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HEALTH HAZARDS SUFFERED BY SHIP-BREAKING INDUSTRY WORKERS- ANALYSIS AND SOLUTIONS

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I. INTRODUCTION-

“Healthier employees mean happier employees. There’s less absenteeism, improved productivity and lowered health care premium costs.”- Jim Link.¹

The ship-breaking industry in Asia is based in countries like India, Bangladesh, Pakistan, China and Turkey.² Apart from Asia, Europe also has ship recycling yards in countries like Belgium, Denmark, Estonia, Finland, Latvia, Portugal, Spain and United Kingdom.³ In North America, countries like USA has one ship-breaking yard in Brownsville, Texas. Out of all these countries, it is the region of South-East Asia that dominates this industry and according to a data dated 2011, India, Bangladesh and Pakistan account for close to 67 percent of the global recycling market.⁴

From the figures, it looks that the industry contributes to the economies of Bangladesh, India and Pakistan respectively. However, there is also another aspect that needs to be considered is the health and well-being of the workers. Some of the health hazards that happen to some workers working in this industry will be explored and understood.

II. STATEMENT OF PROBLEM-

Over the last decade, it has been observed that many workers have died in shipbreaking yards in few Asian countries.

III. RESEARCH ISSUES AND OBJECTIVES-

- i. Issue- What are the issues and working conditions faced by the workers in the ship-breaking industry?
Objective- What can be done to improve their working conditions?

¹Jim Link Quotes, Quote HD, <http://www.quotehd.com/quotes/jim-link-quote-healthier-employees-mean-happier-employees-theres-less>.

²ASC Staff, *Top 5: Places ships go to die*, logistics middle east, (June 9, 2015, 4:54 PM), <https://www.logisticsmiddleeast.com/article-11431-top-5-places-ships-go-to-die>

³EU & Rest of the world, NGO Ship breaking platform, <https://shipbreakingplatform.org/our-work/the-problem/eu-row/#:~:text=Facilities%20specialised%20in%20the%20dismantling,Spain%20and%20the%20United%20Kingdom>

⁴Soma Basu, *South Asia: World’s ship-scraping yard*, (July 4, 2015), Down To Earth, <https://www.downtoearth.org.in/news/south-asia-worlds-ship-scraping-yard--40995>

- ii. Issue- What are the health-hazards and health problems that happen to workers in the ship breaking industry?
Objective- What are the steps and initiatives that can be taken to improve the health of the workers?

IV. WORKING CONDITIONS AND ISSUES FACED BY THE WORKERS-

The ship-breaking industry is usually located along the seashores. The wrecked, old and worn-out ships are the workplace of the employees and workers. The worn-out ships always pose a risk of sudden accidents.

It is observed that the environment of the workplace in this industry has the presence of **toxic chemicals, asbestos and oil while moving cranes, falling steel plates, gas explosions and metal coils** snapping are constant risks.⁵ Other than that, there is also the risk of leak of toxic gas that can affect the body.⁶ These toxic gas leaks can also prove to be fatal. In Mak Corporation Yard in Chottogram in Bangladesh, **two** individuals died due to a toxic gas leak on board.⁷

However, one also ought to be very cautious too about what's happening around him as anything can happen anytime. In Ziri shipbreaking yard in Bangladesh, a heavy **cable collapsed** hitting several workers at once and **thirteen** people were injured.⁸ Such accidents prove how uncertain and unsafe it is for the workers to go with their activities regularly.

In Alang, situated in the Indian state of Gujarat, is a town known for its ship breaking work. In Alang, many migrant workers from states like Uttar Pradesh, Bihar, Odisha and Jharkhand work. They also work in very difficult and risky situations. They lack **safety equipment and inadequate health** facilities.⁹ It needs to be understood and known that the quality of facilities provided to the employees are also important and crucial. At a workplace that is so risky and unsafe that one's life can be jeopardized any moment, it is very important for the workers and employees to be provided with good quality equipment that can **safeguard their health and physical well-being** to the fullest.

The workers also not being provided with proper health facilities which is very important especially for all those workers who meet with a sudden accident or get injured while working.

