(公 3-02)

輸送貨物の事故情報に関するデータベース

報 告 書

2024 年 3 月 31 日

一般社団法人　日本海事検定協会

NIPPON KAIJI KENTEI (THAILAND) LIMITED

I. DATABASE OF DAMAGE CARGO (Data Analysis of 2021)

(NIPPON KAIJI KENTEI (THAILAND) LIMITED)

31 MARCH 2024

DATABASE OF DAMAGE CARGO

DATA ANALYSIS OF 2021

PRODUCED BY NKKT

CONTENTS

1. Introduction

The purpose of this database is to organize past accident information, analyze the type of damaged cargo, accident characteristics and trends, cause of accident, etc., examine the accident countermeasures.

2. Database Subject

The subject in this database included damage cases in 2021, which were carried as directly request or as a third-party inspection agency for import shipment, and we extracted and analyzed it, mainly for container cargo.

This database consists of data collected under the above conditions, and it is only a reference value because it is a part of import cargo accidents and is not complete.
In addition, this data does not represent the frequency of accidents in cargo imported into Thailand, as it only contains information on accidents which have been inspected by NKKT.

3. Database Categories

Transportation method:

- Vessel
- Flight
- Train
- Truck
- Other Method

Cargo Categories:

- Food
- Machinery
- Paper
- Chemical Product
- Metal Material
- Steel
- Electrical Product
- Agricultural Product
- Medical Item
- Plastic

Packages:

- Bare
- Wooden Case
- Bag
- Carton
- Palletized
- Drum
- Bulk
- Roll
- Bundle
- Steel Case
- Aluminate Sheet

Location where damage occurred:

- Storage at Loading Port
- Loading Operation
- Vanning Operation
- Inland Transportation
- In Transit
- Transshipping
- Unloading Operation
- Devanning Operation
- Storage at Discharging Port
- Storage at Airport
- During Processing

Damage type:

- Deformed
- Leakage
- Torn
- Wet by Sea Water
- Wet by Fresh Water
- Humidity and/or Temperature change gap
- Molded
- Rusted
- Stained
- Oxidized
- Contaminated
- Deteriorated

- Missing/Non-delivery/Pilferage
- Operation Failure/Malfunction
- Burnt
- Quality Degraded
- Discrepancy
- Melted/Thaw

Cause of damage:

- Impact/Shock during transportation
- Rough handling
- Container sustained damage/malfunction
- Poor Lashing
- Improper Stowage/Loading
- Poor cleaning
- Fire
- Rise in Temperature
- Humidity change/Temperature change gap
- Cargo nature
- Vessel/Container Submerge
- Thief
- Defective cargo hold
- Improper Storage
- Delay of the vessel

4. Detail damage case based on cargo types

1. Summary of Type of Damage in 2021

Type of Damage	Ratio
Contaminated	7.13%
Deformed	43.21%
Deteriorated	5.35%
Discrepancy	0.22%
Leakage	0.89%
Missing/Non-delivery/Pilferage	0.22%
Molded	2.23%
Operation Failure/Malfunction	0.67%
Quality Degraded	0.89%
Rusted	9.35%
Stained	1.56%
Torn	7.13%
Wet by Fresh Water	18.04%
Wet by Sea Water	1.11%
Humidity and/or Temperature change gap	1.34%
Melted/Thaw	0.45%
Burnt	0.22%
Total	100.00%

Table 1: Summary of Type of damage in 2022

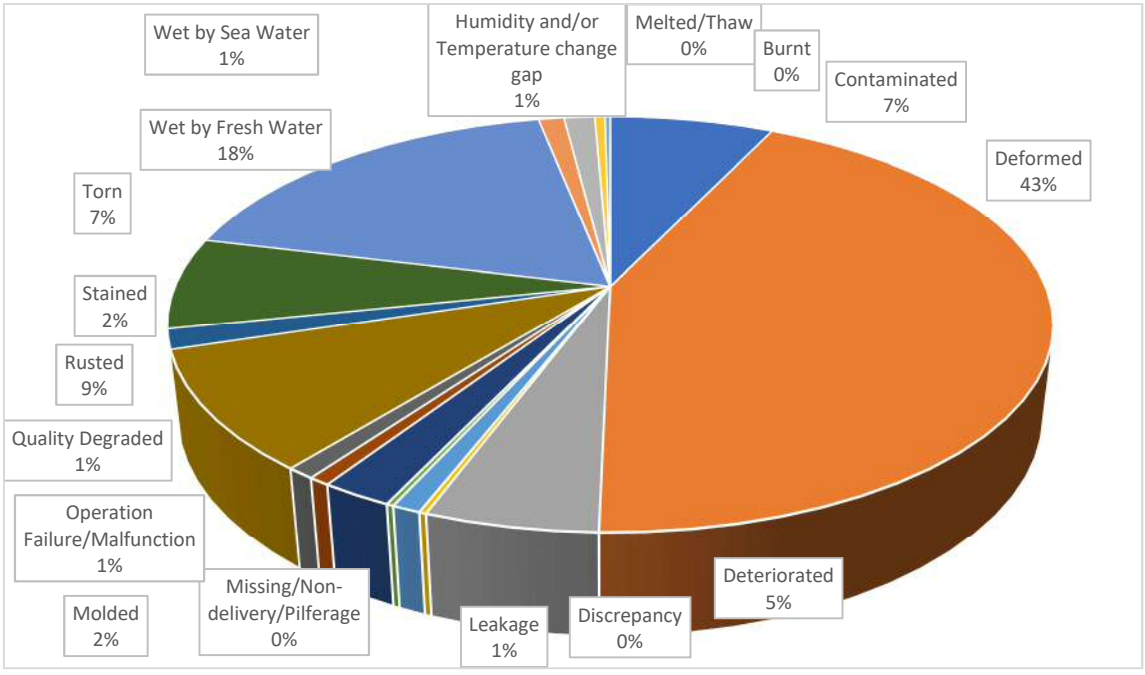

Chart 1: Summary of Type of damage in 2022

2. Food

[2-1] Type of damage

Type of Damage	Ratio
Deformed	3.33%
Deteriorated	70.00%
Missing/Non-delivery/Pilferage	3.33%
Molded	16.67%
Quality Degraded	3.33%
Wet by Sea Water	3.33%
Total	100.00%

Table 2-1: Type of damage to Food cargo

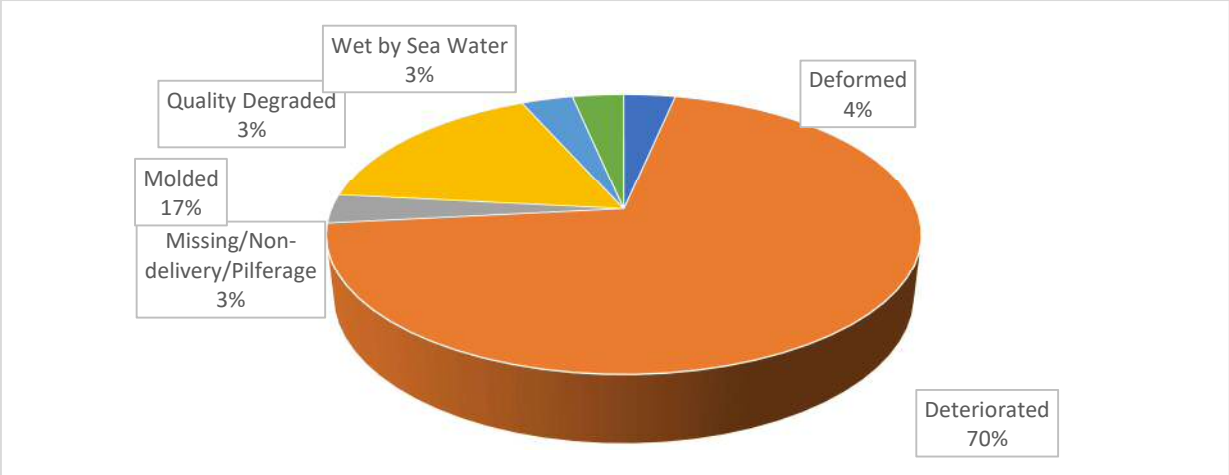

Chart 2-1: Type of damage to Food cargo

[2-2] Location of damage occurred

Occurred location	Ratio
In Transit	90.00%
Storage at Loading Port	6.67%
Vanning Operation	3.33%
Total	100.00%

