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Bangladesh Ship Breaking Industry and Livelihood Assessment of Out-Migrant Workers: A Study of Southern- Northern Region in Bangladesh

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Abstract

Since 1971, the shipbreaking industry in Bangladesh has grown rapidly, employing approximately 40,000 to 50,000 underprivileged workers from the most underdeveloped regions of Bangladesh. After working for 15-20 years, they leave this industry for different sorts of physical problems, which lead to a low quality of life. Therefore, this paper aims to explore the livelihood status of the out-migrant workers in the shipbreaking industry of Bangladesh. The instruments used for this research were a semi-closed-ended survey questionnaire, in-depth interviews, ethnographic participant observation, and secondary research. The respondents are from the southern and northern parts of Bangladesh, aged 18 years and older. This study has discovered no significant differences between northern and southern out-migrant workers in asset ownership, goods, or housing quality. However, the southern out-migrant population earned relatively more than the northern migrants due to better

access to capital and institutional support. This study also shows that after working a few years, young people desire to do external migration for better income opportunities. Despite minimal overall improvement in livelihood status, southern migrants earn comparatively better. Therefore, the government and other stakeholders must bridge the gap of unequal socio-economic development between the southern and northern regions.

Keywords: Shipbreaking Industry, Out-Migrant Workers, Overseas Migration, Livelihood Status.

1. Introduction:

Ship recycling, ship breaking, and ship dismantling refer to the process of deconstructing a ship at the end of its operational life.[1] This process involves removing all gear and equipment and cutting down the ship's structure at a pier or dry dock. Shipbreaking is challenging due to the structural complexity of ships and associated environmental, safety, and health issues.[2]

The shipbreaking industry in Bangladesh is one of the largest, contributing 60-70% to national steel industry.[3] Due to the high unemployment rate here, workers are desperate for jobs, despite the hazards. It is estimated that up to 95% of the workforce consists of migrant laborers from impoverished regions with limited employment opportunities who are involved in the shipbreaking industry.[4]

Background of the Study

Generally, the economic life of ships is about 30–40 years; after that, the owner sells them to commercial ship breakers so that the valuable steel, which is

1 Kazi A B M Shameem, "The Role of the Ship Breaking Industry in Bangladesh and Its Future with Special Emphasis on Capacity Building through Education and Training," 2012.

2 Muhammad Muhibbullah, "Health Hazards and Risks Vulnerability of Ship Breaking Workers: A Case Study on Sitakunda Ship Breaking Industrial Area of Bangladesh," *Journal of Geography and Regional Planning* 2, no. 8 (2013): 172–84.

3 M Shahadat Hossain et al., "Occupational Health Hazards of Ship Scrapping Workers at Chittagong Coastal Zone, Bangladesh," *Chiang Mai J. Sci* 35, no. 2 (2008): 370–81.

4 Maria Sarraf et al., "The Ship Breaking and Recycling Industry in Bangladesh and Pakistan," 2010.

almost 95% of a ship's mass, can be easily recovered. Out of 103,392[5] ships across the world, about 700 to 800 ships larger than 499 GT are scrapped annually.[6]

At the beginning of the 1970s, shipbreaking was highly mechanized in Great Britain, Taiwan, Mexico, Spain, and Brazil. However, rising environmental, health, and safety costs in developed countries shifted the industry to poorer Asian states. Since the 1980s, the major centers of shipbreaking have moved from Europe and North America to East Asia.[7] However, in the late 1980s, this industry basically shifted to five major countries, such as India, China, Bangladesh, Pakistan, and Turkey. At present, Bangladesh, India, and Pakistan share almost 70–80 percent of the international recycling market for ships, with China and Turkey covering most of the rest. Only about 5 percent of global volume is scrapped outside these five countries.[8] India's Alang retained the world's largest scraping site for oceangoing ships, accounting for an average of 70% of tonnage and an average of 50% of worldwide demolition sales. Bangladesh retained second place in terms of volume of recycling.[9]