⁵*SPECIAL REPORT: Cleaning up shipbreaking the world's most dangerous job*, Industrial Global Union, (December 15, 2015), <http://www.industrial-union.org/cleaning-up-ship-breaking-the-worlds-most-dangerous-job>

⁶*Shipbreaking- A dirty and dangerous industry*, Dry Cargo International, (October 16, 2019), <https://www.drycargomag.com/shipbreaking-a-dirty-and-dangerous-industry>

⁷Ibid.

⁸Ibid.

⁹Ritwika Mitra, *Lack of safety, health facilities haunt shipyard workers*, The New Indian Express, (December 10, 2019, 8:48 AM), <https://www.newindianexpress.com/nation/2019/dec/10/lack-of-safety-health-facilities-haunt-shipyard-workers-2073855.html>.

Apart from that, as many as **89%** of the workers do not get any housing facilities and majority of them live in shanty dwellings and do not have **potable water, sanitation, drainage systems, electricity and education for the children.**¹⁰

Even though there is so much risk and danger involved all around them, they still continue with their work.

Not only is there the persistent fear from **falling** materials, but also the **toxic** materials contribute to that fear and apprehension and explosions are a common cause for fatalities and accidents.¹¹

Although they deal with hazardous materials and working conditions and are involved in cutting ships apart that comes with its own challenges, they are not provided with the relevant training and knowledge on how one would use Personal **Protective Equipment (PPE).**¹² In Gadani, neither any **safety equipment** is provided nor is there the any **proper training and clean drinking water** that is provided to the workers.¹³ It needs to be realized that the workers cannot work by always putting their lives at stake.

This industry usually employs unskilled manpower which is desperate for income and financial sustainability. The probability and scope for informal and indirect employment is also there in this industry. However, with potential and newer opportunities comes the need and requirement to frame new laws and legislations also to regulate that.

The presence of **Asbestos, ACM (Asbestos Containing Materials)** found in the thermal insulation system and when that is disturbed, asbestos gets disintegrated into very fine fibers that can be suspended in the air for long periods and there is the possibility of that getting inhaled by the employees and other people living in the vicinity of the scrapping yards.¹⁴

Asbestos is a substance that can have an impact on the health of the person.

The workers are also exposed to fumes like **dioxines, isocyanates and sulphur** also.¹⁵

These gases are also very harmful for the lungs and heart.

¹⁰Alang Ship breaking yards working conditions are of great concern, Safety 4 Sea,(December 11,2019),<https://safety4sea.com/alang-shipbreaking-yards-working-conditions-are-of-great-concern/>

¹¹Eric Grundhauser, *Inside the shady, dangerous business of shipbreaking*, Atlas obscura, (March 18,2016), <https://www.atlasobscura.com/articles/inside-the-shady-dangerous-business-of-shipbreaking>

¹²Guest Author, *Europe's toxic ships: How poor recycling practices are poisoning Asian beaches*, Marine Insight,(December 24,2019),<https://www.marineinsight.com/environment/europes-toxic-ships-poor-recycling-practices-poisoning-asian-beaches-2/>.

¹³Supra note 5.

¹⁴*Asbestos in the ship-breaking industry of Bangladesh: Action for ban*, Asian Monitor Resource Centre, (March 1st,2007),<https://www.amrc.org.hk/content/asbestos-ship-breaking-industry-bangladesh-action-ban>

¹⁵Ibid.

It also needs to be understood that the structural complexity of the ships and improper access to the vessels makes the process challenging and brings health and environmental risks along with it.¹⁶

Workers are paid **much less** than the **standard wages** and unskilled workers are given the work to manually break the ships that are full of **toxic** substances.¹⁷ With little attention paid to the safety of the employees, accidents caused due to fire and suffocation are reported every year.¹⁸

The process of ship breaking brings along with it many risks but it needs to be looked into and steps and initiatives need to be taken accordingly to prevent injuries and casualties. Newer policies also ought to be taken that looks into the health and mental well-being of the employees.

