the authorities and such facilities will be permitted in such zone indiscriminately throughout the foreshore area of the Coastal Zone which will have a great

adverse impact on coastal environment and also it will affect the interest of the traditional fishermen community as such."

THEMATIC RESPONSE OF APPELLANT ON THE FINDINGS OF THE REPORT

5. That the Appellant would now respond to each of the findings of the Report which would clearly would clearly disprove the conclusion of the report that the impact of ship breaking activities on the marine environment is not significant:

I. EXISTING SHIP BREAKING ACTIVITIES

6. That the direction of this Hon'ble Tribunal was to undertake an environmental audit of the ship breaking activities by way of beaching method as is clear from the order dated 19.08.2019. However, the entire report has been prepared with the assumption that there is no other method of ship breaking other than beaching. For instance, in the Executive Summary, the report states:

> *"Intertidal zone exposes to around 3 km during ebb tide,* ***which makes it convenient for ship breaking activities."***
>
> (Emphasis Added)

The Report completely misses the point that environmentally safe and sound ship breaking does not require using the inter-tidal zone at all. It is reiterated that the breaking of ships in the inter-tidal area is not an activity permissible under the CRZ Notification, 2011. The convenience of ship breaking units cannot trump the requirement to protect the coastal areas under the CRZ Notification.

Hong Kong Convention

7. The Report refers to the fact that India has signed the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 and that several ship yards are now compliant with the requirements of the said Convention. The report in the Executive Summary observes thus:

> *"Since India has accepted it, ship recyclers at Alang-Sosiya have willingly acquired a statement of compliance to HKC by International Classification Societies as recognized by DG Shipping. During field collection random number of ship recycling yards were visited to evaluate the status of recycling yards.* ***During visit it was found that as per the convention followed by recycler, some of yards come under green category and some have still to come to the level so as to receive green category status****. Thus around 70% of recycling yards come under green category."*
>
> (Emphasis Added)

In this regard, it is important to highlight the following facts:-

i. The Hong Kong Convention has not yet entered into force. Further, there are no authorised classification societies which have been recognised by the Government of India who are granting these "Statement of Compliance" (SoC). It is submitted that these SoCs are therefore issued on a business-to-business basis. Yard owners have contracted classification societies – acting as private consultants – to assess compliance with the Hong Kong Convention requirements and therefore, the veracity of the same is questionable.

ii. The current SoCs issued to beaching yards have been given on the basis of check-listing **whether the yards can fulfil the requirements under the Hong Kong Convention as interpreted by the classification societies, without looking at the actual practice of the yards**. To illustrate how void these certificates are: the Hong Kong Convention, and Indian law, requires that environmental monitoring is carried out at the yard. This requirement thus needs to be fulfilled for receiving a SoC. Many yards in Alang-Sosiya use the same company to conduct environmental monitoring. The findings of the analysis of water samples and the sediment samples in the Report clearly show how fraudulently these SoCs are obtained.

iii. That in contrast some of the big ship recycling companies at Alang such as Shree Ram and Priya Blue had applied for certification under the European Commission (EC) ship breaking laws which are much more stringent in comparison to the HKC standards. For grant of such certification, the ship breaking sites are first inspected by the EC to check whether the strict standards have been met or not. As per recent reports available on the official website of the EC, these shipyards have not yet attained full compliance with the EC ship breaking standards. With regard to Shree Ram, the report states that there are serious concerns with regard to the lack of proper health care facilities to workers and management of downstream waste. With regard to Priya Blue, the report highlights serious concerns with respect to the ship cutting on the inter-tidal zone and control of leakages, lack of worker safety

measures, lack of onsite and downstream waste management, lack of environmental management plan, lack of compliance with Indian labour laws etc.

Copy of relevant pages of the site inspection reports of the European Commission of Shree Ram Vessel Scrap Pvt. Ltd. and Priya Blue Industries Pvt. Ltd. is annexed herewith as **ANNEXURE-2 (COLLY)**

iv. Therefore, clearly, SoCs under Hong Kong Convention do not provide a guarantee that conditions at the yard are safe and environmentally sound. Not only are there problems with shipbreaking in the intertidal zone ignored, but it is understood some yards have SoCs without impermeable flooring also in the secondary cutting zone. Finally, SoCs are issued to yards where hazardous materials cannot be safely managed downstream - but are instead left to accumulate in small storage facilities onsite.

v. Thus, it is not sure how and what basis, the report has found some recyclers to have come under "green category". At Section 2.9 and 2.10 of the Report, it has been found that "*ship recycling at Alang and India comply with Ship Breaking Code, 2013 and also comply in general with the HKC 2009*". The Report does not give any reasons as to how it has reached such a conclusion.

8. That an investigative report as well as documentary published in the BBC in March 2020 titled *"Breaking Bad Uncovering The Oil Industry's Dirty Secret"*[1] which clearly shows how the entire beaching method of ship breaking adopted at Alang is environmentally polluting and unsafe.

The Appellant is attaching some of the critical findings of the BBC report titled "*Breaking Bad Uncovering The Oil Industry's Dirty Secret*" as **ANNEXURE-3**

The Appellant is also attaching photographs which clearly reflect the true nature of activities in Alang ship breaking yards as **ANNEXURE-4**

9. That the MoEF Report gives a very misleading account of the state of affairs at the Alang Ship breaking yards. In Section 2.2., the report observes as follows:-

"*ii) Operations in Alang recycling yard started in 1982 and* ***today it is one of the choicest ship-recycling destinations for the ship owners around the***

[1] https://www.bbc.co.uk/news/extra/ao726ind7u/shipbreaking

> ***world**. The longest ship ever built, MV Seawise Giant, was beached there for demolition in December 2009. Alang accounts for nearly 90% of the ships broken in India, with other centers located in the states of West Bengal, Andhra Pradesh, Kerala, Tamil Nadu, and Maharashtra.* ***Noting its level of compliance, its past development, in addition to proposed expansion, Alang represents the Indian image of ship-recycling.***
> *iii) Recycling of ships on a large-scale requires extensive care on issues like physical, social and environmental infrastructure as well proper safety and environment management. Successful implementation of safe and environmentally sound ship-recycling requires not only financial resources, but also many other governing factors such as specialized knowledge of ship dismantling, chemistry between the ship recyclers and workers, availability of land and preparedness of ship recyclers and regulators to undertake skillful operations. The GMB is the State Government Agency working as the extended arm of Port State Control. DG Shipping, India, a designated regulator, has put in sincere efforts to develop these requirements to accelerate the growth of the ship-recycling industry, specifically at Alang.*
> *iv) Though the largest one, in order to boost this recycling industry,* ***Alang Ship Recycling has undergone continued efforts and has been adopting a 'best practice approach' to strengthen in the areas of infrastructure, regulations, health and safety, environmental aspects, economics and marketing, and thus to contribute to almost one third of the global ship-recycling volume."***
>
> (Emphasis Added)

In this regard, it is submitted that Alang is one of "choicest ship recycling destination" due to the fact that it is also one of the cheapest and least regulated destinations in terms of environmental compliances and labour costs. Further, it is clear from the findings of the BBC report as well as the photos annexed at Annexure-4 that ship recycling at Alang is far from "adopting a best practice approach"

10. At Section 2.5, the report has given the details of the waste received at the TSDF Facility at Alang, where allegedly, all hazardous waste is sent to for storage and disposal. However, the table does not mention any details on how much mercury laden waste or waste laden with heavy metals are brought in and stored/disposed of. It is pertinent to note that a large part of the waste from ship recycling are usually laden with mercury and other heavy metal wastes.

II. WATER QUALITY AND SEDIMENT SAMPLE ANALYSIS

11. That the findings in relation to quality of water as well as sediment samples are crucial to understand the true impact of recycling and breaking ships on the beach. In the present case, before adverting to the critical findings in the MoEFCC Report, the following must be noted.

i. The methodology of the July 2020 MoEFCC Report involved:

- measuring levels of the following contaminants in sediment samples: organic carbon (C_{org}), phosphorus, chromium (Cr), manganese (Mn), iron (Fe), aluminum (Al), cobalt (Co), nickel (Ni), copper (Cu), arsenic (As), zinc (Zn), cadmium (Cd), lead (Pb), mercury (Hg) and petroleum hydrocarbons [PHc]; and
- measuring levels of the following contaminants in water samples: temperature, salinity, pH, suspended solids, dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), nitrate, nitrite, ammonia, phosphate, [PHc], phenols and dissolved metals.

ii. It is pertinent to note that several key parameters which are specific to ship recycling and breaking activities were not even analysed in the Report. These include, polycyclic aromatic hydrocarbons, polychlorinated biphenyls, and organotins. A peer-reviewed study, published in 2006 by researchers primarily with Jahangirnagar University in the Journal Environmental Science & Policy, explains the importance of these parameters with respect to ship-breaking activities:

> *"4.4. Polycyclic aromatic hydrocarbons (PAHs)*
> *"**PAHs are released from torch cutting, smouldering paint, and burning waste in ship-breaking areas** (Hossain and Islam, 2006; Hossain and Rahman, 2010). Many congeners of PAHs have been found in ship-breaking yards around the world. Some studies have recorded many congeners of PAHs in both sediment and seawater in ship-breaking yards (Reddy et al., 2005; Neşer et al., 2012) (Table 4). **PAHs accumulate in dust, sediment and the tissue of biological life forms. As a result, they can be absorbed through inhalation, dermal contact or the food chain. PAHs cause malignant tumours by interfering with the breakdown of enzymes in the lungs, stomach, intestines and skin** (Hossain and Islam, 2006; Hossain and Rahman, 2010). Some PAHs can combine with genetic material (DNA) causing cell damage and mutations. Exposure can also suppress the immune system (Greenpeace, 2000).*
> *4.5. Polychlorinated biphenyl compounds (PCBs)*
> *"**PCBs are highly toxic and persistent pollutants that are widely used in the shipbuilding industry for their insulating properties. PCBs are released from products that contain PBCs, such as cables, capacitors, transformers and similar items, during the dismantling of old ships**. There is inadequate research on PCB contamination in Bangladesh. DNV (2001) found S PCBs (7 toxic congener's S (PCB28–PCB180)) from 1.444–0.2 mg/kg in dry weight of soil from a steel plate re-processing site in the Chittagong ship-breaking yards. Sarraf et al. (2010) reported PCBs from 0.01–11.52 mg/kg in the soil of the ship-breaking yard in Gadani, Pakistan. In addition, PCBs from shipbuilding have also been investigated in Nagasaki Bay, Japan, where more than 10,000 mg/kg PCBs were detected in sediment samples. According to generally accepted standards, sediment that contains more than 300 mg/kg PCBs are considered to be strongly polluted (Andersen, 2001). **PCB persists in the environment for long periods, gradually accumulating in the fatty tissue of living***

organisms, and can cause cancer, liver damage, reproductive impairments, immune system damage and behavioural and neurological damage *(Tanabe, 1988; Hossain, 1989, 2004).*

4.6. Organotins

"Many organotins are found in ship-breaking processes, including some notorious organotins such as Tributyltin (TBT), Triphenyltin, Dibutyltin, Dicyclohexyltin, Diphenyltin Tricyclohexyltin *(Hossain and Islam, 2006; Hossain and Rahman, 2010). DNV (1999) identified Monobutyltin (MBT) ranges from 1.9 to 0.72 mg/kg, Dibutyltin (DBT) ranges from 2.4 to 1.38 mg/kg and Tri-butyltin (TBT) ranges from 25 to 17 mg/kg, all in dry weight, in the soil from a steel plate re-processing facility in Chittagong's ship-breaking area.* ***TBT is used in anti-fouling paints and is considered to be one of the most toxic compounds in aquatic ecosystems. Organotins are nerve toxins that accumulate in the blood, liver, kidneys and brain. Organotins also can disrupt the endocrine system in humans. Butyltins disrupt the critical functions of human immune cells, particularly natural killer cells*** *(NK cells) (Hossain and Islam, 2006). Skin, eye and lung protection are mandatory for any workers who come into contact with TBT-containing paints (Adams, 1999; DNV, 1999; USEPA, 2000; ILO, 2003)."1*

(Emphasis Added)

iii. That a critical issue that needs to be pointed out with respect to the analysis conducted in the report is with respect to the choice of locations for collecting samples. It is submitted that **most of the sampling locations are too remote to represent areas impacted by ship-breaking activities.** With respect to sampling locations, page 30 of the Report states:

> *"The present study was conducted at 26 subtidal stations and 4 intertidal transects as evident in Figure 1.1.1. Station 1–6 were sampled from the shore, station 7–12 were around 1.5 km away from shore, station 13–18 were around 4 km away from the shore and station 19–23 were around 6 km away from the shore."*

The coordinates of the sampling locations are provided on pages 30-31 of the Report have been mapped on Google Earth as follows:-

As admitted in the report, Stations 7-12 are at a distance of 1.5 km from the shoreline and Stations 13-18 are at a distance of 4 km from the shoreline. It is important to note that at this distance, the sediment samples are likely too remote from ship-breaking activities at the Alang Ship-breaking Yard to be affected by such activities. Furthermore, Station 1 and Station 6 are too far northeast and too far southwest, respectively, to represent active ship-breaking areas. Inspection of Google Earth images of these locations show that ship-breaking has not occurred at Station 1 and Station 6.

Therefore, in essence, only Stations 2-5, and Transects I-IV, are representative of conditions where ship-breaking occurs and truly depicts the impact of the ship breaking activities on water and sediment quality.

Levels of Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Mercury and zinc in shore sediments exceed standards:-

12. That as mentioned in the preliminary submissions, the Report clearly found concerningly high levels of heavy metals in the sediment analysis. This is clear from the findings presented in Table 5.1.5 of the Report. It is submitted that in

India there are no stadnards which have been notified for marine sediment quality. However, international agencies, such as the U.S. National Oceanic and Atmospheric Administration (NOAA), have developed sediment quality guidelines that reflect the best available science about how aquatic life responds to levels of toxic metals in marine sediments. These sediment quality guidelines include:

1) concentration below which adverse effects are seldom observed (Effects Range Low, ERL and Threshold Effect Level, TEL, respectively); and

2) the concentration above which adverse effects are common (Effects Range Median, ERM and Probable Effects Level, PEL, respectively).

The Appellant would like to show how toxic the sediment levels are as per the findings of the Report at Table 5.1.5:-

Sediment Quality Results, µg/g	As	Cd	Cr	Cu	Hg	Ni	Pb	Zn
Station 1	13.4	0.30	413.0	92.0	0.28	67.0	25.4	274.0
Station 2	11.5	0.28	156.0	141.0	0.06	55.0	55.9	375.0
Station 3	8.4	0.28	134.0	109.0	0.22	51.0	26.2	164.0
Station 4	6.7	0.19	145.0	110.0	0.17	56.0	14.3	97.0
Station 5	26.1	0.56	286.0	227.0	0.21	67.0	80.3	1214.0
Station 6	11.0	0.18	207.0	86.0	0.20	50.0	17.5	122.0
Transect 1 - upper	18.8	0.81	219.0	149.0	0.55	74.0	55.2	608.0
Transect 1 - middle	16.9	0.34	204.0	146.0	0.03	69.0	66.8	455.0
Transect 1 - lower	9.7	0.30	326.0	90.0	0.07	69.0	22.1	276
Transect 2 - upper	7.6	0.26	105.0	111.0	0.40	52.0	21.5	136.0
Transect 2 - middle	10.2	0.39	166.0	103.0	0.05	51.0	41.4	250.0
Transect 2 - lower	7.4	0.31	117.0	111.0	0.06	55.0	20.4	131.0
Transect 3 - upper	8.9	0.42	122.0	127.0	0.47	61.0	29.5	174.0
Transect 3 - middle	9.0	0.33	112.0	137.0	0.04	55.0	32.1	174.0
Transect 3 - lower	7.9	0.38	120.0	126.0	0.06	58.0	29.4	179.0
Transect 4 - upper	9.7	0.28	158.0	85.0	0.30	53.0	16.4	127.0
Transect 4 - middle	8.0	0.19	154.0	51.0	0.03	37.0	9.8	69.0
Transect 4 - lower	9.2	0.26	153.0	85.0	0.05	50.0	16.1	113.0
US NOAA - TEL	7.2	0.7	52.3	18.7	0.13	15.9	30.2	124.0
US NOAA - ERL	8.2	1.2	81.0	34.0	0.20	20.9	46.7	150.0
US NOAA & Canada - PEL	41.6	4.2	160.0	108.0	0.70	42.8	112.0	271.0
US NOAA - ERM	80.0	9.6	370.0	270.0	0.70	51.6	218.0	410.0

As indicated above, levels of Chromium (Cr), Copper (Cu), Nickel (Ni) and Zinc (Zn) were found in numerous sediment samples collected in February 2020 at concentrations above which adverse effects are common. In addition, arsenic

(As), mercury (Hg), and lead (Pb) were found in numerous sediment samples collected in February 2020 at concentrations above which adverse effects are observed.

Levels of Copper and Mercury Water Samples Exceed Marine Water Quality Criteria

13. That in addition to the alarmingly high levels of heavy metals in the sediment samples, the Report has also found that mercury levels in the water samples to be exceeding standards. It is pertinent to note that Mercury is a potent neurotoxin that bioaccumulates as methylmercury in fish and other marine species and thus can have adverse impacts on not just marine biodiversity but also human health.

III. IMPACT ON MARINE BIODIVERSITY

14. That it is important to note that the Report uses data from 1997-2007 and 2007-2008 as a baseline to evaluate the results of the 2020 study. The Report concludes that the impacts of ship-breaking are negligible because many of the chosen parameters showed little change between 1997 and 2020. However, the use of studies from 1997-2007 and 2007-2008 as a baseline is misleading. The Report neglects to point out that ship-breaking activities at the study site were significant from 1997-2007 and 2007-2008. On average, 250 ships per year were broken at the Alang yard between 1997 and 2008. Therefore, any studies done during this time frame do not give an accurate picture of the baseline ecosystem because the activities of concern were already occurring. Without accurate baseline data, it is impossible for stakeholders to properly understand the impact of ship-breaking activities on the Alang ecosystem.