Basically, in the 1980s, shipbreaking shifted to these countries to increase financial benefits despite low health and safety standards.[10] The Bangladesh coast possesses a higher tidal range and a suitable intertidal zone for beaching large vessels, cost-effective labor, and flexible environmental regulations.[11] According to many reports, the shipbreaking industry in Bangladesh is valued at around $1.5 billion annually. From 2000 to 2010, approximately 30 percent of the world's light displacement tones (LDT) were scrapped in Bangladesh. YPSA (Young Power in Social Action, an NGO) and World Bank studies revealed that 22,000 to 50,000 workers are employed at shipbreaking yards in Bangladesh directly, while the number is around 1,00,000 to 2,00,000 indirectly.

The shipbreaking industry in Bangladesh emerged by accident. A Greek ship,'MD Alpine' was stranded near Sitakunda, Bangladesh, after a severe cyclone.

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5 Godius Kahyarara and D Simon, "Maritime Transport in Africa: Challenges, Opportunities, and an Agenda for Future Research," in *Proc. UNCTAD Ad Hoc Expert Meeting*, 2018, 1–49.

6 Sarraf et al., "The Ship Breaking and Recycling Industry in Bangladesh and Pakistan."

7 Sarraf et al.

8 Sarraf et al.

9 Muhibbullah, "Health Hazards and Risks Vulnerability of Ship Breaking Workers: A Case Study on Sitakunda Ship Breaking Industrial Area of Bangladesh."

10 Sarraf et al., "The Ship Breaking and Recycling Industry in Bangladesh and Pakistan."

11 Hossain et al., "Occupational Health Hazards of Ship Scrapping Workers at Chittagong Coastal Zone, Bangladesh."

Later, the Chittagong Steel House scrapped it. That was the first ship scrapped in Bangladesh. In 1971, the Pakistani ship 'Al Abbas' was bombed, later recovered, and brought to the Faujdarhat seashore. In 1974, Karnafully Metal Works Ltd. turned it to scrap, introducing commercial shipbreaking in Bangladesh.[12]

A survey discovered that 59.59% of workers migrated from different districts, while 40.40% live permanently in Chittagong.[13] Most of the laborers (40.75%) are under the age group of 18–22 years; only 1.13% are under the age group of 46–50 years; and 10.94% of laborers are children. It proves that the young labor force is dominant here, which also indicates that the less experienced and untrained labor force accepts such jobs out of poverty. Geographically, the majority of laborers are from the northern side of Bangladesh. Poverty, a lack of employment, and a low education rate force them to work in this sector. Regrettably, the industry remains unrecognized as a government sector, resulting in various internal and external challenges due to governmental indifference and a lack of support.[14]

Working conditions, accidental issues, and negative impacts on health have been a growing concern over the past few decades among the worker group. As a result, most of the workers are currently leaving this industry. After leaving this industry, they again face tremendous problems adjusting themselves to other jobs, as most of them carry lots of health injuries, which leads them to a miserable life.

If the government cannot safeguard this industry and balance the socioeconomic conditions of its migrant workers, there is a high risk of its collapse, despite its substantial contribution to steel production in the country. Keeping that in mind, the study is designed to focus on two objectives: 1) What are the factors influencing shipbreaking workers to leave this industry? 2) What is the livelihood status of out- migrant workers?

Contribution of the Study

This study contributes to its comprehensive findings on the post-employment livelihood status of out-migrant workers in Bangladesh's south-

[12] Jewel Das and Muhammed Ali Shahin, "Ship Breaking and Its Future in Bangladesh," *Journal of Ocean and Coastal Economics* 6, no. 2 (2019): 9.

[13] Muhibbullah, "Health Hazards and Risks Vulnerability of Ship Breaking Workers: A Case Study on Sitakunda Ship Breaking Industrial Area of Bangladesh."

[14] YPSA BaseLine Survey, 2005

northern region. It also explores their employment pattern, their present economic condition, the challenges they face, their future plans, and their overall quality of life in a detailed fashion. This will help NGOs, social workers, and policymakers understand the overall impact of this industry on the life cycle of out-migrant workers.