V. HEALTH PROBLEMS AND HAZARDS THAT HAPPEN TO WORKERS IN THE SHIP-BREAKING INDUSTRY-

In the ship-breaking industry, the workers suffer from many health problems.

The health issues happen due to not one, but many reasons.

As the workers are exposed to asbestos, they develop the breathing problem of asbestosis. In a survey conducted by Bangladesh Occupational, Safety, Health and Environment foundation (OSHE), it was found out that **33%** of the ship breaking workers are affected by **asbestosis** and it is **incurable**.¹⁹ The symptoms of asbestosis include- **shortness of breath, persistent dry cough, chest tightness or pain and a particular dry, crackling sound in the lungs while breathing in**.²⁰ It needs to be understood that when an individual develops breathing problems and illnesses, it becomes difficult and challenging for him to keep up with the pace of life and it gets tough to maintain efficiency in work. Asbestos exposure also causes the risk of cancers. In a study, it was found out that the alarming rise in **esophageal, liver, bile, tracheal, duct and lung cancers** are caused due to asbestos exposure on scrapped ships.²¹

Shortness of breath as a symptom is a sign that the normal breathing system in the human body is impacted and affected. As the **asbestos** fibres scar the **lungs**, it restricts the breathing process and interferes with the ability of oxygen to enter the

¹⁶Occupational Safety of ship breaking workers, Global Times, (October 16th, 2020),<https://www.globaltimes.cn/content/1203687.shtml>

¹⁷GK Today, (December 10th, 2017), <https://www.gktoday.in/gk/indias-ship-breaking-industry-and-recent-draft-law/>

¹⁸Ibid.

¹⁹Tarek Mahmud, *Asbestos: The slow poison killing ship breaking workers*, Dhaka Tribune, (February 2nd, 2017, 11:32 PM), <https://www.dhakatribune.com/bangladesh/environment/2017/02/02/asbestos-slow-poison-killing-ship-breaking-workers>

²⁰*Asbestosis Symptoms and Diagnosis*, American lung association, <https://www.lung.org/lung-health-diseases/lung-disease-lookup/asbestosis/symptoms-diagnosis>

²¹Tim Povtak, *Asbestos puts shipbreaking workers at risk for many cancers*, Asbestos.com, (August 4th, 2015), <https://www.asbestos.com/news/2015/08/04/cancer-incidence-high-shipbreaking-industry/>.

bloodstream.²² As the oxygen flow in the body is impacted slowly, the overall body's ability to perform and work is also affected. As the ability to perform and work is affected, it gradually starts reflecting in certain other aspects of his life also.

The workers in the ship-breaking industry are also subjected to **noise, radiation and other temperature** related hazards and it is also claimed that several hundred workers fall sick every year by inhaling toxic fumes at the scrap yards and that also impacts their health.²³ **Improper use and lack in the maintenance of the tools** also contribute to the injuries of many workers.²⁴

In the ship-breaking industry, the workers also suffer from skin diseases. The frequency of skin diseases are contact dermatitis (**19.4%**), Scabies (**15.8%**), pyoderma (**9.8%**), seborrheic dermatitis (**9.6%**), palmoplantar keratoderma (**4.8%**), lichen simplex chronicus (**3.4%**), Urticaria (**2.4%**) and psoriasis (1.2%).²⁵

Apart from skin diseases, as the industry being an accident prone one, there is always the risk and probability of other diseases is always there.

The workers are also prone to have other diseases like **tuberculosis, malnutrition, diarrhea, muscle pain, chest pain, headache, cough and cold ophthalmological problems and gastrointestinal problems and issues.**²⁶

In Alang, the poor work conditions along with the **congested and dirty living conditions, along with the availability of unclean drinking water and illicit country liquor** has resulted in the increase in cases of **malaria, cancer and number of gastro-intestinal and liver diseases.**²⁷

Other diseases that are also present among the workers are **dysentery** and about **194 of the 20000 workers** in Alang had **leprosy.**²⁸

The existing conditions in the scrapping ships also account for noise pollution, **extreme temperatures** and **vibration** also impacts the workers.²⁹

Working in extreme temperatures can cause heat-related illnesses like **heat exhaustion, heat stroke, muscle cramps, heat swelling and fainting.**³⁰ Heat

²²Amanda Delgado, *Asbestosis*, Healthline, <https://www.healthline.com/health/asbestosis#symptoms>

²³Supra Note 16.