Table 2-2: Location of damage occurred of Food cargo

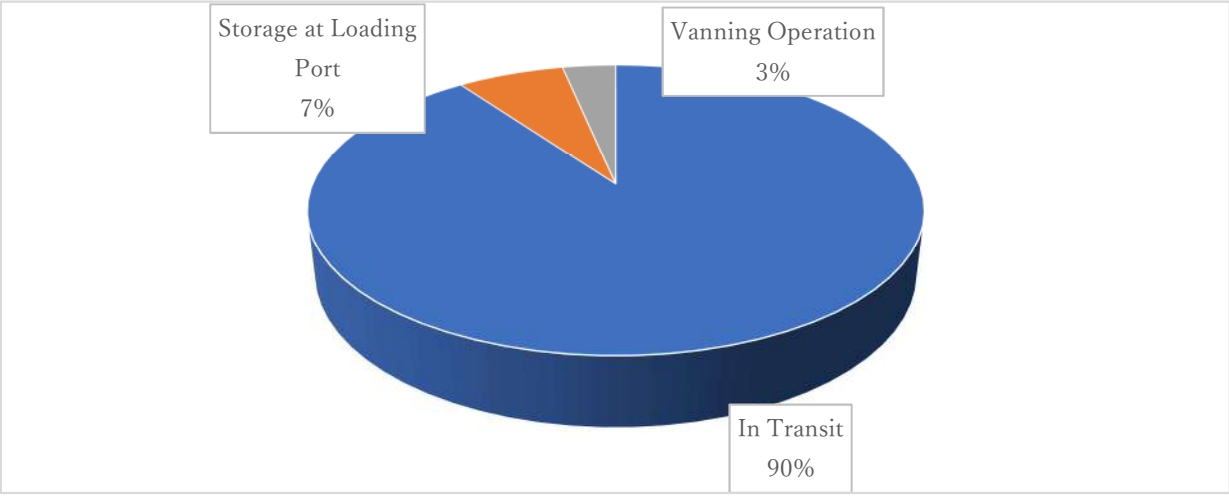

Chart 2-2: Location of damage occurred of Food cargo

[2-3] Cause of damage

Cause of damage	Ratio
Cargo nature	13.33%
Container sustained damage/malfunction	63.33%
Defective cargo hold	3.33%
Impact/Shock during transportation	3.33%
Rise in Temperature	10.00%
Rough handling	3.33%
Thief	3.33%
Total	100.00%

Table 2-3: Cause of damage of Food cargo

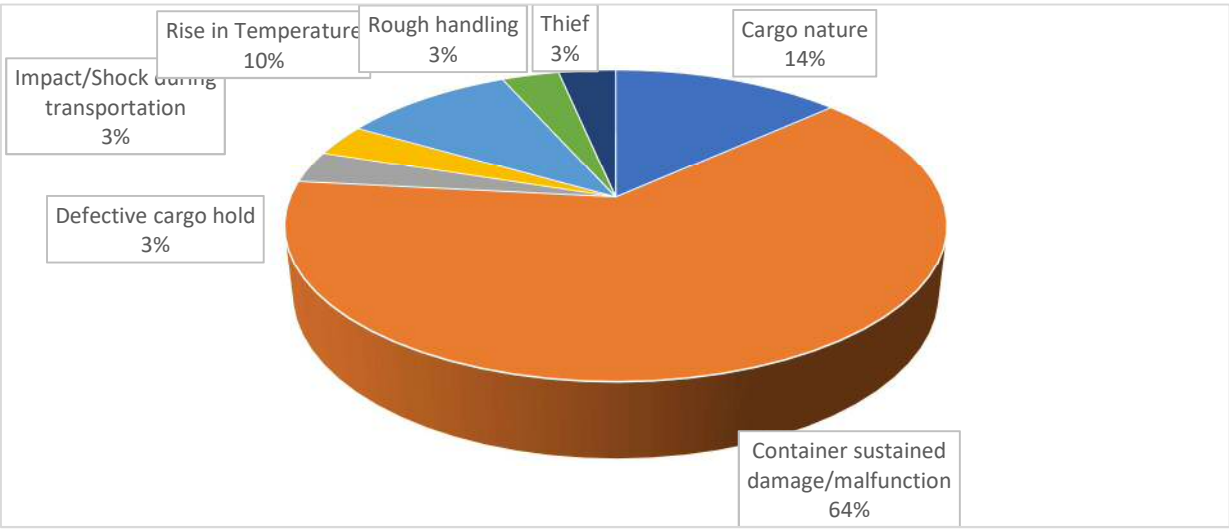

Chart 2-3: Cause of damage of Food cargo

3. Machinery

[3-1] Type of damage

Type of Damage	Ratio
Contaminated	1.10%
Deformed	62.64%
Molded	3.30%
Operation Failure/Malfunction	1.10%
Quality Degraded	1.10%
Rusted	3.30%
Stained	3.30%
Torn	3.30%
Wet by Fresh Water	16.48%
Wet by Sea Water	1.10%
Humidity and/or Temperature change gap	3.30%
Total	100.00%

Table 3-1: Type of damage to Machinery cargo

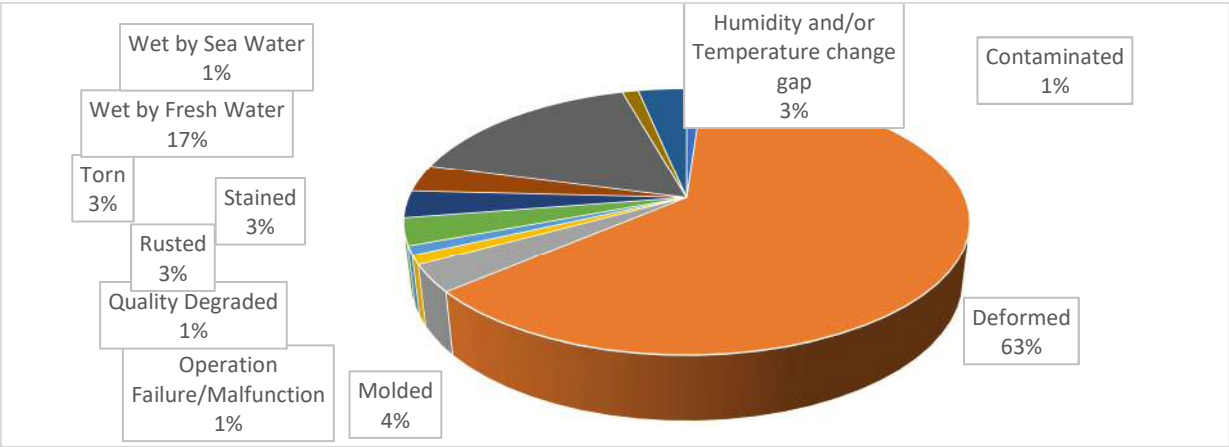

Chart 3-1: Type of damage to Machinery cargo

[3-2] Location of damage occurred

Occurred location	Ratio
Devanning Operation	9.89%
In Transit	45.05%
Inland Transportation	7.69%
Loading Operation	1.10%
Storage at Airport	4.40%
Storage at Discharging Port	1.10%
Storage at Loading Port	4.40%
Unloading Operation	2.20%
Vanning Operation	4.40%
During Processing	19.78%
Total	100.00%