Limitations of the Study

The study faced limitations because of respondents' reluctance to provide information, fearing potential repercussions. As there was a lack of prior research on this topic, it was quite tough to find out the workers who left the industry. However, initially, this study was planned to find out the livelihood patterns and familial impacts, including changes in children's behavior. Unfortunately, due to time constraints and limited data availability, this objective could not be fully explored.

2. Review of the Literature

Bangladesh demands about 5 million tons of steel and metal, but domestic production is not sufficient to meet this demand. In that case, the shipbreaking industry plays a vital role in providing steel. It is estimated that more than 350 rerolling mills are using scrap metals, which are provided by different shipbreaking yards. Their production essentially Bangladesh's domestic steel output is estimated at around 2.2 million tons a year, with sales valued at $1.2 billion.[15]

The locations of these industries are influenced by various factors, impacting both localization and urban economics. They are driven by locational advantages, proximity to upstream suppliers and downstream re-rolling mills, and easy access to reworking, wholesaling, and retailing of recyclable items.[4] Six key factors have driven the development of the shipbreaking industry in Bangladesh: long sandy beaches, suitable beaching slopes, stable weather conditions, low environmental awareness, moderate law enforcement, high demand for scrap materials, and the ability to fully recycle scrap materials.[16]

[15] Hasan Ruhan Rabbi and Aevelina Rahman, "Ship Breaking and Recycling Industry of Bangladesh; Issues and Challenges," *Procedia Engineering* 194 (2017): 254–59.

[16] Khandakar Akhter Hossain, "Evaluation of Potential, Prospect and Challenge of Bangladeshi Shipbuilding in Light of Global Contest," 2010.

Over the past two decades, the shipbreaking industry has significantly degraded. Bangladesh's coastal environment. Its operations are chaotic, hazardous to human health, and harmful to the environment. Approximately 23% of LDT is being recycled in Sitakunda, Bangladesh.[9]In Sitakunda, ships are dismantled on the shore, with 90% of the vessel in the intertidal zone, posing challenges in preventing oil and liquid contamination. Despite the availability of dry dock systems to mitigate pollution, they are often unused. Oil and oil product pollution is a significant concern for marine coastal areas due to the indiscriminate disposal of contaminated materials like drilling muds and cuttings, as well as oil spills. Studies have found elevated levels of butyltins in fish from local markets in select Asian and Oceania countries, surpassing acceptable standards.[17]

Seawater and soil in shipbreaking areas show contamination with elevated turbidity, total suspended solids (TSS), and total dissolved solids (TDS), causing increased physical disturbance in the work area.11 Trace metals are produced and released during shipbreaking, resulting in concentrations that exceed safe regulatory limits.[18] Shipyard soil has been contaminated with hazardous radioactive materials like radium (226Ra), thallium (232Th), and potassium (40K) from beach ship-breaking.[19]

This hazardous activity not only harms marine ecology but also severely impacts worker health. Workers face various health hazards in an unhealthy and risky environment, including organ damage (23.19%), sudden death (17.39%), skin diseases (15.94%), physical weakness and gastric problems (11.59%), muscle and chest pain (10.72%), eyesight issues and headaches (8.84%), and breathing difficulties, colds, and coughs (7.54%) due to hazardous materials in shipbreaking activities.[20] Moreover, shipbreaking workers handle toxic substances like asbestos, resulting in various cancers such as esophageal, tracheal, bronchial,

[17] A M Gbadebo, A M Taiwo, and O B Ola, "Effects of Crude Oil and Spent Oil on Clarias Garipinus: A Typical Marine Fish," *American Journal of Environmental Sciences* 5, no. 6 (2009): 753.

[18] N A Siddiquee, "Impact of Ship Breaking on Marine Fish Diversity of the Bay of Bengal," *DFID-SUFER Project, Dhaka, Bangladesh*, 2004, 46; Dennis A Apeti et al., "Characterization of Land-Based Sources of Pollution in Jobos Bay, Puerto Rico: Status of Heavy Metal Concentration in Bed Sediment," *Environmental Monitoring and Assessment* 184 (2012): 811–30.