15. That further, it is submitted that the Report failed to assess the impact from the toxic substances on marine biodiversity. In this regard the following issues are critical:-

    i. The Report lists the suite of toxic substances that are expected to be found at the ship-breaking facility:

> *"Various types of wastes such as plastic, rubber, ceramic, Ferrous and Non–ferrous Metals, Oily waste, Lead Acid Batteries, Asbestos Containing Material (ACM) waste, Glass Wool, Thermocol, Paint*

> *Chips, TBD, PCB, Wood waste, Broken Glass, Food Waste, Expired Medicines and electronic equipment are generated during the course of ship breaking activity."*[2]

Despite this comprehensive list, only data on the bioaccumulation of metals were collected and reported. The Report described the protocol for evaluating the bioaccumulation of metals in fish as follows:

> *"vi) Bioaccumulation: Fishes collected from the help of the local fishermen were identified, dissected by using clean technique to avoid contamination. Different tissues were dried <55°C, powdered, digested in microwave assisted digestion system and analysed for different element using ICP–MS."*[3]

ii. The bioaccumulation of heavy metals in fishes, particularly fishes bound for the seafood market, is extremely important to consider. Certain heavy metals may reach toxic levels as they bioaccumulate in fish, endangering humans through neurotoxicity and increased oxidative stress.[4]

iii. The Report does not specify which tissues were examined. Metabolically active tissues such as the gills, kidneys, and liver accumulate more heavy metals than tissue in other parts of the body and may provide a more accurate picture of bioaccumulation in fish.[5]

iv. Further, the Report fails to assess the impacts from other toxic substances listed in the report as waste from the ship-breaking yard, including PCBs, plastics, and PAHs. Polychlorinated biphenyls (PCBs) are responsible for a wide range of toxic responses in animals, including weight loss, carcinogenesis, and neurotoxicity.[6] The effects of PCBs on animals, including humans, are of major concern. The Report did not investigate the bioaccumulation of PCBs in the study area. Plastics and microplastics are often ingested by animals, including zooplankton.[7] As plastic particles

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[2] Report, p. 13.
[3] Report, p. 37.
[4] Ali, H., E. Khan, and I. Ilahi. 2019. Environmental Chemistry and Ecotoxicology of Hazardous Heavy Metals: Environmental Persistence, Toxicity, and Bioaccumulation. Journal of Chemistry; Hindawi. https://doi.org/10.1155/2019/6730305
[5] Dural, M., M. Z. Lugal Göksu, A. A. Özak, and B. Derici. 2006. Bioaccumulation of Some Heavy Metals in Different Tissues Of *Dicentrarchus labrax* L, (1758), *Sparus aurata* L, (1758) and *Mugil cephalus* L, (1758) from the Çamlık Lagoon of the Eastern Cost Of Mediterranean (Turkey). Environmental Monitoring and Assessment 118(1–3):65–74. https://doi.org/10.1007/s10661-006-0987-7
[6] Agency for Toxic Substances and Disease Registry. Addendum to the Toxicological Profile for Polychlorinated Biphenyls (PCBs). Atlanta GA. http://www.atsdr.cdc.gov/toxprofiles/pcbs_addendum.pdf
[7] Andrady, A. L. 2011. Microplastics in the marine environment. Marine Pollution Bulletin 62(8):1596–1605. https://doi.org/10.1016/j.marpolbul.2011.05.030

accumulate up the food chain, they are ingested by larger animals, including humans. The Report did not look at the bioaccumulation of plastics in plankton, fish, or any other organism. Polycyclic Aromatic Hydrocarbons (PAHs) are carcinogenic and developmentally toxic, among other harmful impacts. A major source of PAHs in the marine environment is oil spills. Bioaccumulation of PAHs in the marine environment is a major concern.[8] The report did not assess the bioaccumulation of PAHs in the study area.

v. Without these toxicity data, the Report fails to provide the information needed for stakeholders to understand the impact of ship-breaking at the Alang facility on the marine ecosystem. Therefore, it is submitted that a full study of these impacts must be conducted before an assessment can be delivered.

16. That the Report also fails to study the impact on fish catch from traditional fishing activities. At Page x of the Report, it has been stated thus:-

> *"Evidently, no active commercial fishing exists in this region excepting some gill netting or bag-netting or other traditional gears by local fishermen. Enquiries with the local fishermen also confirm that the trawlers generally do not operate in this area."*

This excerpt gives the impression that there are only a few local fishermen operating with "traditional gear." However, a 2002 Report titled " Critical Habitat Information System for the Gulf of Khambhat- Gujarat" prepared by the Department of Ocean Development, Government of India cites the Department of Fisheries, Gandhinagar, reporting that the Gulf of Khambhat is used by thousands of fishermen whose activities are well-established in the Bhavnagar district. Although these fishermen do not operate directly out of Alang, they likely use the adjacent and offshore waters and their catch may be impacted by ship-breaking activities. The Applicant is extracting a table from the said report which clearly

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[8] Honda, M. and N. Suzuki. 2020. Toxicities of Polycyclic Aromatic Hydrocarbons for Aquatic Animals. International Journal of Environmental Research and Public Health 17(4). https://doi.org/10.3390/ijerph17041363

shows that in the years 1999-2000, there were about 833 active fishermen in Bhavanagar area alone.

Table 10 - Marine Fish production in the Gulf of Khambhat during 1999-2000

District / Taluk	No. of landing centres	Active fisher Men	Fishing boats	Fish landings (tons)	% of share
Bhavnagar Dist					
Bhavnagar	2	833	24	414	2.54
Ghogha	2	691	43	1316	8.08
Talaja	3	439	52	1444	8.87
Mahuva	2	265	28	668	4.10

Most of these fishermen are operating from non-mechanized crafts using trawl nets, gill nets, drag nets and cast nets. Despite the absence of mechanized trawlers and gillnetters, fishing is an important source of revenue for people in the region. It is clear that the authors of the Report did not engage with anyone who had local knowledge of the extent of fishing operations in the area.

17. That the Report also failed to study the impact on local shrimp farming in Bhavnagar District. As per the 2002 report referred above, there were around 10 shrimp farmers in Bhavnagar. This number may have increased over the years.

18. That further, the Report at page 76, states as follows:-

> *"the investigations of an ecosystem and particularly of its communities constitute an important part of any ecological assessment"*

Despite admitting so, the Report only presents a limited analysis of fish and plankton species. There is no study on bio-magnification by analysing species higher up the food chain-such as avian species, mammalian species etc. Mudflats are often breeding areas for shrimp and fish, which can be a major draw for shorebirds and other predators. Fauna such as birds and marine mammals can provide important ecosystem services including nutrient cycling and waste decomposition. They are often integral parts of a complex food web. If these animals are present in the ecosystem, impacts to them should be evaluated. If these animals are not currently present, the authors should assess whether the long-term ship-breaking activities in Alang have contributed to their absence.

IV. SOCIAL IMPACT ASSESSMENT

19. Chapter 7 of the Report gives the status of the social issues arising out of the ship-breaking activities. The following observations have been made in this respect:-

> *"Safety measures in the recycling yards at Alang*
> *It was observed that the workers at ship–recycling yards were well acquainted with safety and security method and all those working in the plots were found wearing helmets, safety jackets and boots.*
> *A training institute has been established by GMB at Alang for the training of workers before their engagement for actual work of ship breaking and other activities.*
> *During our field study, we interviewed some of the workers engaged in ship–recycling work. During interaction, it was found that due to training and awareness in workers and enhanced enforcement of norms, the accident has come down drastically in the ship–recycling yards at Alang–Sosiya."*

The photographs annexed at Annexure-4 of the instant response clearly show the workers barefoot on the shore with no safety gear. The report is thus clearly presenting a highly misleading picture.

20. The Report is also misleading in stating that there has been a drastic reduction in accidents in Alang. As per information available on the website of the Department of Industrial Safety and Health, Government of Gujarat, there have been several accidents since 2017- 39 accidents in total. It may be noted that this only shows the reported accidents, actual no. of accidents may well be more than this number.

List of reported accidents by the Department of Industrial Safety and Health, Government of Gujarat is annexed herewith as **ANNEXURE-5**

21. In respect of available health facilities, the report states thus:

> *"7.7 Health facilities at Alang*
>
> *Alang Red Cross Hospitals for Primary Medical Treatment. The hospital is financially assisted by GMB. GMB extended full support to create Multi Speciality Hospital at Alang itself which provides medical services to manpower at Ship Recycling yards and residents of nearby 45 villages around Alang. Another Private Hospital permitted by GMB also known as "Alang Hospital" for Secondary Medical Care. It has 33 beds. It is equipped with an X–ray facility and medical stores. Two doctors are available permanently. For any eventuality, expert doctors are also called to provide treatment to the affected workers."*

22. In this regard, it is submitted that the health facilities are not adequate. The major treatments cannot be done in the Red Cross Hospital. The main government hospital is in Bhavnagar which is one hour journey from Alang. Also, varieties of experts in the red cross hospital are not available.

23. That the report highlights the poor living conditions of the workers. It is submitted that the water and sanitation conditions in these slums are pathetic. As per report titled "*Challenges for implementation of Workers' Rights in Hazardous Industries: A critical analysis of Alang- Sosiya Ship Breaking Yard, Bhavnagar, Gujarat from 1983-2013*" prepared for the NHRC in 2013, there were clear findings of the fact that the facilities provided for the workers were largely inadequate. The shipyard employ about 35,000 migrant workers (as per data in 2013). However, GMB, i.e. the project proponent has only provided 12 stand posts for bathing purposes and 6 toilets. Clearly, this is inadequate to cater to the needs of the workers. Further, the report also highlighted the scarcity for clean drinking water.