Table 3-2: Location of damage occurred of Machinery cargo

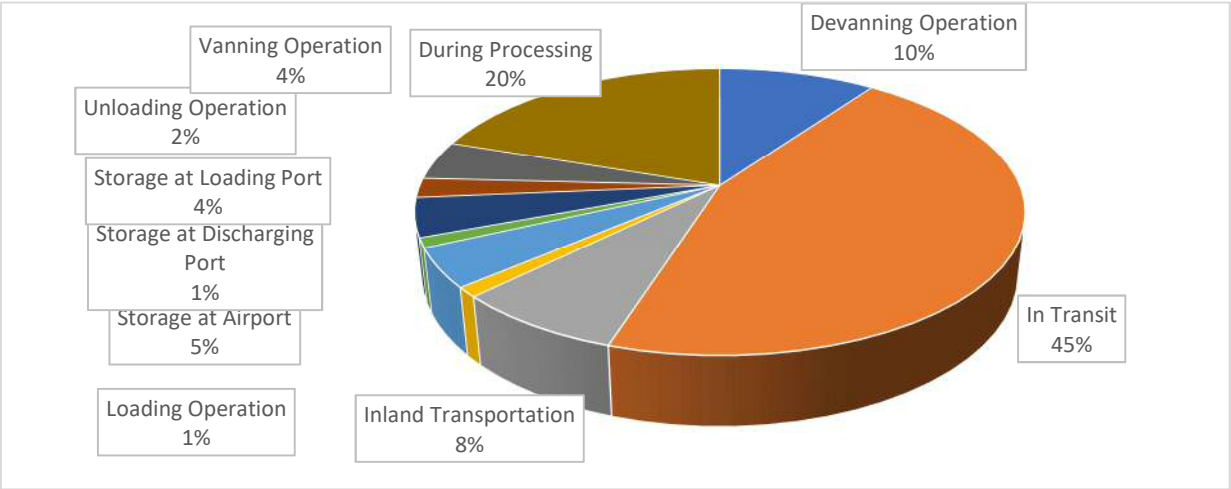

Chart 3-2: Location of damage occurred of Machinery cargo

[3-3] Cause of damage

Cause of damage	Case	Ratio
Container sustained damage/malfunction	10	10.99%
Defective cargo hold	1	1.10%
Humidity change/Temperature change gap	8	8.79%
Impact/Shock during transportation	24	26.37%
Improper Storage	14	15.38%
Improper Stowage/Loading	1	1.10%
Poor cleaning	3	3.30%
Poor Lashing	2	2.20%
Rough handling	28	30.77%
Total	91	100.00%

Table 3-3: Cause of damage of Machinery cargo

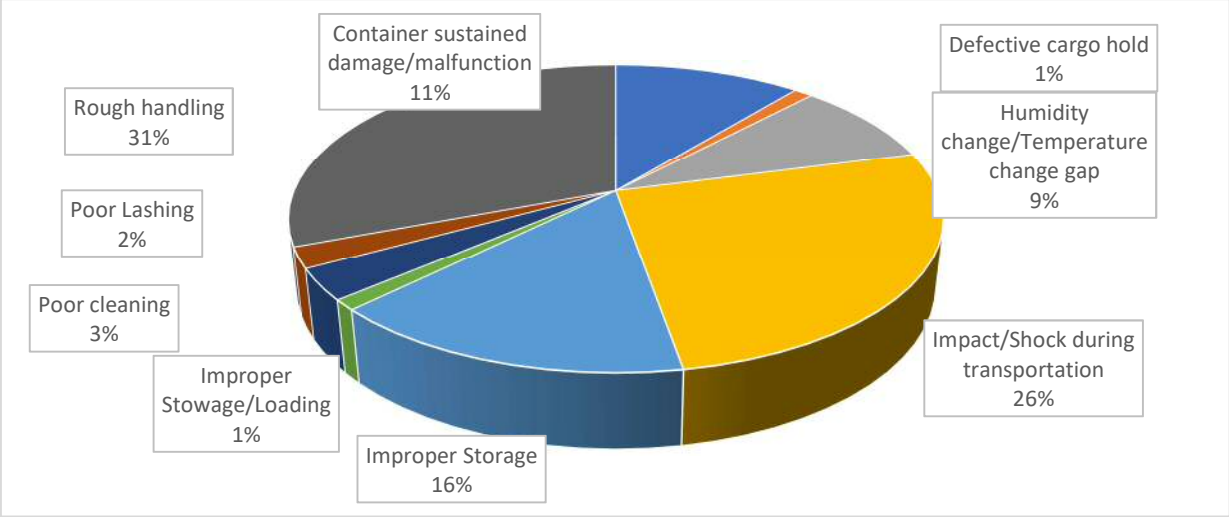

Chart 3-3: Cause of damage of Machinery cargo

4. Paper

[4-1] Type of damage

Type of Damage	Ratio
Contaminated	5.26%
Deformed	21.05%
Torn	36.84%
Wet by Fresh Water	36.84%
Total	100.00%

Table 4-1: Type of damage of Paper cargo

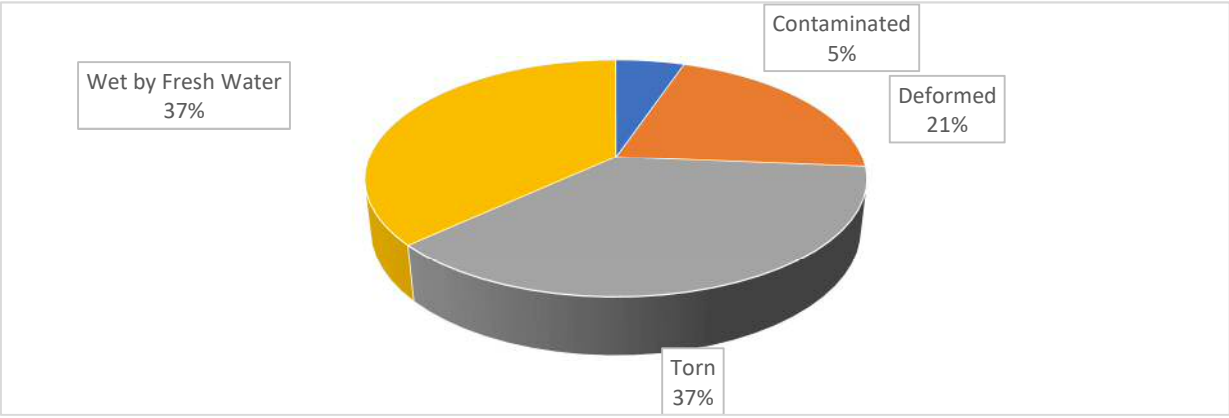

Chart 4-1: Type of damage of Paper cargo

[4-2] Location of damage occurred

Occurred location	Ratio
Devanning Operation	10.53%
In Transit	47.37%
Inland Transportation	5.26%
Storage at Discharging Port	5.26%
Storage at Loading Port	5.26%
Vanning Operation	21.05%
During Processing	5.26%
Total	100.00%