[19] Hossain, "Evaluation of Potential, Prospect and Challenge of Bangladeshi Shipbuilding in Light of Global Contest."

[20] Muhibbullah, "Health Hazards and Risks Vulnerability of Ship Breaking Workers: A Case Study on Sitakunda Ship Breaking Industrial Area of Bangladesh."

and lung cancers.[21] The injuries and deaths of the workers are also very common and regular events.[22] Most laborers lack education beyond the primary level and receive little guidance or training for their work. This contributes to frequent accidents, resulting in serious injuries and deaths.[23] However, workers are often not properly treated or compensated by industry owners, even after accidents.[24] Despite the prevalence of accidents in the shipbreaking industry, the government's response to mitigate these issues remains insufficient. Furthermore, even when regulations are enforced, yard owners often show reluctance to comply with them. The International Maritime Organization has overall responsibility for coordinating ship recycling issues, including those related to ship design, construction, operation, and environmental impact, with a focus on preserving marine ecology. It's crucial to follow the EU Waste Shipment Regulation, the Hong Kong Convention (2009), and the Basel Convention (1989) to effectively regulate the shipbreaking industry.[25] Though this is a big industry, the Bangladesh government is facing a policy dilemma while implementing the rules and regulations for yard owners.

Workers in this industry typically face socio-economic disadvantages. Most laborers (41.75%) are aged 19–22, with about 11% being children under 18. Ironically, the shipbreaking industry is advertised with signboards claiming "no child labor in this yard."[26]95% of the workers are migrants coming from underprivileged parts of Bangladesh, especially the northern portion of Bangladesh, where employment is scarce and a lack of education and economic underdevelopment prevail.[27] The shipbreaking sector provides employment for approximately 2.8 million people, significantly alleviating Bangladesh's

[21] Wei-Te Wu et al., "Cancer Attributable to Asbestos Exposure in Shipbreaking Workers: A Matched-Cohort Study," *PloS One* 10, no. 7 (2015): e0133128; Md Muhibbullah et al., "Health Hazards and Risks of Ship Breaking Activities in Bangladesh: An Environmental Impact Assessment Approach," *European Journal of Advanced Research in Biological and Life Sciences* 2, no. 1 (2014): 1–15.

[22] Das and Ali Shahin, "Ship Breaking and Its Future in Bangladesh."

[23] Rabbi and Rahman, "Ship Breaking and Recycling Industry of Bangladesh; Issues and Challenges."

[24] Rabbi and Rahman.

[25] Shawkat Alam and Abdullah Faruque, "Legal Regulation of the Shipbreaking Industry in Bangladesh: The International Regulatory Framework and Domestic Implementation Challenges," *Marine Policy* 47 (2014): 46–56.

[26] Md Juel Rana Kutub et al., "Ship Breaking Industries and Their Impacts on the Local People and Environment of Coastal Areas of Bangladesh," *Human and Social Studies* 6, no. 2 (2017): 35–58.

[27] Sarraf et al., "The Ship Breaking and Recycling Industry in Bangladesh and Pakistan"; Kutub et al., "Ship Breaking Industries and Their Impacts on the Local People and Environment of Coastal Areas of Bangladesh."

unemployment issue. The workers normally do not have any kind of formal training, and there is no workers' welfare union either.[28] Only one-fourth of the labor forces have their hometowns in and around the shipbreaking yards, which are in the southern parts of Bangladesh.[29] Most workers have only completed primary education or less, which forces them to accept low-wage jobs. The shipbreaking sector also provides limited opportunities for educated, skilled, and experienced workers.[30]

However, due to inadequate management and regulations, ship-breaking activities have severely degraded Sitakunda's once-pristine intertidal and biodiverse coastal areas in Chittagong.[31] With the ship-recycling industry's undeniable demands, it's crucial to now reconsider these operations under environmentally sound practices, known as 'Green ship recycling'. The process of green recycling is tedious and requires proper planning and preparation.[32] The whole management system should be categorized into three groups: management mechanisms and various special programs; the nation's laws and regulatory framework; and international conventions and treaties.[33]

The literature reviewed reveals numerous studies focusing on the overall economic impact, environmental consequences, policy frameworks, and workers' health within the shipbuilding industry. However, there is a remarkable absence of specific literature addressing the status of livelihoods among out-migrant workers in the shipbreaking industry and their overall quality of life.