24. That a recent report titled "***Working, Living, Occupational Health and Safety Conditions of Workers in Ship Breaking Yards in Alang-Sosiya, Gujarat, India"*** (2019) reflects the actual conditions of the workers at Alang shipyard. The findings are reproduced hereinbelow:-

    - *47% of the workers are gas cutters, 16% loaders, 5% riggers, 8% supervisors, 4% helpers, 12% are unskilled labours and 8% are engaged in diverse types of work.*
    - *85% of the workers are paid on a daily basis and only 15% are salaried workers. Salaried workers do not earn extra wage for their overtime work. 13% are paid within the first seven days of the month, 87% respondents are paid after seven days of every month*
    - *While the average income per day for a daily wage worker is Rs. 379, the average salary per month for a salaried worker is Rs. 14134. The wage for workers vary from plot to plot and is also based on type of work at the yard.*
    - *66% of the workers have informed that provident fund amount from their salary is deducted every month. Out of these, only 20% of the workers have withdrawn their provident funds so far and 46% have informed that*

the plot owners do not cooperate in processing their provident fund amount.

- *57% of the workers get access to drinking water from a facility in their yard, 12% do not get drinking water in their yard and the remaining workers, i.e. 31%, reveal that whilst a drinking water tap exists in the yard, the quality is not suitable for drinking or the water is not available regularly.*
- *87% of the workers do not have access to a dinner hall facility in their work place. Only 12 % of workers have access to a dinner hall facility in their work place, whereas 1% cannot use the dinner hall facility as it is only for show off.*
- *60% of the workers have informed that the first-aid equipment is available in their yard, 29% do not have access or knowledge of a first-aid box in their yards and the remaining 11% stated that the first-aid box in their respective yard is only for show off.*
- *30% of the workers have informed that the safety equipment is available to them in good quality, whereas 36% expressed their dissatisfaction over the quality of safety equipment and 16% have not received any safety equipment.*
- *In the absence of safety equipment and proper training, 52% of the interviewed workers were injured at workplace during the last year. Of these, 61% had received immediate medical support from their plot owners at the workplace and the remaining 39 % did not receive any type of medical support from their plot owners.*
- *30 % of the workers were paid during their leave period due to injury, whereas 52% did not get any wage or compensation when they were on leave, and the remaining 18% continued to work despite their injuries as they were worried to loose wages.*
- *ASSBY has just three simple health facilities, two of them run by the Red Cross Society and a small clinic run by a private doctor. Neither have necessary facilities to treat major injuries and potentially fatal emergencies.*"

Copy of the report titled "Working, Living, Occupational Health and Safety Conditions of Workers in Ship Breaking Yards in Alang-Sosiya, Gujarat, India" is annexed herewith as **ANNEXURE-6**

Therefore, it is clear that this Hon'ble Tribunal's order dated 19.08.2019 has not been complied with by the Ministry of Environment Forest and Climate Change as the report is clearly lacking and inadequate. Further, the issues raised by the Appellant in the above-titled Appeal are clearly substantiated and therefore, it is submitted that the Appeal may be allowed and appropriate directions to ensure no ship breaking occurs in the inter-tidal zone may be issued by this Hon'ble Tribunal.

APPELLANT

THROUGH

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NEW DELHI
DATE: 18.11.2020

1241

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
SITTING AT NEW DELHI

APPEAL NO: 49 of 2018

(Earlier Appeal No. 4 of 2017 (WZ))

IN THE MATTER OF:

Conservation Action Trust & Anr. ...Appellants

Versus

Union of India & Ors. ...Respondents

AFFIDAVIT

I, Debi Goenka, aged 64 years, Indian Inhabitant, Authorised Signatory of Appellant No.1 having its office at 5, Sahakar Bhavan, 1st Floor, LBS Road, Narayan Nagar, Ghatkopar (W), Mumbai - 400 086, residing at B 502, Glengate, Hiranandani Gardens, Powai, Mumbai – 400 do hereby solemnly affirm and declare as under:

1. That I am the Appellant No. 2 in the above titled Appeal and I am conversant with the facts and circumstances of the case and I am competent to swear this affidavit.
2. That the contents of the accompanying Application are true and correct and nothing material has been concealed therefrom.

NOTARY HEMANT JANGAM MUMBAI MAHARASHTRA Regn. No.4762 Expiry Date 20-10-2022 NOTARIAL GOVERNMENT OF INDIA

Debi Goenka

DEPONENT

VERIFICATION

Verified on this 17 NOV 2020 day of November 2020 that the contents of the present Affidavit are true and correct to my knowledge and belief and nothing material is concealed therefrom.

NOTARY HEMANT JANGAM MUMBAI MAHARASHTRA Regn. No.4762 Expiry Date 20-10-2022 GOVERNMENT OF INDIA

BEFORE ME

HEMANT JANGAM
NOTARY. GOVT. OF INDIA
MUMBAI MAHARASHTRA

17 NOV 2020

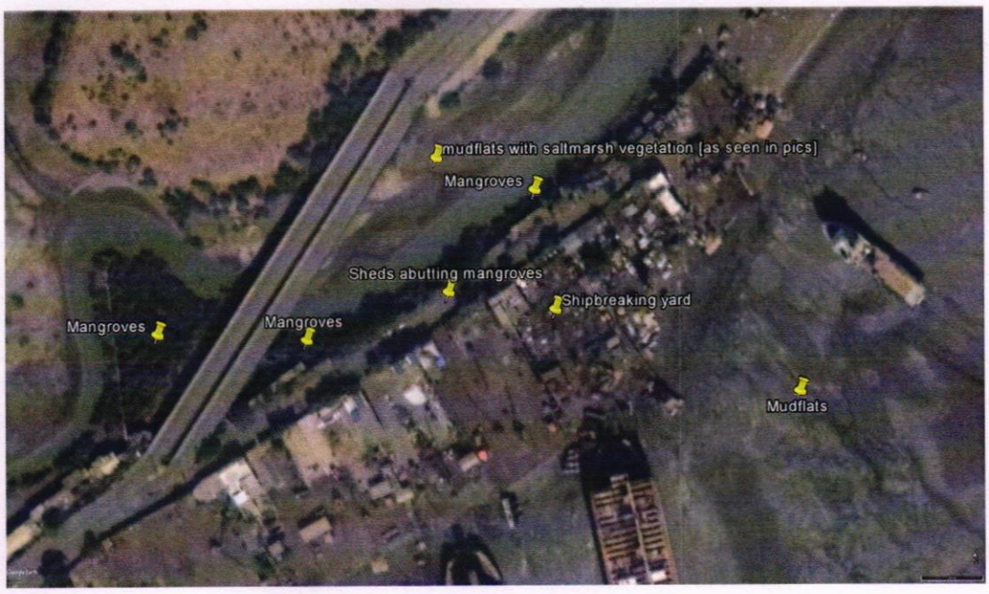
Debi Goenka

DEPONENT

Reg. No. OC/12KXX/12
Sr. No. 416 Pg. No. 35
Date 17 NOV 2020

1242

ANNEXURE-1



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Annexure - 2
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1245

INSPECTION OF A SHIP RECYCLING FACILITY IN INDIA

Site Inspection Report Application 003

European Commission Directorate-General for the Environment

Report No.: 2019-0072, Rev. 2
Document No.: 117PB67Y-7
Date: 2020-06-15

1 EXECUTIVE SUMMARY

The objective of this report is to document the results of the site inspection at Priya Blue Industries Pvt. Ltd., located in Alang-Sosiya (Gujarat, India), following the facility's application for inclusion in the European List of ship recycling facilities.

The first on-site inspection took place on the 24th and 25th of September 2018. This was followed by a second inspection on the 23rd of January 2020. In the context of the two inspection visits, the evaluators also had separate meetings with the Gujarat Enviro Protection and Infrastructure (GEPIL) and the Alang Sosiya Ship Recycling and General Workers' Association (ASSRGWA).

During the site inspections, the facility demonstrated that it is approved by its authorities, has procedures with regards to health and safety and has put in place functioning facilities (cranes, paved areas, warehouses etc.). The facility had also made important investments in the last years to upgrade its ship recycling activities.