Table 4-2: Location of damage occurred of Paper cargo

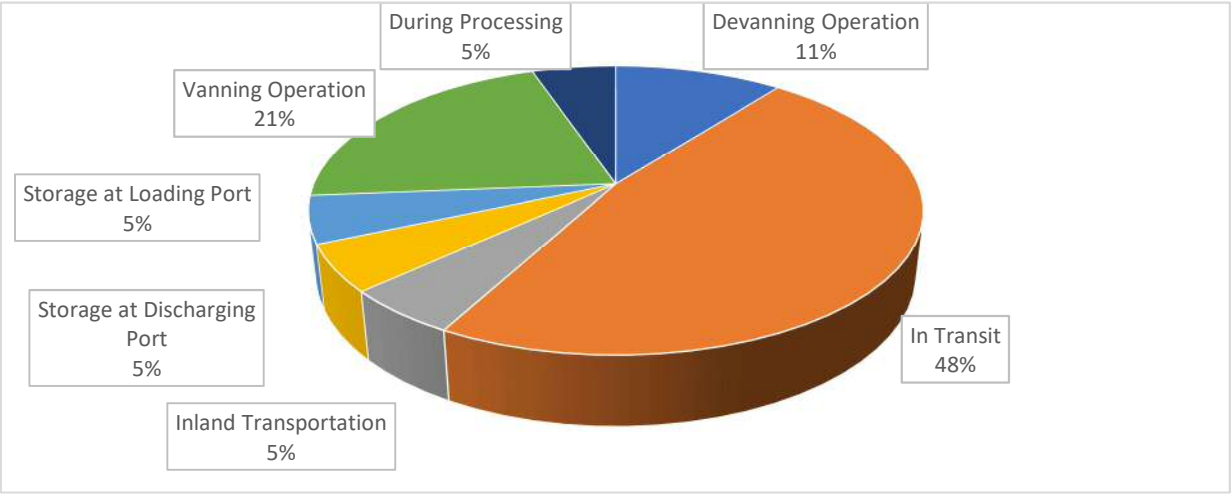

Chart 4-2: Location of damage occurred of Paper cargo

[4-3] Cause of damage

Cause of damage	Ratio
Container sustained damage/malfunction	31.58%
Impact/Shock during transportation	15.79%
Improper Storage	10.53%
Poor cleaning	5.26%
Rough handling	36.84%
Total	100.00%

Table 4-3: Cause of damage of Paper cargo

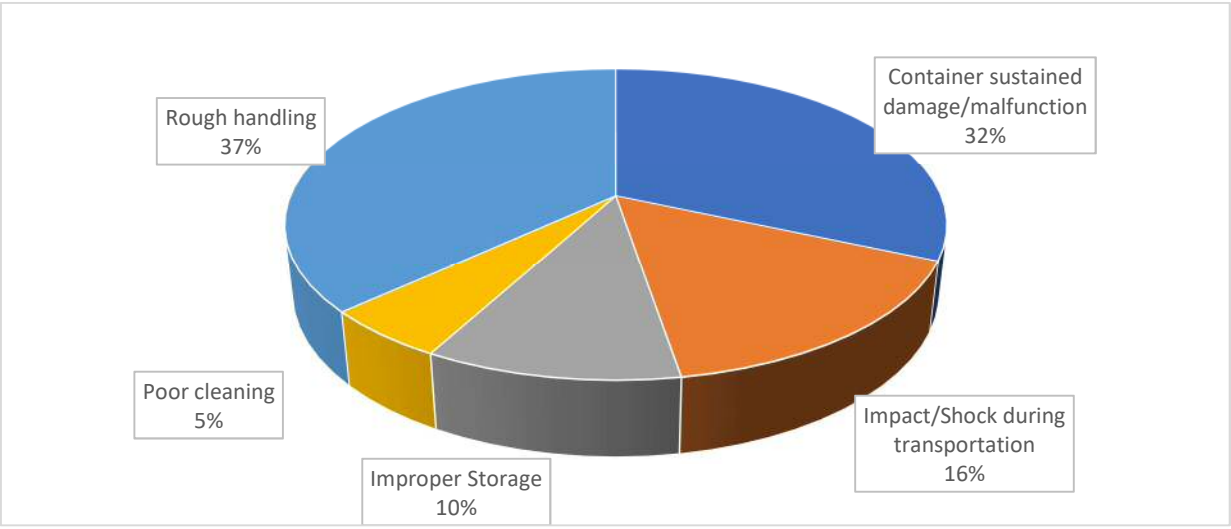

Chart 4-3: Cause of damage of Paper cargo

5. Chemical Product

[5-1] Type of damage

Type of Damage	Ratio
Deformed	11.54%
Deteriorated	3.85%
Discrepancy	3.85%
Leakage	15.38%
Molded	3.85%
Rusted	7.69%
Torn	15.38%
Wet by Fresh Water	26.92%
Humidity and/or Temperature change gap	3.85%
Melted/Thaw	7.69%
Total	100.00%

Table 5-1: Type of damage of Chemical Product

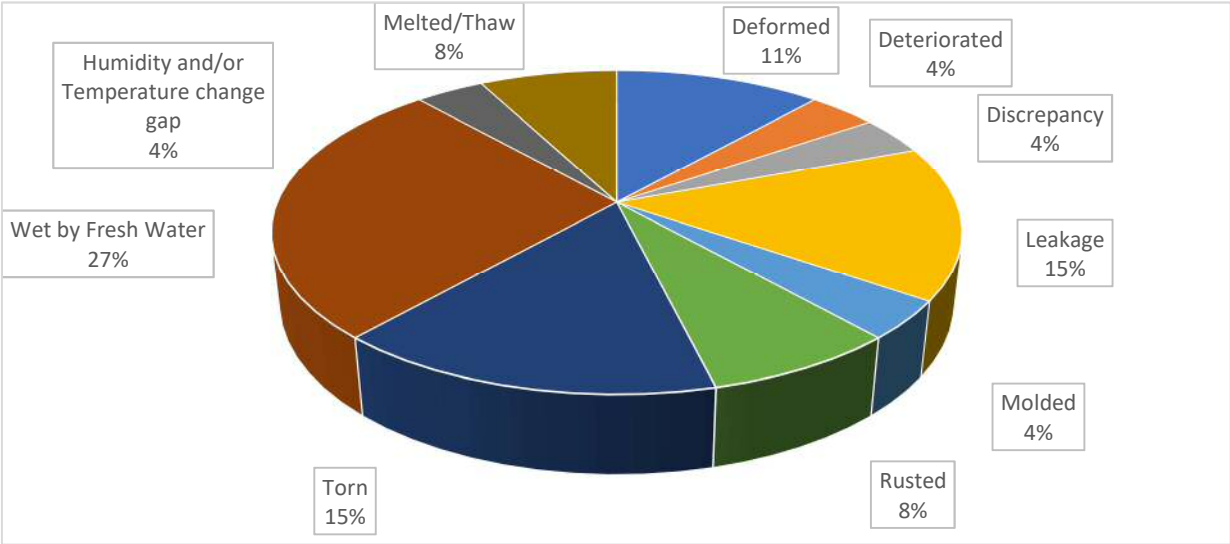

Chart 5-1: Type of damage of Chemical Product

[5-2] Location of damage occurred

Occurred location	Ratio
Devanning Operation	7.69%
In Transit	53.85%
Inland Transportation	11.54%
Storage at Loading Port	3.85%
Vanning Operation	23.08%
Total	100.00%