²⁴Ibid.

²⁵Dr Md Shahidullah Sikder, Dr Mohammed Saiful Islam Bhuiyan, Dr Ajay Ghosh, Dr Farzina Rabin, *Pattern of skin diseases among workers in ship-breaking yards in Bangladesh*, 45 (3), Bangladesh Med J., 147, 149, 2016.

²⁶Ibid.

²⁷Dr Rupa Abdi, *Safety and health of ship breaking workers*, 2,2, Labour File, 36,36, 2004.

²⁸Manish Tewari, *Bare facts*, DownToEarth, (March 15th, 1998), <https://www.downtoearth.org.in/coverage/bare-facts-21345>

²⁹Muhammad Muhibbullah, *Health hazards and risks vulnerability of ship breaking workers: A case study on Sitakunda ship breaking industrial area of Bangladesh*, 2(8), Global Advanced Research Journal of Geography and Regional Planning, 172, 177, 2013.

³⁰Healthline editorial team, *Hot and cold: Extreme temperature safety*, Healthline, <https://www.healthline.com/health/extreme-temperature-safety>

exhaustion can cause other symptoms like **heavy sweating, dizziness, blacking out and vomiting**.³¹

Some other health problems that happen in the ship scrapping industry are also related to **nutritional issues, urinary issues and eye issues**. Nutritional issues like **vertigo and anorexia, eye issues like redness and blurring vision** are found.³²

Some workers also claim that they suffer from hearing impairment after working in those harsh environments of the industry where there was high noise.³³ From such information, one realizes that the life of ship breaking employees and workers is risky and they need urgent health and medical care if they get injured or infected with some disease.

Accidents are also one such major health hazard that happens in the ship breaking industry. **Explosions** of the remaining **leftover gases and fumes** are the prime cause for accidents in the yards and even cases of **electrocution** also happen.³⁴

The health problems and hazards that are associated with this industry cannot be ignored at all. Rather, one needs to look for solutions to minimize and lower the risks and chances that can cause death of any worker or individual who is working in the ship breaking industry.

Mesothelioma, one form of cancer that affects the membrane lining of the lungs and abdomen and **PCBs (Poly-chlorinated Biphenyls)** also impacts and affects the **nervous, immune, endocrine and reproductive system** respectively.³⁵

Apart from this, risk of being infected with diseases that are transmitted by **pests, rodents, insects** that may have infested in the ship and the risk of **snake bite** is also there.³⁶

The main causes of death are also **suffocation, fires, falling from great height** and even workers are crushed under falling parts of the ship.³⁷ Talking about health care facilities and services available, the **closest** hospital is **too far** which can provide the injured and the ailing ones emergency treatment and the workers also are not provided with any type of financial help or support to provide for the medical

³¹Ibid.

³²M. Shahadat Hossain, Sayedur R. Chowdhury, SM Abdul Jabbar, S.M. Saifullah, M. Ataur Rahman, *Occupational health hazards of ship scrapping workers at Chittagong coastal zone, Bangladesh*,35(2), Chiang Mai J. Sci, 370, 378,2008.

³³N.M. Golam Zakaria, K.A. Hossain, *Underlyng problems of ship recycling industries in Bangladesh and way forward*, 42(1), Journal of Mechanical Engineering,21,25,2012.

³⁴John Vidal, *Bangladeshi workers risk lives in ship breaking yards*, The Guardian, (May 5, 2012,13:25 BST),<https://www.theguardian.com/world/2012/may/05/bangladesh-workers-asia-shipbreaking>

³⁵*Ship breaking: What are the occupational hazards involved in this marine profession*, Bright Hub Engineering, (June 23rd, 2009), <https://www.brighthubengineering.com/marine-engines-machinery/39703-hazards-in-ship-breaking-procedures/>

³⁶Jewel Das, Muhammad Ali Shahin, *Ship breaking and its future in Bangladesh*, 6(2), Journal of Ocean and Coastal Economics,1,5,2019.