During the two on-site inspections, the facility has stated that it is committed to achieving compliance with the requirements of the EU Ship Recycling Regulation. However, based on the results of the inspections, there remain several important areas where the evaluators could not confirm compliance. The identified shortcomings include the following:

1. SRFP: The governing document for the site inspections, defining the baseline of the facility's performance, was the Ship Recycling Facility Plan (SRFP). A paramount task of the inspections was to verify that the SRFP is a living, logical and systematic document accurately reflecting operational practices on the ground. During the inspections, the evaluators could not verify that all procedures and practices observed on the ground were included and explained in the SRFP.
2. Control of leakage: During the first inspection, the facility could not fully demonstrate its ability to sufficiently control leakage, in particular in the intertidal zone. Also, questions remained regarding the facility's compliance with the requirement for handling of hazardous materials only on impermeable floors with effective drainage systems. The main concerns of the evaluators related to the cutting of the ship's double bottom in the intertidal zone. The applicant updated the relevant instructions and procedures related to the protection of the intertidal zone, however further improvements are needed. Furthermore, the applicant has to ensure that the new procedures are actually implemented in practice. This could not be verified during the second inspection.
3. Crane barge: The applicant has acquired a crane barge after the first inspection. The barge was reportedly taken into use around April 2019. The crane barge is used for lifting but also as an area for secondary cutting, hence the applicant must demonstrate how they are ensuring compliance with the requirements of the EU SRR as they are required to do for their shoreside facility. Workers safety, prevention of adverse effects on the environment (including impermeable floors and drainage) do not appear to have been given the necessary level of consideration. In addition, the status of the crane barge with regard to local requirements needs to be clarified.
4. Waste management: Most equipment, lose or fixed, removed from the ship during the dismantling process is sold by the facility for re-use. At the time of the first inspection, no additional sampling regime was in place at the yard to identify equipment potentially containing hazardous materials and not listed in the ship's IHM prior to selling such material for re-use. Further progress could not be demonstrated by the applicant at the time of the second inspection.

5. Labour laws: The inspections did not allow the evaluators to confirm that the facility is acting in accordance with the relevant provisions of Indian law on social and labour issues (the Factories Act and Minimum Wages Act), notably in relation to working on Sundays, public holidays and paid leave.

6. Environmental monitoring: The facility has yet to develop an environmental monitoring plan.

7. Medical facilities: The lack of adequate hospital facilities in the Alang area remains an issue, which has not been resolved. Although the new GMB Multi Speciality Hospital has improved the situation, it appears that this facility at present has only limited emergency capabilities. Discussions with the ASSRGWA also confirmed that this hospital has inadequate capacity for the whole Alang workforce and lack of capacity to treat serious injuries. As of today, the only public hospital with sufficient emergency capabilities equipped to treat serious injuries is located in the city of Bhavnagar, approximately 1.5 hours' drive away from the Alang yards.

8. Downstream waste management: Ensuring sustainable downstream management of wastes generated by the ship dismantling activities is an important requirement under the EU Ship Recycling Regulation. Most types of waste generated by the ship dismantling activities of the yard are transferred to the local TSDF (Treatment Storage and Disposal Facility) in Alang operated by GEPIL. Based on the information currently available to the evaluators, it appears that this facility is likely operated in accordance with human health and environmental protection standards that are broadly equivalent to relevant international or Union standards. However, GEPIL is not able to handle certain types of wastes (such as e-waste, batteries etc.), which are therefore transferred to other waste management facilities. The applicant has not demonstrated that these downstream waste management facilities operate according to standards broadly equivalent to EU and international standards.

A draft report with the evaluators' findings and requests for further information and clarifications was forwarded to the applicant facility after the second inspection but no replies received up to the completion of the present report.

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INSPECTION OF A SHIP RECYCLING FACILITY IN INDIA

Site Inspection Report Application 006

European Commission Directorate-General for the Environment

Report No.: 2019-0050, Rev. 2
Document No.: 117PLW2Y-5
Date: 2020-05-08

1249

1 EXECUTIVE SUMMARY

The objective of this report is to document the results of the site inspection at Shree Ram Vessel scrap Pvt. Ltd, located in Alang-Sosiya (Gujarat, India), following the facility's application for inclusion in the European List of ship recycling facilities.

The first on-site inspection took place on the 27th and 28th of September 2018. This was followed by a second inspection on the 11th of October 2019. In the context of the two inspection visits, the evaluators also had separate meetings with the Gujarat Maritime Board (GMB), the Gujarat Pollution Control Board (GPCB), the Ship Recycling Industries Association of India (SRIA) and the Alang Sosiya Ship Recycling and General Workers' Association (ASSRGWA).

During the site inspections, the facility demonstrated that it is approved by its authorities, has a suitable organisation with a proven track record, has sufficient procedures with regards to health and safety and has put in place well-functioning facilities (cranes, paved areas, warehouses etc.). The facility has also made important investments in the last years to upgrade its infrastructure and ship recycling practices.

The governing document for the site inspections, defining the baseline of the facility's performance, was the Ship Recycling Facility Plan (SRFP). A paramount task of the inspections was to verify that the SRFP is a living, logic and systematic document accurately reflecting the operational practices on the ground. During the first inspection, the evaluators could not verify that all procedures and practices observed on the ground were included and explained in the SRFP. In response to this, the applicant significantly updated the SRFP. The revised SRFP, with the updated instructions and procedures, was evaluated during the second inspection and found adequate.

During the first inspection, the facility could not fully demonstrate its ability to sufficiently control leakage, in particular in the intertidal zone. Also, questions remained regarding the facility's compliance with the requirement for handling of hazardous materials only on impermeable floors with effective drainage systems. The main concerns of the evaluators related to the cutting of the ship's double bottom in the intertidal zone. In response to this, the applicant updated the relevant instructions and procedures. During the second inspection, the evaluators verified implementation of the new procedures. It was found that the facility had implemented a good practice and good instructions for the prevention of spills and leakages to the intertidal zone, tank cleaning and slag collection, rendering the topic of protecting the intertidal zone satisfactory to the evaluators.

The evaluators understand that most equipment, lose or fixed, removed from the ship during the dismantling process is sold by the facility for re-use. At the time of the first inspection, no additional sampling regime was in place at the yard to identify equipment potentially containing hazardous materials and not listed in the ship's IHM prior to selling such material for re-use. In response to this, the facility has developed a new systematic sampling regime, which was found adequate during the second inspection.

The facility has also developed a monitoring plan of health risks to workers and adverse effects on the environment. The implementation of these plans was evaluated and found adequate during the inspections.

[redacted]

In conclusion, during the two on-site inspections the facility has demonstrated that it is fully committed to achieving compliance with all the relevant requirements of the EU Ship Recycling Regulation and has made important progress in this respect. However, based on the results of the inspections, there remain the following important areas where the evaluators could not confirm compliance.

1. Medical facilities / hospital situation: the lack of adequate hospital facilities in the Alang area remains an issue, which has not been resolved. Although the new GMB Multi Speciality Hospital has improved the situation, it appears that this facility at present has only limited emergency capabilities. Discussions with the ASSRGWA also confirmed that this hospital has inadequate capacity for the whole Alang workforce and lack of capacity to treat serious injuries. As of today, the only public hospital with sufficient emergency capabilities equipped to treat serious injuries is located in the city of Bhavnagar, approximately 1.5 hours' drive away from the Alang yards. The lack of adequate medical services and facilities was also revealed in relation to the fatal accident referred to above. It is understood that there was no surgeon available at the new GMB hospital at the time of this accident and therefore the injured person could not be treated there. However, the applicant has reported that the existing facilities at the GMB hospital are continually being upgraded. Reportedly, they have an ICU and a Burn Unit; furthermore, the hospital has tie-ups with Specialty Surgeon from Bhavnagar who would be available on call from Bhavnagar. Moreover, it is understood that the applicant is currently working on further upgradation of the existing health care facilities in Alang, together with other ship recycling facilities. Reportedly, a GAP assessment of existing medical facilities against international/national standards has been organized by medical consultants (Critical Care specialist) and resulted in concrete recommendations for improvements. The evaluators welcome all these measures and efforts of the applicant to improve the hospital situation. However, the evaluators have not seen the actual GAP analysis referred to by the applicant and the resulting recommendations. Furthermore, in the absence of a concrete implementation action plan for the said recommendations, including timeframes and information on the availability of the necessary human and budgetary resources, the prospect of achieving the desired improvements remains unclear.

2. Downstream waste management: ensuring sustainable downstream management of wastes generated by the ship dismantling activities is an important requirement under the EU Ship Recycling Regulation. Most of the waste generated by the ship dismantling activities of the yard are transferred to the local TSDF (Treatment Storage and Disposal Facility) in Alang operated by GEPIL. Based on the information currently available to the evaluators, it appears that this facility is likely operated in accordance with human health and environmental protection standards that are broadly equivalent to relevant international or EU standards. However, GEPIL is not able to handle certain types of wastes (such as e-waste, batteries, POPs etc.) which are therefore transferred to other waste management facilities. Most of the concerned facilities are located in the state of Gujarat and operate under a license issued by the GPCB, which contains specific requirements for emissions to air, water etc. and monitoring requirements. For most of the facilities, the requirements prescribed in the relevant GPCB licenses appear to be broadly comparable to the contents of licenses issued to similar facilities in the EU. However, in order to ascertain whether they follow standards broadly equivalent to international and EU standards in practice, the evaluators would need further information on the actual operation of these facilities, including on their compliance with the specific requirements prescribed in the relevant licences. To this end, the evaluators have also contacted the GPCB to better understand the level of control exercised over the concerned facilities; however, no further information has been received in this respect.

T. C. Mosley

ANNEXURE-3

Alang is a graveyard for ships.

Its coastline was once filled with fishing boats — but today the rusting hulks of oil tankers and ocean liners stretch for miles along the shores of this town in north west India.

The premium prices paid for steel make it a lucrative place to dismantle ships.

Alang's high tides and sloping coastline also create the ideal natural conditions for the work.