Table 5-2: Location of damage occurred of Chemical Product

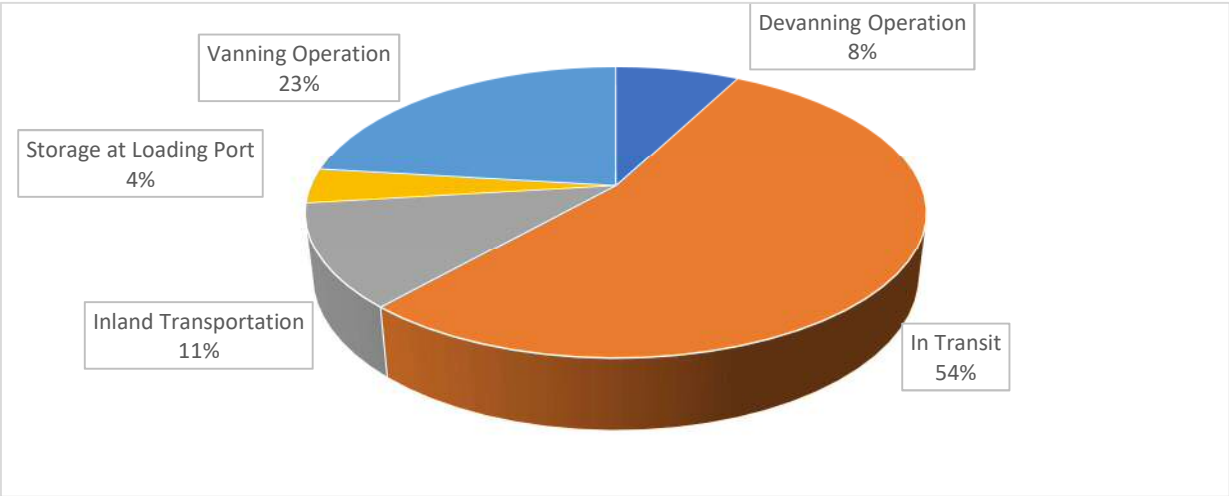

Chart 5-2: Location of damage occurred of Chemical Product

[5-3] Cause of damage

Cause of damage	Ratio
Cargo nature	7.69%
Container sustained damage/malfunction	15.38%
Humidity change/Temperature change gap	11.54%
Impact/Shock during transportation	15.38%
Improper Storage	7.69%
Improper Stowage/Loading	3.85%
Rise in Temperature	11.54%
Rough handling	26.92%
Total	100.00%

Table 5-3: Cause of damage of Chemical Product

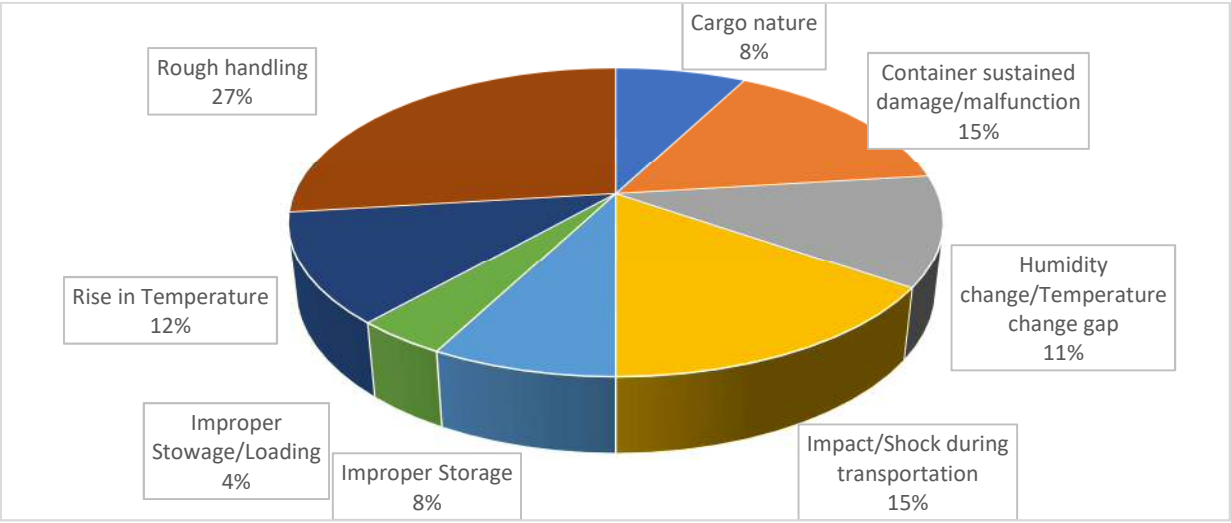

Chart 5-3: Cause of damage of Chemical Product

6. Metal Material

[6-1] Type of damage

Type of Damage	Ratio
Deformed	50.00%
Rusted	14.29%
Torn	14.29%
Wet by Fresh Water	21.43%
Total	100.00%

Table 6-1: Type of damage of Metal Material

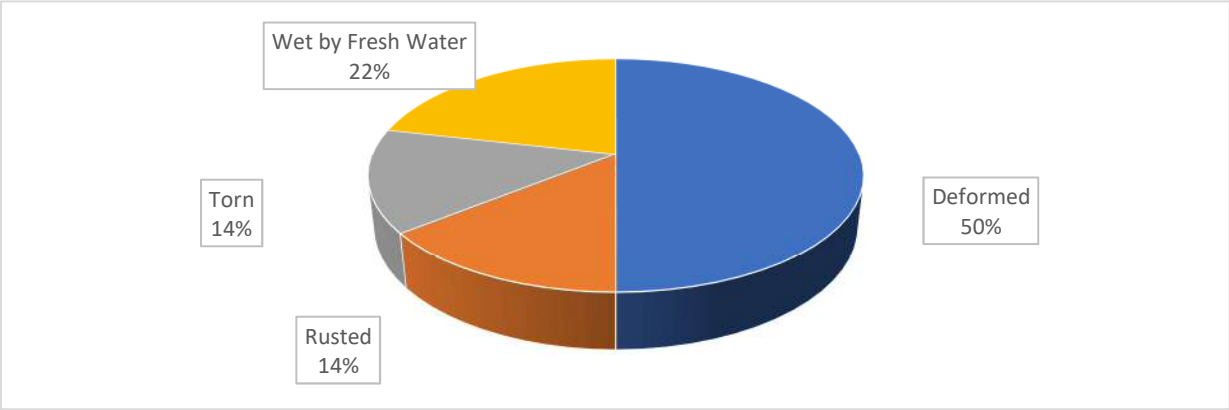

Chart 6-1: Type of damage of Metal Material

[6-2] Location of damage occurred

Occurred location	Ratio
Devanning Operation	35.71%
In Transit	42.86%
Inland Transportation	7.14%
Storage at Discharging Port	7.14%
Storage at Loading Port	7.14%
Total	100.00%