3. Research Methodology

This study is designed on the basis of the "Sustainable Livelihood Framework (SLF)" to justify the different types of capital, i.e., human, physical, financial,

[28] M Hoque and M M Emran, "Role of Ship-Breaking Industries in Bangladesh and ILO Guidelines: A Critical Discussion," *Global Journal of E-Economics* 16, no. 3 (2016): 9; Sohanur Rahman, "Aspects and Impacts of Ship Recycling in Bangladesh," *Procedia Engineering* 194 (2017): 268–75.

[29] Kutub et al., "Ship Breaking Industries and Their Impacts on the Local People and Environment of Coastal Areas of Bangladesh."

[30] Kutub et al.

[31] Hasan Muhammad Abdullah et al., "Monitoring the Drastic Growth of Ship Breaking Yards in Sitakunda: A Threat to the Coastal Environment of Bangladesh," *Environmental Monitoring and Assessment* 185 (2013): 3839–51.

[32] Md Shakhaoat Hossain et al., "Impact of Ship-Breaking Activities on the Coastal Environment of Bangladesh and a Management System for Its Sustainability," *Environmental Science & Policy* 60 (2016): 84–94.

[33] Hossain et al.

social, and natural, that affect the livelihood strategies of an individual. Besides, this study was developed through semi-close-ended interviews, in-depth interviews, ethnographic participant observation, and secondary research. The respondents were selected by a snowball and purposive sampling procedure. A total of 120 semi-close-ended interviews and 10 in-depth interviews were taken. The questionnaires were provided to the respondents, while flexibility was also given to the participants to share their information beyond the questionnaires. Verbal consent was obtained from each of the respondents for using their information for this study. The facial expressions of the respondents were also taken into consideration during the field note.

The data was collected through extensive fieldwork. All the authors of this research visited a number of times to collect the information, and the first author stayed in the designed study area from November 2023 to January 2024 for almost three months for close observation. During this research period, all the authors visited different shipbreaking industries, i.e., Golden Espat shipbreaking yard, T S shipbreaking yard, A M N steel, and Taleb shipbreaking yard. Findings were analyzed based on the interviews, keeping ethnographical knowledge in mind. Only Microsoft Excel was used to analyze the information shared by the participants.

4. Results

4.1 Factors Influencing Workers to Leave the Shipbreaking Industry

Physical Condition of the Worker

Based on interviews, many workers face physical challenges after prolonged employment in the shipbreaking industry. 27% reported permanent injuries, while 73% suffered temporary injuries. Exposure to heavy metal toxicity has led to fatigue and damage to vital organs such as the brain, lungs, kidneys, liver, and blood. One of the respondents reported, "*I am lucky that I didn't meet any accidents while working in this industry. But despite the amount of pressure, I needed to take for a long time, now I am facing problems with my backbone. I can't sit down, or I can't keep standing for a long time. Actually, for this backbone problem, I left the industry*."

Fear of Accidental Issues

The fear of accidents is a significant concern for workers wanting to leave the shipbreaking industry. Among respondents, 73% cited accidents as a major reason for leaving. Specific fears include falling objects (39%), being struck by objects (14%), tripping and falling (11%), heat and electrical shocks (5.0%), and exposure to harmful substances (0.25%).

Mental stress

Mental stress is a major reason workers leave the industry. They reported family accidents happening while they were at work, and since phones are not allowed and must be deposited at the entry gate, they constantly worry about family emergencies and fear not being notified in time.