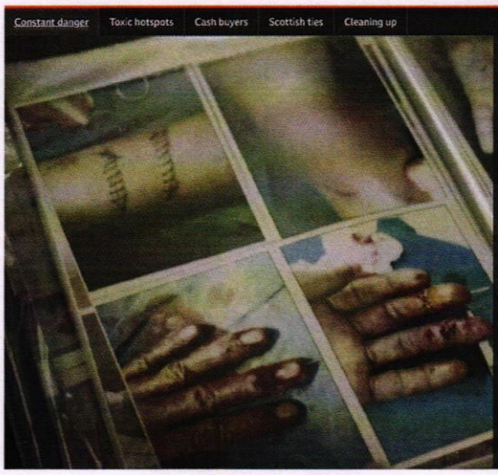
Its shipbreaking yards are the busiest in the world and oil companies are among their biggest customers.

About a third of all vessels which are sold for scrap will end their days there.

But it comes at a cost to men like Javesh and Naveen, who work in the searing heat and pollution of the yards.

"We do not have human rights," said Naveen.

"Sometimes we feel like we're animals. We're treated like insects by these people."



"They risk gas explosions, falling from heights, being crushed by massive steel plates that fall down — those are the main causes of the fatal accidents," she explained.

Workers often lack basic safety gear and at least 137 lost their lives between 2009 and 2019, according to Shipbreaking Platform.

The organisation believes that number is probably only the tip of the iceberg because shipyard owners refuse to discuss accidents.

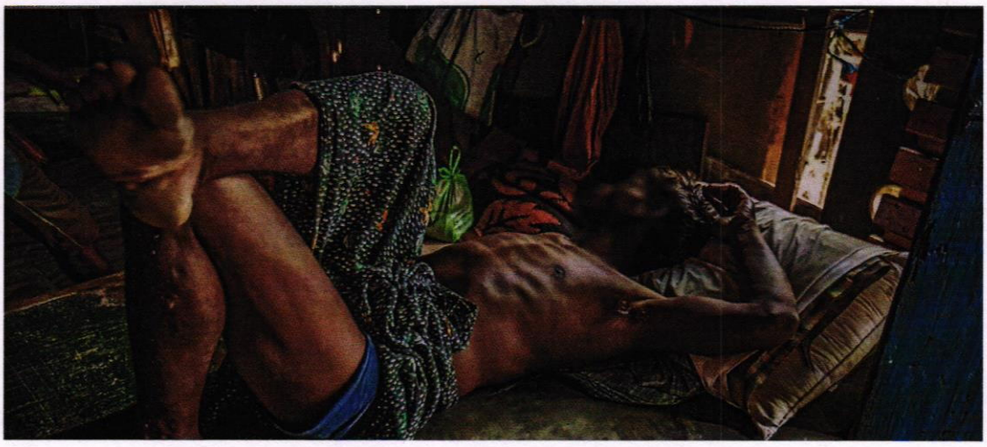
More than half of shipyard workers say they have been injured on the job, according to a survey last year by the Tata Institute in Mumbai.

During their interview, Javesh and Naveen showed our team numerous scars and burns on their legs and arms.

There is only one small clinic in Alang and more seriously injured workers have to travel to the city hospital in Bhavnagar – a 30-mile journey on unpaved roads which takes more than an hour.

Workers are also at risk from hazardous waste like asbestos and mercury contained in many of the vessels sold to the scrapyards.

"Many more workers succumb to occupational diseases and cancers years after they've worked at the yards because they are exposed on a daily basis to toxic fumes [and] materials at the yards," Ms Jenssen added.



Wealthy companies can make millions selling ships for demolition, but Javesh and Naveen are only paid about 35p an hour.

They send whatever money they can home to their families, who they may not see for months.

"If we get scared, our families would starve," said Naveen.

"This is what it comes down to - the labourers have to do the work... safety or no safety."

Toxic hotspots

The industry has also taken a toll on the environment in Alang.

The way ships are dismantled makes it almost impossible to contain pollution.

There are no docks or harbours — instead ships are beached and sit in the open water as they are cut apart, allowing waste to wash in and out with the tide. Many yards use the "gravity method", where chunks of metal are allowed to fall onto the beach as they are cut away.

Oil rigs are more difficult to beach so they are dumped on tidal flats up to a mile and a half away, where pieces are cut from them until they are light enough to be dragged ashore to finish the work.

It usually only takes a few weeks for a vessel to disappear, although the largest of them, like the Schiehallion — an 86,000 tonne floating factory from the North Sea which was dumped in Alang in 2017 — can take more than a year to dismantle.

Scientific studies have identified **unsafe levels of poisonous heavy metals** in the waters around the town, including iron, mercury, copper, zinc and lead.

Shipbreaking Platform describes the yards as "toxic hotspots".

"When you have hundreds of vessels ramped up one beside the other... releasing toxic fumes, air pollution and heavy metals... into the sea, that pollutes the sea, the soil, and also the groundwater," said Ms Jenssen.

"So the environmental impact... is massive."

Fishing was once the most important business in Alang, but nets have grown empty since shipbreaking took over in the 1980s.

"In the last 20 years the size of the catch has gone down," said Dinesh Gulab Bivagar, a community leader from Ghogha, a small town a few miles north of the shipyards.

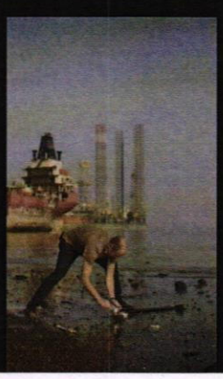
"Before, our fisherman brought back full boats of fish.

"Now they don't bring back as much, there aren't as many fish in the sea."

He estimates the catch in Ghogha has fallen by 75% in the last two decades but he is wary of blaming shipbreaking.

Few local people are prepared to be critical of an industry which is so vital to the economy in Alang.

The fish that are left may not even be safe to eat — one study from 2010 found they **contained dangerously high concentrations of poisonous metals**.



Sediment samples collected by the BBC from one stretch of the breaking beach in Alang were analysed by experts at the Scottish Environmental Protection Agency (Sepa).

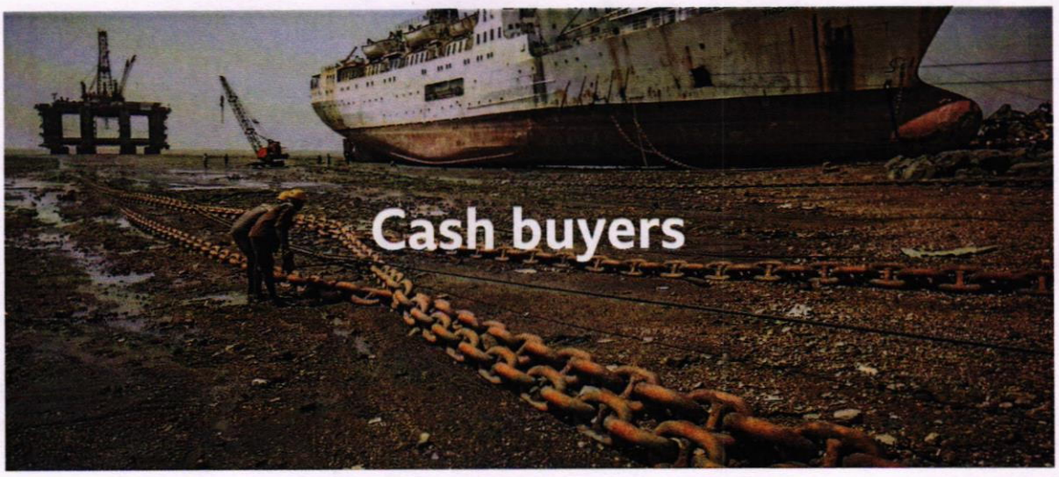
They found the sediment was more than 50% metal - which they demonstrated by placing a magnet over one of the samples.

Sammi Mallin, a scientist at Sepa, believes this is a result of the shipbreaking process.

"When we looked at the metal content of the sample under high magnification, we were able to pick out little metal spheres," she explained.

"They're produced when something like a high-temperature acetylene torch is used for cutting steel and they fuse to the gravel they land on.

"We would not expect to find these in a natural environment."

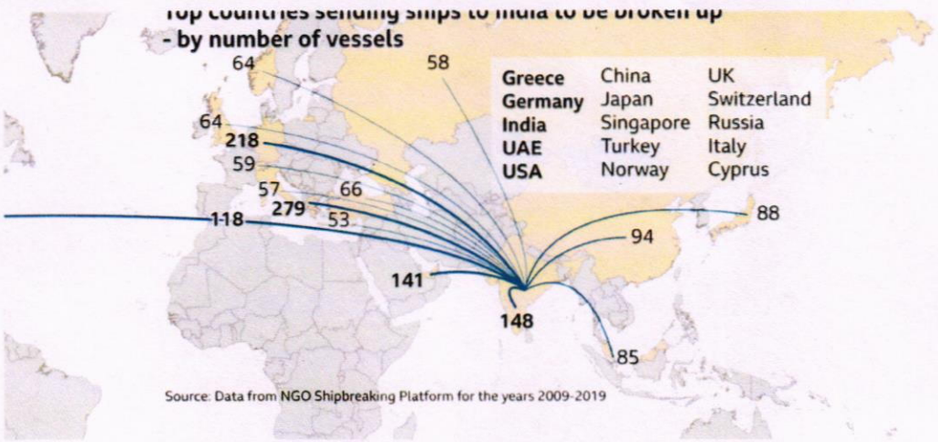


Cash buyers

Alang has a global reputation as a centre for shipbreaking, but it is illegal for companies in the UK, the United States and Europe to send ships there without removing hazardous waste from them first — a costly and time-consuming process.