³⁷*Monitoring the problems of shipbreaking in Bangladesh*, Marasi News, (August 26th, 2018,13:06),<https://www.marasinews.com/environment/monitoring-problems-shipbreaking-bangladesh>

treatment.³⁸ The local authorities and employers need to talk and come together to build healthcare infrastructure and facilities that can help in providing fast and affordable health care services to the injured workers and employees when they need urgent medical need and attention. Local authorities need to take up the initiative to solve this matter and bring new policies that aims to solve this problem. **Policies** ought to be made that focus on **health, safety and mental well-being** of the workers. Well-being of the workers is important to be taken care of.

VI. SOLUTIONS –

- i. Framing new policies and schemes that aims at providing benefits to the employees-
Most of the ship breaking workers come from poor backgrounds and they do not have a proper economic backbone on which they can count upon whenever they face any economic or health problem. It is important for the ruling authorities to set up a particular team of experts and frame policies and schemes that are applicable specifically in the shipbreaking industry companies that employs hundreds of such workers. Policies that aim at providing certain socio-economic benefits that are related to **healthcare, education and safety** of them that can give them **hope and assurance**. Bringing new policies that focuses on the well-being of the workers is needed.
- ii. Giving the shipbreaking companies and firms directions to set up digital infrastructure and providing assistance to them-
It has been observed that many of the injuries, casualties and deaths that happen in the shipbreaking industry goes unrecorded and undocumented. In such cases, the relevant authorities and governing bodies need to frame new rules and laws that addresses the need and importance to set up good quality digital infrastructure that can keep information about the employees that are working in a particular shipbreaking company. The relevant authorities also need to bring in a set of **experts and knowledgeable individuals** who can assist the shipbreaking companies in setting up the **best technology and software**.
Digital infrastructure will also help to keep a **proper** idea about the accidents and injuries that have happened in a shipyard. It will also help to know about **areas and places** in the yard where one is at a **high risk** of getting injured.
- iii. Establishing government hospitals and health institutions in the vicinity of the ship yards-
With the probability of fatal injuries being very high in the industry, it is extremely important to have the availability of a hospital that can provide

³⁸Ibid.

medical treatment at an affordable cost. Thus, the local authorities especially in such cases ought to invest in building hospitals that have all necessary and relevant manpower, equipment and infrastructure so that they can solve any health problem as quickly as possible. It is also seen that the workers **cannot afford medicines** and they are also **not covered** by any **health insurance**.³⁹ Special pharmaceutical shops need to be opened where **medicines** are **available** at a relatively **affordable** price. The hospital ought to be located within **3-4** kms from the shipyard.

iv. Unemployment Benefits to the workers-

It is observed that the workers in the shipbreaking industry end up **losing** their **job** if they suffer from any major injury while working. In such cases, they suffer loss of income. They find it difficult to sustain and survive financially. Hence, **unemployment benefits** ought to be introduced which can provide them a **financial backbone** for a particular period of time during when they can think, reflect and figure out on how they ought to go about in the future.

VII. CONCLUSION-

There are number of laws, rules and regulations are there in countries where the shipbreaking industry is there. International conventions like the Basel Convention, Hong Kong Convention, European Union Waste Shipment Regulation, European Union Ship Recycling Regulation and certain guidelines under ILO are already made.⁴⁰

However, to solve problems, a practical approach is also required. To solve problems regarding health, apart from building hospitals one also needs to look into other factors also.

Developing nations and countries have always had the desire to rise and advance economically. Yet, it also needs to be understood that the employees and workers play a crucial role in **the development and growth** of a nation. Their continuous **perseverance, dedication and hard work** helps a nation reach **new heights** of success.

Thus, it is also important to ensure that the workers and employees are safe, healthy and doing well. When employees are **happy and content**, the country will eventually and automatically **prosper and excel**.

³⁹Supra Note 16.

⁴⁰The Law, NGO Shipbreaking platform,