One of the respondents shared, *"On April 17, 2014, one incident changed my whole life. My wife has been suffering from bleeding due to her pregnancy problem since around 2:30 p.m. I was at work at the time. While this critical condition arose, it was informed to the manager by my neighbor. But that day, there was a visit by the higher authority. They didn't let me know the critical condition of my wife. There was nobody in the house. My wife was about to die. While I returned home, I saw my wife falling down on the floor, and she was senseless. I took her to the hospital, and it was a miscarriage."* Almost 79% of out-migrant workers experienced loneliness and isolation during their free time. Being located outside the city contributed to their feelings of loneliness and mental stress.

Another respondent shared that, *"We just worked in the industry. I missed my family terribly. Working there feels like being in a different world, isolated from everything and everyone I care about."*

Lack of Job Security and Facilities:

Lack of job security in the ship-breaking industry drives workers to leave, increasing anxiety and stress and lowering morale and job satisfaction. One respondent narrated that *"no facilities like a provident fund, medical allowance, or housing allowance were given to us. The company forced us to sign a form where it is written that all allowance is given to workers, but it's completely false."*

Another worker shared, *"It was a very tough job. We needed to work almost 12–14 hours every day, but the wages were not sufficient. Most of the workers were carrying*

injuries. Most of the company didn't give any allowance for treatment. They behaved very rough. Even if somebody is sick, they don't allow him to leave. If somebody is absent, they just sack him from the job."

External Migration

Younger people, mostly aged between 18 and 30, found that they were interested in migrating abroad after a few years of work. They believe that, with technical knowledge, they could get work visas to Malaysia or Dubai. It was found that 57% want to migrate for higher wages, 26% for better employment opportunities, and 17% for a safer working environment.

Cultural Adaptation

Outsiders face challenges adapting to the local culture. The study revealed two findings: 1) Workers from outside Chittagong struggle to form good relations with the locals. 2) Locals do not accept them. This was evident during fieldwork. One of the respondents shared that,

"I found it really difficult to adapt to the local culture here at the shipbreaking yard. Different languages and customs made it more complicated to communicate and connect with others. As an outsider, every day I felt stressed and alone. Eventually, I had to make the decision to leave the industry in search of a place where I could feel more at ease and accepted."

4.2. Livelihood Status of Out-Migrant Workers

Human Capital

Age Distribution Pattern

The majority of respondents (31.67%) were aged 31-40 years, while 30% were aged 21-30 years. Only 15% were over 40. The high proportion of the youthful group (21-40) brings energy and enthusiasm to the demanding, labor-intensive tasks involved in shipbreaking.

Table 4.1: Age Distribution amongst Sample Respondent

Variable	Category	Number of Responses	% of the total
Age of the Respondents	Below 20 years	28	23.34
	21-30 years	36	30
	31-40 years	38	31.67
	41-50 years	18	15
	Total	120	100%

Source: Authors Analysis Based on Field work (2023-2024)

Gender Distribution

The shipbreaking industry involves heavy metal work, so women are officially not allowed to work. This means men contribute entirely to the raw material production for the national steel industry.

Table 4.2: Gender Distribution amongst Sample Respondent

Variable	Category	Number of Responses	% of the total
Gender of the respondents	Male	120	100
	Female	0	0
	Total	120	100%

Source: Authors Analysis Based on Field work (2023)

Level of Education Attained

The table below shows that 60.83% of respondents have limited educational attainment, having completed only primary school or less, while 39.16% have secondary school education or less.

Table 4.3: Educational Level of Sample Respondents

Level Of Education	Number of Respondents	% of the total
primary education or less than that	73	60.83
secondary education or less than that	47	39.16

Source: Authors Analysis Based on Field work (2023)

Geographical Location of the Out-Migrant Workers

The findings show that 65.83% of laborers originate from northern Bangladesh, where economic underdevelopment, limited job opportunities, and educational deficiencies prevail. In contrast, only 34.16% of out-migrant workers come from southern regions.

Table 4.4: Geo-graphical Location of the Out-Migrants Workers

Geographical Location	Number of Respondents	% of the total
Southern(Chittagong, Barisal, Noakhali, Feni)	41	34.16
Northern(Kurigram, Bogura)	79	65.83

Source: Authors Analysis Based on Field work (2023)

Employment Pattern of the Out-Migrants Workers

Local residents primarily engage in easy bike driving (42%) and farming (27%), leveraging local resources and familiarity with these occupations. The high percentage of bike drivers reflects a preference for self-employment with flexible hours. Conversely, outsiders are heavily involved in farming (64%) and small shop businesses (17%), driven by limited access to local networks and resources, which directs them towards agricultural opportunities.