"Developing countries should not be the dumping ground of hazardous materials from the developed world," says Ingvild Jenssen, from Shipbreaking Platform.

"A vessel containing asbestos and other toxic materials should not be exported to India or Bangladesh or Pakistan for breaking, but recycled in a facility that can handle and properly dispose of these hazardous materials."



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So how did 200 vessels - many formerly owned by European companies - end up in Alang last year?

Oliver Holland is a lawyer at Leigh Day, a law firm which specialises in human rights cases.

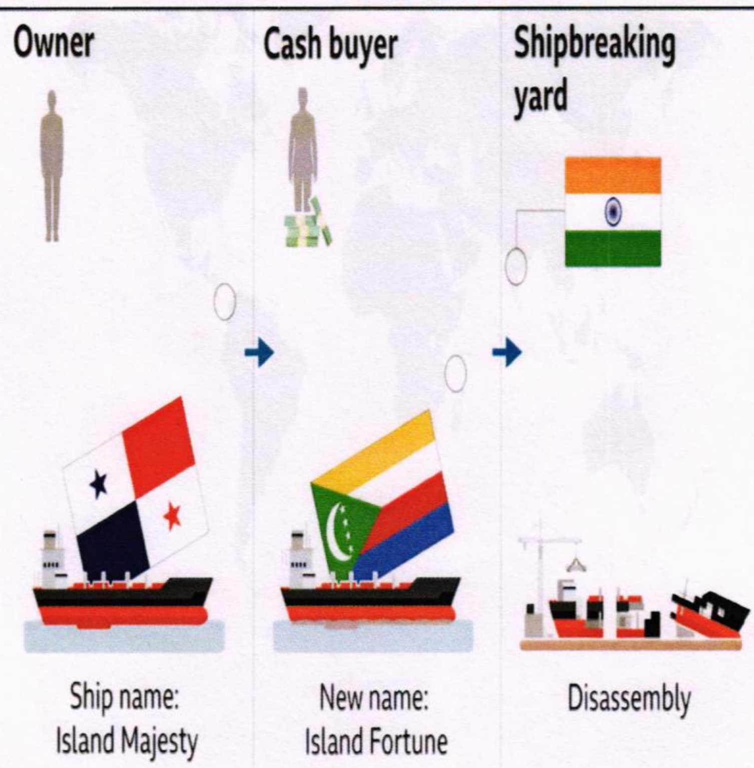
He says the answer is companies known as cash buyers who act as middle-men between ship owners and shipbreakers.

"The cash buyer is simply an intermediary, and is there, we believe, to try and avoid liability. To put something between [the seller] and the beach," said Mr Holland.

He says this is a common system which is used across the South Asian ship recycling industry. Ship owners sell their vessels to cash buyers, who sell them on to scrapyards.

"The cash buyer changes the name [and] the ... registered owner, which is usually a postbox company in the Caribbean or whatever other tax haven," he explained.

"They are literally just there as a sort of a loophole to get around any regulation ... or legal liability."



ANNEXURE - 4

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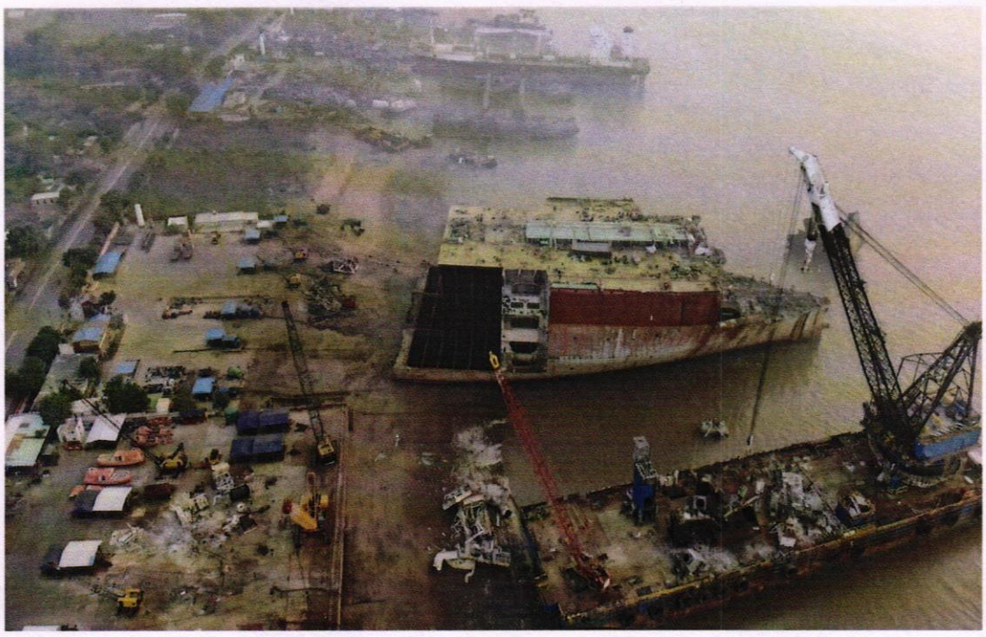

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Annexure - 5

DISTRICT CODE	DISTRICT	2017	2018	2019
		NO OF FATAL ACCIDENT	NO OF FATAL ACCIDENT	NO OF FATALACCIDENT
7	Ahmedabad	24	24	27
13	Amreli	4	1	0
15	Anand	5	3	1
31	Aravalli	0	0	0
2	Banaskantha	1	0	0
21	Bharuch	16	23	18
14	Bhavnagar	15	16	8
30	Botad	0	0	0
33	Chhotaudepur	0	0	0
18	Dahod	1	0	1
23	Dang	0	0	0
27	Devbhumi Dwarka	3	2	0
6	Gandhinagar	8	7	9
29	Gir Somnath	2	1	0
10	Jamnagar	2	4	1
12	Junagadh	0	0	0
16	Kheda	2	2	2
1	Kutch	15	15	13
32	Mahisagar	0	0	0
4	Mehsana	12	3	1
28	Morbi	22	29	32
20	Narmada	0	0	0
24	Navsari	3	3	2
17	Panchmahal	3	6	5
3	Patan	2	1	0
11	Porbandar	0	1	1
9	Rajkot	13	17	9
5	Sabarkantha	1	0	0
22	Surat	40	35	29
8	Surendranagar	0	3	2
26	Tapi	1	0	0
19	Vadodara	12	18	10
25	Valsad	23	22	17
	TOTAL	**230**	**236**	**188**

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Annexure-6

WORKING, LIVING, OCCUPATIONAL HEALTH AND SAFETY CONDITIONS OF WORKERS IN SHIP BREAKING YARDS IN ALANG-SOSIYA, GUJARAT, INDIA

Policy Paper

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Executive Summary

The ship breaking activity in developing countries, such as India, Bangladesh and Pakistan, has been subject to scrutiny and criticism due to the negative impacts the industry has on the environment and workers. This policy brief outlines the main findings of a report on the working conditions in the ship breaking yards in Alang, India. The report found that there has been little improvements in the shipbreaking yards with regards to working conditions and highlights several concerning breaches of the national legal framework aimed at protecting workers and their occupational health and safety. The findings are based on analysis of information obtained through RTI[1], structured interviews with 103 workers and other relevant stakeholders, including authorities and industry associations, as well as secondary sources including government and non-governmental reports.

Introduction

The ship breaking activity is indiscriminately allowed in developing countries for short-term economic gain and responding to the domestic requirement of steel. However, the impact of this industry on workers' health and the environment is worrying. More than 70% of obsolete ships end up in South Asia, where they are broken under rudimentary conditions on the beaches of Alang-Sosiya in India, Chittagong in Bangladesh and Gadani in Pakistan - a practice known as 'beaching'.

The ship breaking yards in Alang-Sosiya (ASSBY) are situated in Bhavnagar, District of Gujarat, which is considered the largest ship breaking area in the world. When the industry established itself in the late 1980s, 46 shipbreaking plots were active. The number has since gradually increased to 170, of which currently about 135 plots are operational. Each leased plot at ASSBY employs between 150–200 workers, and towards the end of 2018 there were around 30,000 workers employed in the ship breaking yards of ASSBY.

The report critically examines the legal and institutional framework for the protection and improvement of workers' rights in ASSBY, and assesses the working, living, occupational health and safety conditions of workers in the ship breaking yards. Finally, it concludes with proposals for policy and institutional intervention in order to improve the working, living, occupational health and safety conditions of workers in the ASSBY. The aim is to inform the readers about the founding principles and obligations of the Indian Constitution towards the protection and welfare of workers, to give an overview of key statutory laws ratified by the Central and State Government of India and international agreements and conventions for protecting the working, living and occupational health and safety conditions of workers.