Table 6-2: Location of damage occurred of Metal Material

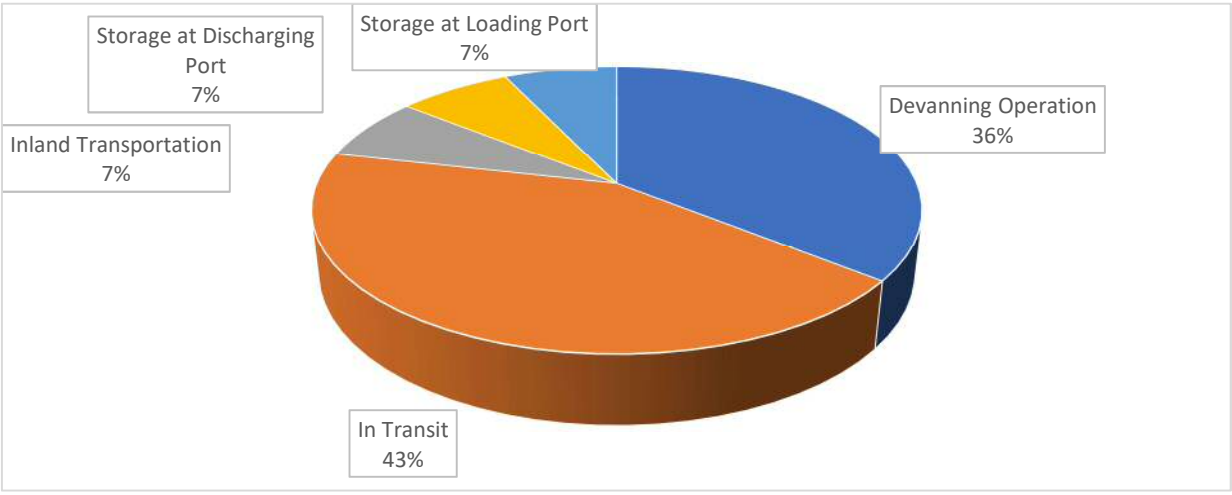

Chart 6-2: Location of damage occurred of Metal Material

[6-3] Cause of damage

Cause of damage	Ratio
Container sustained damage/malfunction	14.29%
Humidity change/Temperature change gap	21.43%
Rough handling	64.29%
Total	100.00%

Table 6-3: Cause of damage of Metal Material

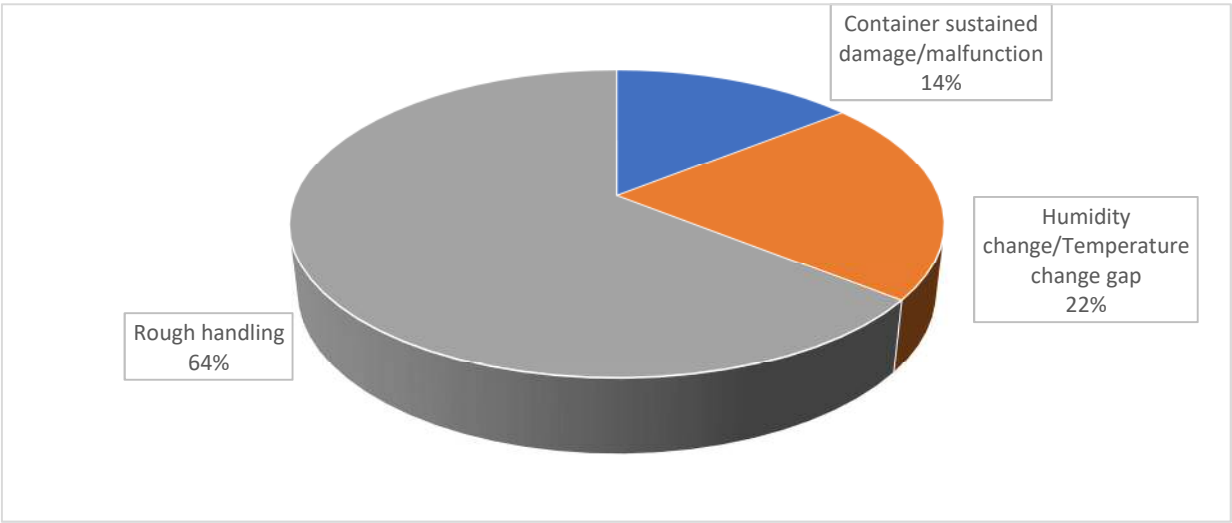

Chart 6-3: Cause of damage of Metal Material

7. Steel

[7-1] Type of damage

Type of Damage	Ratio
Deformed	59.71%
Rusted	25.18%
Stained	2.16%
Torn	3.60%
Wet by Fresh Water	7.19%
Humidity and/or Temperature change gap	1.44%
Burnt	0.72%
Total	100.00%

Table 7-1: Type of damage of Steel cargo

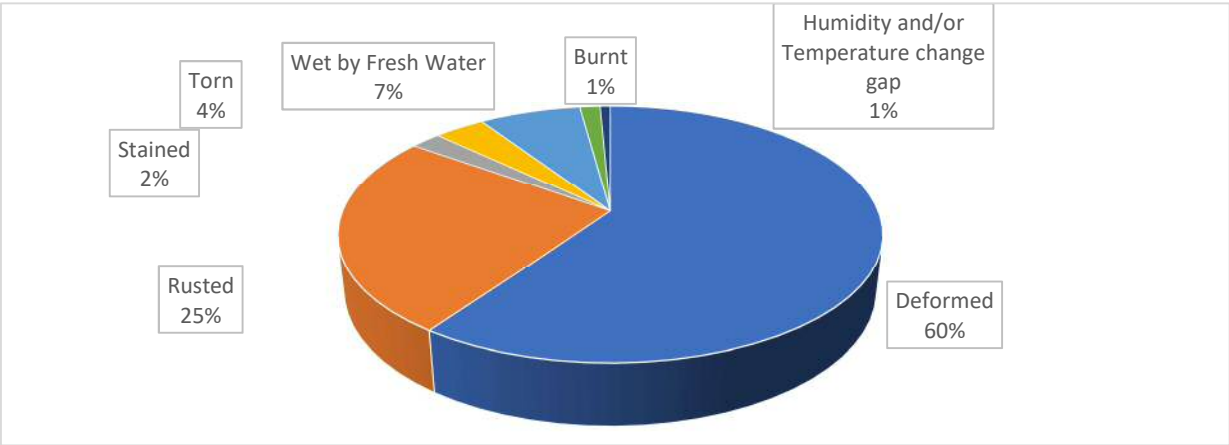

Chart 7-1: Type of damage of Steel cargo

[7-2] Location of damage occurred

Occurred location	Ratio
Devanning Operation	2.88%
In Transit	85.61%
Inland Transportation	0.72%
Loading Operation	1.44%
Storage at Airport	0.72%
Storage at Discharging Port	2.88%
Storage at Loading Port	1.44%
Unloading Operation	0.72%
Vanning Operation	3.60%
Total	100.00%