Table 4.5: Employment Pattern of the Out-Migrants Workers

Types of Employment	Local People (Southern)	Outsider (Northern)
Farming	27%	64%
Fishing Business	12%	-
Occasional Fishing	9%	-
Driving Easy Bike	42%	13%
Small Shop Business	-	17%
External Migration	2%	2%
workshop Business	8%	-
others	-	6%

Source: Authors Analysis Based on Field work (2023)

Experience of the Out-Migrant Workers

Most out-migrant workers (39.16%) have 10-15 years of experience, with 27.67% having 15-20 years' experience, showing physical decline over time that limits their ability to remain in the industry.

Table 4.6: Experience Level of the Out- Migrant Workers

Variable	Category	Number of Responses	% of the total
Experience of the Out- Migrant	0-5	11	9.17
	5-10	30	25
	10-15	47	39.16
	15-20	32	26.67
	Total	120	100

Source: Authors Analysis Based on Field work (2023)

Physical Capital

Housing Condition of the Out –Migrant Workers

Most people (70.83%) live in houses with straw roofs and bamboo walls, indicating minimal improvement in their quality of life. They continue to face significant challenges in meeting their basic needs. Only 7.5% reside in semi-permanent structures, highlighting the vulnerability of out-migrant workers in the shipbreaking industry.

Table 4.7: Housing Condition of the Out-Migrant Workers

Housing Condition	Frequency	% of the total
Straw Roof and Bamboo	85	70.83
Tin and Wood	26	21.67
Semi Pacca	9	7.5
Total	120	100

Source: Authors Analysis Based on Field work (2023)

Drinking-Water Sources

Survey results indicate that 88% of local residents (southern) and 82% of outsiders (northern) use tube wells as their primary water source. The remaining percentage from both groups relies on ponds, rivers, or other water bodies as secondary sources.

Financial Capital

Initial Income Level of the Out-Migrants Workers

The table shows income categories ranging from below 1000 BDT to 20,000 BDT and above. The largest group of workers (27.5%) earns between 15000 and 20000 BDT. However, due to global economic conditions and high inflation rates, this indicates a low quality of life. There are also significant proportions earning between 1000 and 5000 BDT (5.83%), living on subsistence income (14.16%), and being unemployed (14.16%). Initial income levels are influenced by age, experience, location, and job type.

Table 4.8: Initial Income Level of the Out-Migrant Workers

Income Category (in BDT)	Frequency	Percent
1000-5000	7	5.83%
5000-10000	7	5.83%
10000-15000	13	10.83%
15000-20000	33	27.5%
20000 & above	26	21.67%
Reported as "subsistence income"	17	14.16%
Unemployed	17	14.16%
Total	120	100.00%

Source: Authors Analysis Based on Field work (2023)

Savings of the Out-Migrants Workers

More than 66% of out-migrators are unable to save money initially, with 14.16% saving less than BDT 5000, 10.83% saving between BDT 5000 and 10000,

and 8.34% saving over BDT 10000. This reflects their inability to save due to poor economic conditions, highlighting their overall low quality of life.

Table 4.9: Savings of the Out-Migrant Workers

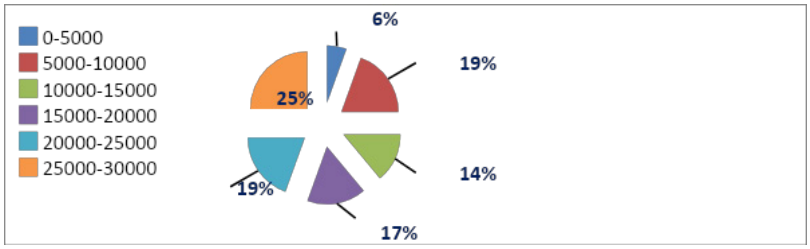
Amount of Total Savings (BDT)	Frequency	Percent
No	80	66.67%
0-5000	17	14.16%
5000-10000	13	10.83%
10000 & above	10	8.34%
Total	120	100%