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[1] RTI: Right to Information

Approach and Results

The study is based on primary and secondary data. The primary data was collected with the aim to understand the impact of existing rules, regulations and their effectiveness and is composed by a sample of one hundred and three workers from different ship breaking yards. These workers were all interviewed with a structured questionnaire focusing on working, living, occupational health and safety conditions in ASSBY. Moreover, a number of other stakeholders, including ship breaking industrial unit owners, trade union leaders, environmental NGOs and activists, lawyers representing workers' interests, members of the ship breaking industries' association, and staff of the Gujarat Maritime Board (GMB), the Gujarat State Pollution Control Board, the Bhavnagar Office as well as the Gujarat Industrial Safety and Health Department, have been interviewed to explore the enforcement challenges related to workers' rights at ASSBY. Information on government intervention and activities has furthermore been obtained through RTI. The data collection and discussions with various stakeholders was done between April-May 2019. The secondary data is based on a review of existing rules and regulations on workers' rights, both national and international, on various non-governmental organisations' reports as well as on a review of Court orders related to workers' rights in ASSBY.

The results of the research work give a detailed description of current working and living conditions in ASSBY and highlights the key determining factors for non-compliance of various labour laws and Court directions that protect and improve workers' rights. The main findings of the report are presented below.

Social profile of the workers

- ✓ 16% originate from Gujarat, 36% come from Uttar Pradesh, followed by 19% from Bihar, 16% from Jharkhand, 11% from Orissa, 1% from Madhya Pradesh and West Bengal.
- ✓ 91% are from Hindu communities and 9% are from Muslim communities.
- ✓ The majority are between the age group of 20 to 45 years.
- ✓ 47% have been working in ASSBY for more than ten years, 28% having work experience of more than twenty years, and 25% have less than ten years of experience.
- ✓ 52% have come to know about job opportunities in ASSBY through village contacts who have worked/work in ASSBY, 16% are local workers, 29% heard about ASSBY from their relatives and only 3% come to ASSBY through a middlemen.

Living conditions of the workers

- ✓ Despite the Indian Supreme Court having ordered the provision of housing facilities to the workers, out of the seven labour colonies[2], each with four floors and the capacity

[2] Total capacity for around 1.000 workers. The yard workforce averages are about 15.000-30.000 workers.

of 48 beds per floor that stood ready for occupancy in October 2018, only two labour colonies are used by Shree Ram and Leela Group Yard owners for their labourers. The remaining five labour colonies remain vacant and even in the two used colonies there is very low occupancy so far.

- ✓ 89 % of workers do not receive housing facility from the plot owners even though they are migrant workers.
- ✓ The majority of the workers live in and around the ship breaking area in rented shanty dwellings usually without adequate facilities for potable water, sanitation, electricity, drainage systems and education for their children.
- ✓ 7 toilets have been constructed by the GMB for workers use but most of them are not properly managed and 56% workers are forced to go for open defecation. Whilst 45% of the interviewed workers have access to toilets at the yard where they work, another 45% do not have access to a toilet facility in their yard. 7% have informed that the toilet in their work place is generally locked, thus they cannot use the facility, whereas 3% find the toilet in their yard very unhygienic.
- ✓ 59% of workers pay for water service in their living areas.

Working conditions

- ✓ 47% of the workers are gas cutters, 16% loaders, 5% riggers, 8% supervisors, 4% helpers, 12% are unskilled labours and 8% are engaged in diverse types of work.
- ✓ 85% of the workers are paid on a daily basis and only 15% are salaried workers. Salaried workers do not earn extra wage for their overtime work. 13% are paid within the first seven days of the month, 87% respondents are paid after seven days of every month
- ✓ While the average income per day for a daily wage worker is Rs. 379, the average salary per month for a salaried worker is Rs. 14134. The wage for workers vary from plot to plot and is also based on type of work at the yard.
- ✓ 66% of the workers have informed that provident fund amount from their salary is deducted every month. Out of these, only 20% of the workers have withdrawn their provident funds so far and 46% have informed that the plot owners do not cooperate in processing their provident fund amount.
- ✓ 57% of the workers get access to drinking water from a facility in their yard, 12% do not get drinking water in their yard and the remaining workers, i.e. 31%, reveal that whilst a drinking water tap exists in the yard, the quality is not suitable for drinking or the water is not available regularly.
- ✓ 87% of the workers do not have access to a dinner hall facility in their work place. Only 12 % of workers have access to a dinner hall facility in their work place, whereas 1% cannot use the dinner hall facility as it is only for show off.
- ✓ 60% of the workers have informed that the first-aid equipment is available in their yard, 29% do not have access or knowledge of a first-aid box in their yards and the remaining 11% stated that the first-aid box in their respective yard is only for show off.

- ✓ 30% of the workers have informed that the safety equipment is available to them in good quality, whereas 36% expressed their dissatisfaction over the quality of safety equipment and 16% have not received any safety equipment.
- ✓ In the absence of safety equipment and proper training, 52% of the interviewed workers were injured at workplace during the last year. Of these, 61% had received immediate medical support from their plot owners at the workplace and the remaining 39 % did not receive any type of medical support from their plot owners.
- ✓ 30 % of the workers were paid during their leave period due to injury, whereas 52% did not get any wage or compensation when they were on leave, and the remaining 18% continued to work despite their injuries as they were worried to loose wages.
- ✓ ASSBY has just three simple health facilities, two of them run by the Red Cross Society and a small clinic run by a private doctor. Neither have necessary facilities to treat major injuries and potentially fatal emergencies.

Conclusions

In general, the report finds that there is no lack of labour laws to protect and improve the working conditions and ensure the welfare of workers at ASSBY. However, the implementation of labour laws and various government appointed committee recommendations have not been effectively implemented and taken seriously by different state government departments in Gujarat. Despite a number of initiatives by the GMB towards the development of ship breaking activities in Alang, the GMB is failing to monitor ASSBY and to provide adequate facilities and infrastructure in the ship breaking yards. It is of particular concern that there is also no data base created or maintained by the district authority about the number of workers in the ship breaking yards. Moreover, the presence of multiple government agencies has not made a significant impact in controlling the behaviour of ship breaking industries to ensure better working conditions. There is a lack of effective implementation of both labour and environmental laws in ship breaking industries both by the Central and State Government of Gujarat. According to the findings, the lack of coordination between different agencies is a serious problem towards implementing labour laws effectively.

There has been little space to raise the workers' voice in the decision-making process and no effective platform to organise them for their collective action to assert their rights. Around 37% of the interviewed workers do not want to participate in the trade union activities as they feel it might create problems for their employment opportunities. Those who participate in the trade union activities, however, confine their role to address basic issues such as sanitation and water supply, as they do not feel empowered to protest, or even speak out, against the worst working conditions, including major health hazards, accidents, compensation for deaths and injuries, in fear of losing their jobs. One of the key weaknesses in addressing and resolving workers' rights at ASSBY has been the absence of an active and strong trade union to represent the interests of workers. The trade unions in Gujarat have not taken active interest in

mobilising workers and representing their interests to the different government departments. Illiterate, or having very low levels of education, the ship breaking workers at ASSBY come from families that live below poverty line. Not aware of their basic rights, they can be easily exploited.

Recommendations

There are strong environmental and safety arguments for moving the shipbreaking industry to more appropriate locations where heavy lifting equipment and pollution containment can be ensured. The focus of the report is workers' rights, and in line with the findings, the main recommendations are presented below:

- ✓ Create a database on migrant workers with regular updates.
- ✓ Educate workers about their rights under different labour laws.
- ✓ Educate workers about the hazardous activities of the industry.
- ✓ Extend the public distribution schemes to migrant workers. Labourers in ASSBY are entitled to get subsidised rations under the public distribution system.
- ✓ Revisit the current enforcement strategies by the GMB to ensure that workers live in the labour colony and not in huts lacking basic facilities in and around the ship breaking area.
- ✓ Provide regular water and sanitation facility in the living areas.
- ✓ Provide compensation for overtime at work.
- ✓ Construction of restrooms in the plots by the employers and provide the workers with sufficient time for tea and lunch during their work shift.
- ✓ The Employee's State Insurance Corporation along with the GMB need to take active interest to ensure a full-fledged operational hospital with adequate equipment, experienced doctors and different expertise, available 24 hours.
- ✓ Guarantee that each labourer has a health insurance policy and an identity card.
- ✓ Regular health camp and study by the health department of Gujarat needs to be done to understand the long-term impacts of ship breaking activities.

- ✓ Regular inspection by the factory inspector needs to be carried out to ensure better working conditions during the ship breaking activities. Inspection reports need to be uploaded on the website of the labour and employment department of Gujarat.

- ✓ Increase the administrative and financial capacity of staff members in-charge of regular inspection for the implementation of labour laws.

- ✓ Expand the current training program for the workers with regards to how to handle disasters and take appropriate safety measures at the work place.

- ✓ Ensure that the vessels imported are de-toxified. It has been demanded time and again by various environmental groups, and also the Indian Supreme Court, that the countries which send their ships for scrapping to India, Pakistan and Bangladesh must ensure that their ships are de-toxified in the country to which the ship belongs.

- ✓ Implement the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and other relevant international instruments along with the national laws.

- ✓ Agencies required to implement various labour laws need to be accountable. The GMB has to be transparent.

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