Table 7-2: Location of damage occurred of Steel cargo

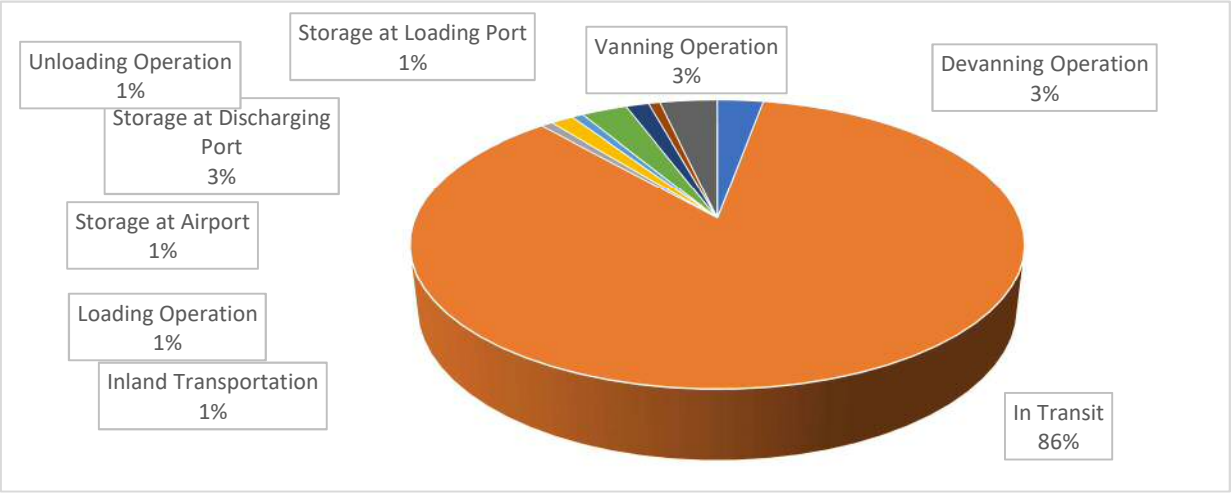

Chart 7-2: Location of damage occurred of Steel cargo

[7-3] Cause of damage

Cause of damage	Ratio
Cargo nature	2.16%
Container sustained damage/malfunction	7.91%
Humidity change/Temperature change gap	9.35%
Impact/Shock during transportation	8.63%
Improper Storage	15.83%
Rough handling	55.40%
Fire	0.72%
Total	100.00%

Table 7-3: Cause of damage of Steel cargo

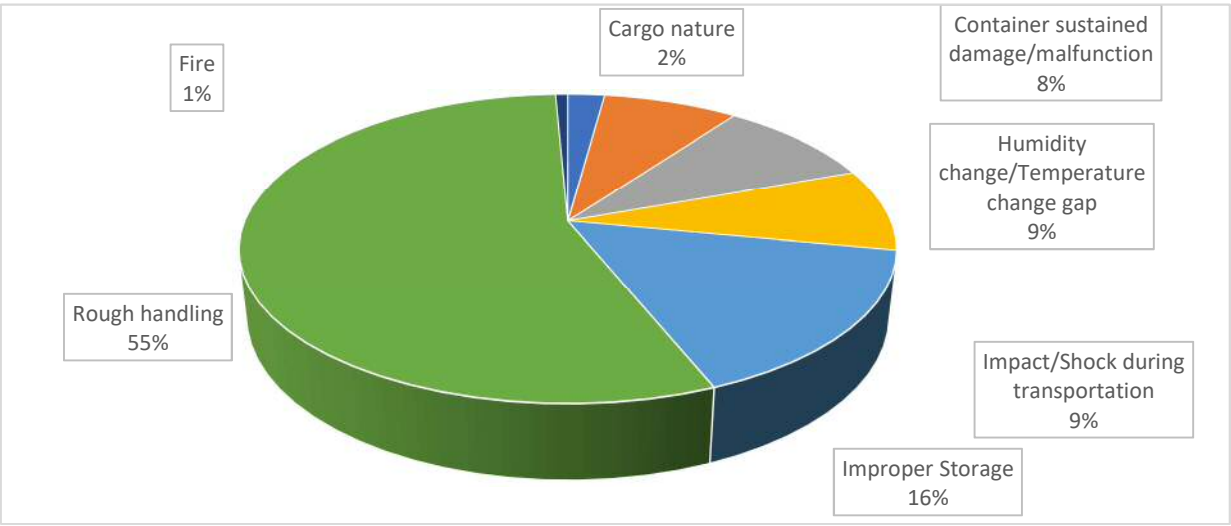

Chart 7-3: Cause of damage of Steel cargo

8. Electric Product

[8-1] Type of damage

Type of Damage	Ratio
Contaminated	1.52%
Deformed	48.48%
Operation Failure/Malfunction	3.03%
Torn	3.03%
Wet by Fresh Water	42.42%
Wet by Sea Water	1.52%
Total	100.00%

Table 8-1: Type of damage of Electric product

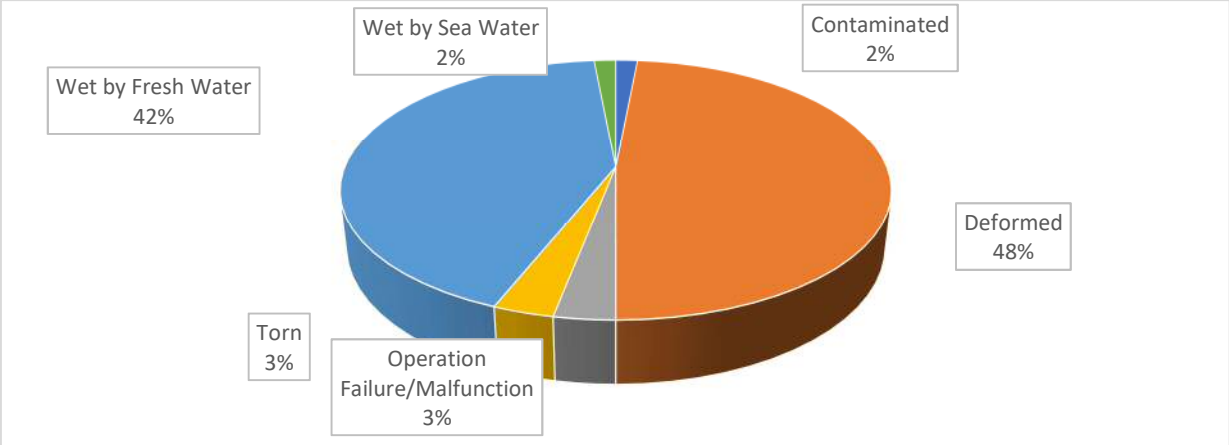

Chart 8-1: Type of damage of Electric product

[8-2] Location of damage occurred

Occurred location	Ratio
Devanning Operation	10.61%
In Transit	22.73%
Inland Transportation	10.61%
Storage at Airport	43.94%
Storage at Loading Port	1.52%
Transshipping	4.55%
Unloading Operation	1.52%
Vanning Operation	3.03%
During Processing	1.52%
Total	100.00%

Table 8-2: Location of damage occurred of Electric product

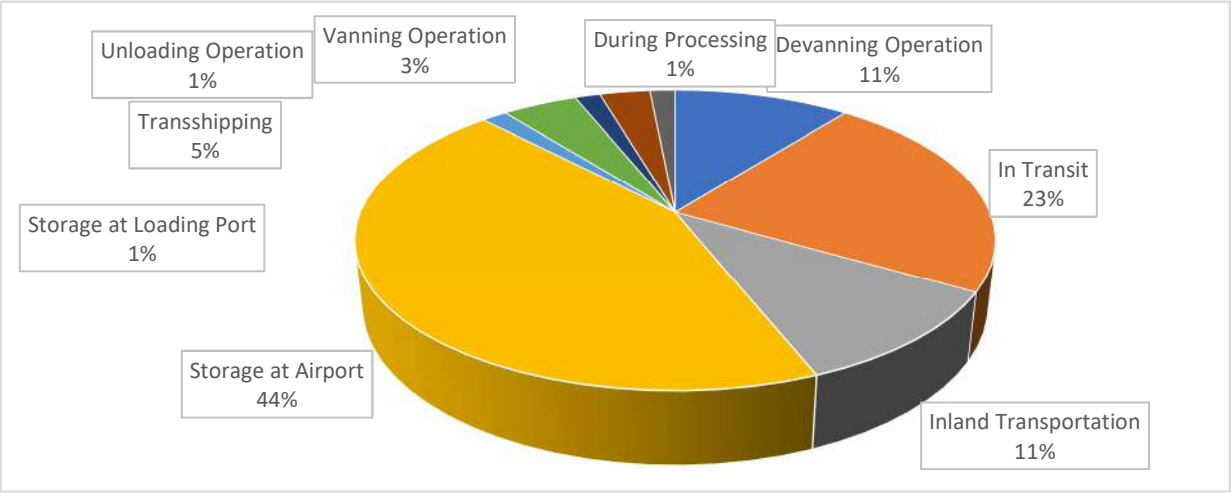

Chart 8-2: Location of damage occurred of Electric product

[8-3] Cause of damage

Cause of damage	Ratio
Container sustained damage/malfunction	10.71%
Humidity change/Temperature change gap	7.14%
Impact/Shock during transportation	8.93%
Improper Stowage/Loading	1.79%
Rough handling	71.43%
Total	100.00%