Source: Authors Analysis Based on Field work (2023)

Initial Expenditure of the Out-Migrants Workers

The average monthly expenditure is BDT 17,375, with a maximum of BDT 27,250 and a minimum of BDT 7,500. Food expenditure averages BDT 10,360 (maximum BDT 16,520, minimum BDT 4,200), while non-food items average BDT 7,015 (maximum BDT 10,730, minimum BDT 3,300). Generally consistent food costs are observed among all out-migrant workers, but non-food expenses tend to be lower for those from northern Bangladesh due to better access to local resources. However, non-food spending varies individually.

Figure 4.1: Initial Expenditure of the Out-Migrants Workers



Source: Authors Analysis Based on Field work (2023)

Social Capital

Financial Crisis

One of the participants shared his financial crisis just after leaving the industry. He shared, "What can we do now, sir? If there was enough money, there would have been no problems. Since I didn't have any savings, we used to eat one meal per day. We belong to a poor family, sir; if we had some land for farming, we would not have to bear the situation. I didn't have any earnings in my family; I was the only earning source of my family."

Similarly, other participants reported his inability to pay the rent of their housing.

"I left the industry because the salary was not enough; I had many responsibilities; my child was 2 years old then; and I was unable to pay my room rent with that half salary, so ultimately, I had to decide to leave. But after leaving the SBI, I was mentally broken." It is therefore evident that participants faced the challenge of managing their finances after migration.

Lack of Social Support

Migrants who have no other option than to leave the industry have faced a lack of social support, which also became a stressor for them and made their condition worse.

Land Ownership of the Out- Migrant Workers

The study found that only 3.2% of migrant workers from the shipbreaking industry own land, indicating their lack of access to natural capital and resulting in a low quality of life.

5. Discussion

1. This paper aimed to identify factors influencing workers to leave the industry and their livelihood status afterward. Interviews with respondents and officials revealed six main reasons for leaving this industry: physical conditions, fear of accidents, mental stress, job insecurity, external migration, and cultural adaptation, indicating their lack of access to natural capital and resulting in a low quality of life.

2. Most workers leaving the industry are aged between 21–40 and often seek external migration for better job opportunities. A majority have less than primary education, increasing accident risks due to an inadequate understanding of safety regulations. Geographically, many workers come from northern Bangladesh, and their quality of life does not significantly improve after leaving the industry.
3. A study found that a small percentage (14.16%) of out-migrant workers remain totally unemployed; 40% of workers can earn between 15k-20k, which is a very low income compared to the present inflation in the national economy. The majority of the workers don't have any saving capabilities, which indicates a low quality of life.
4. Housing conditions for migrant workers are typically poor, with common structures made of straw and bamboo, reflecting their low quality of life. Their income ranges between 15k and 20k, allowing little room for savings and limited spending on essentials. Workers from southern Bangladesh generally have slightly better living conditions than those from the north, though overall, life quality remains challenging for both groups.

6. Conclusion

Due to its lack of mineral resources like iron, Bangladesh relies heavily on the shipbreaking industry to supply raw materials for its steel production. Again, South Asian countries are known for their low labor costs and ineffective law enforcement, and unfortunately, Bangladesh is leading in this aspect. This study found that workers who have a major contribution to the national economy are currently not willing to work in this industry because their quality of life doesn't improve and they suffer huge physical barriers throughout their lives. The main reason those yard owners in this industry don't follow the rules and regulations to protect their workers. Furthermore, this study also revealed that young, uneducated people take this industry as a learning center for their mechanical knowledge, and after learning the technical things, they want to migrate outside of the country, which will be very harmful for this industry. So it is high time for policymakers, social workers, and also the government to assess this industry deeply so that people working here are not suffering anymore, and those who

have already left this industry after giving all their energy should be under a need-based social security program.

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