Table 8-3: Cause of damage of Electric product

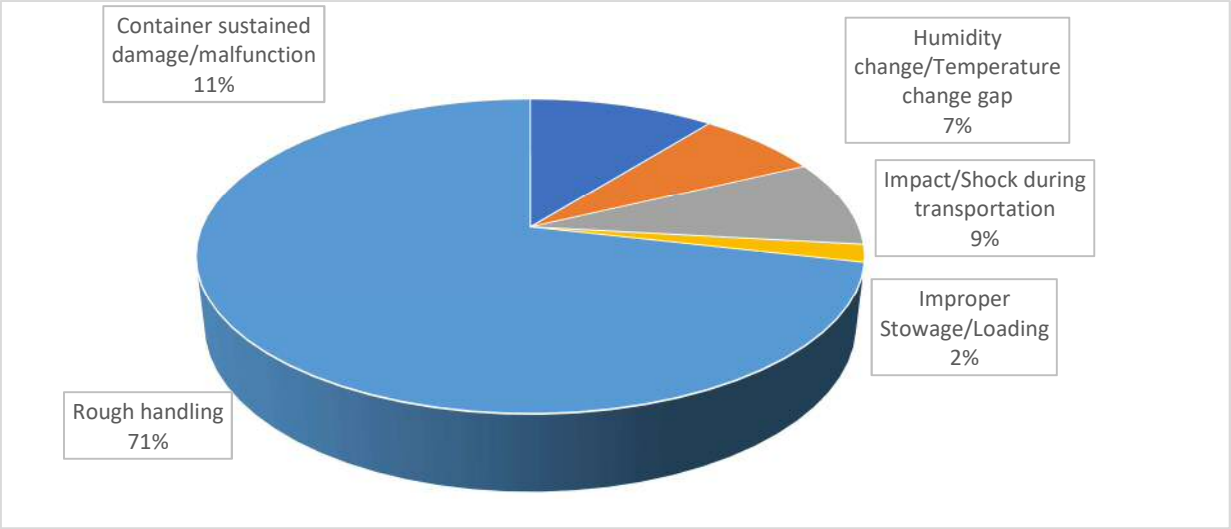

Chart 8-3: Cause of damage of Electric product

9. Agricultural Product

[9-1] Type of damage

Type of Damage	Ratio
Contaminated	79.41%
Deteriorated	5.88%
Quality Degraded	5.88%
Torn	2.94%
Wet by Sea Water	5.88%
Total	100.00%

Table 9-1: Type of damage of Agricultural Product

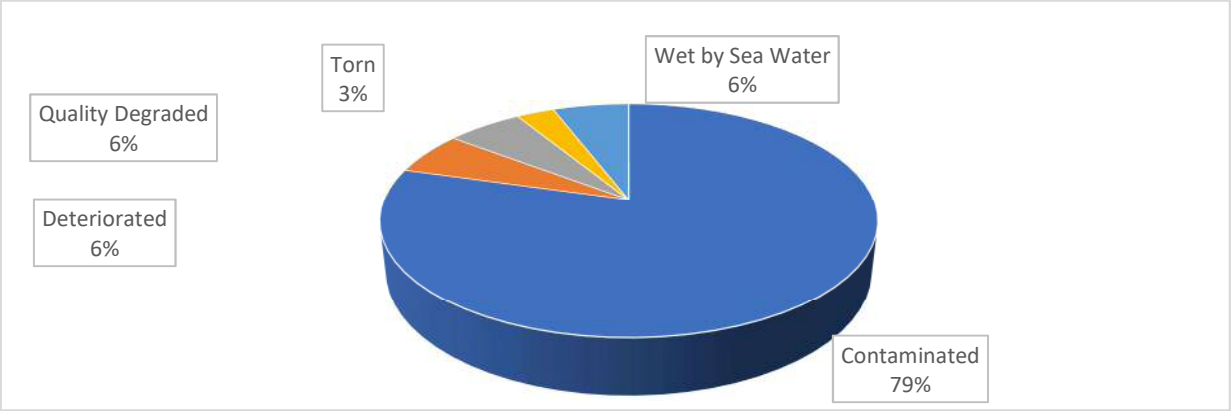

Chart 9-1: Type of damage of Agricultural Product

[9-2] Location of damage occurred

Occurred location	Ratio
In Transit	35.29%
Loading Operation	5.88%
Unloading Operation	58.82%
Total	100.00%

Table 9-2: Location of damage occurred of Agricultural Product

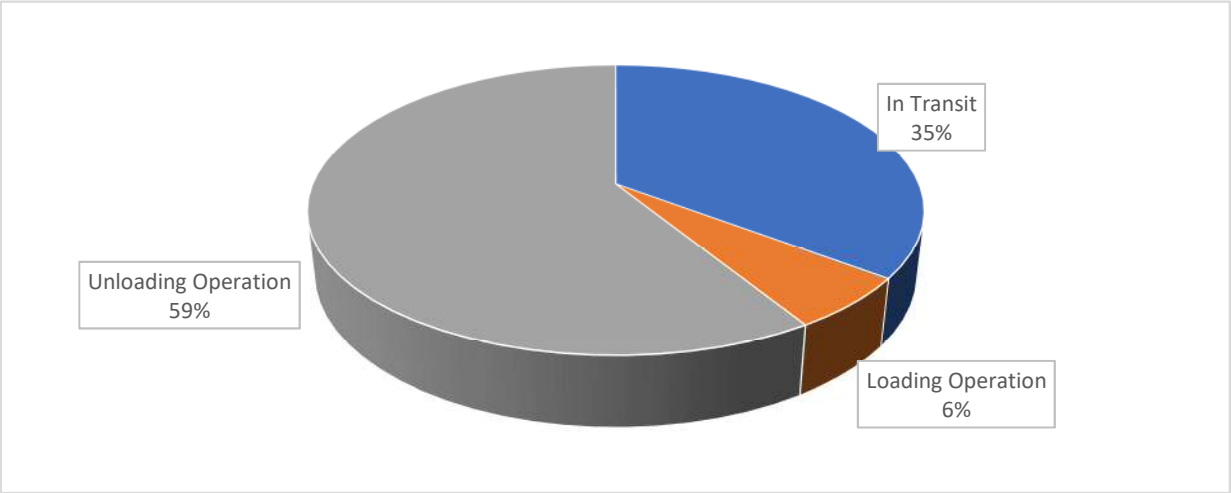

Chart 9-2: Location of damage occurred of Agricultural Product

[9-3] Cause of damage

Cause of damage	Ratio
Cargo nature	11.76%
Defective cargo hold	26.47%
Improper Stowage/Loading	2.94%
Poor cleaning	5.88%
Rough handling	52.94%
Total	100.00%

Table 9-3: Cause of damage of Agricultural Product

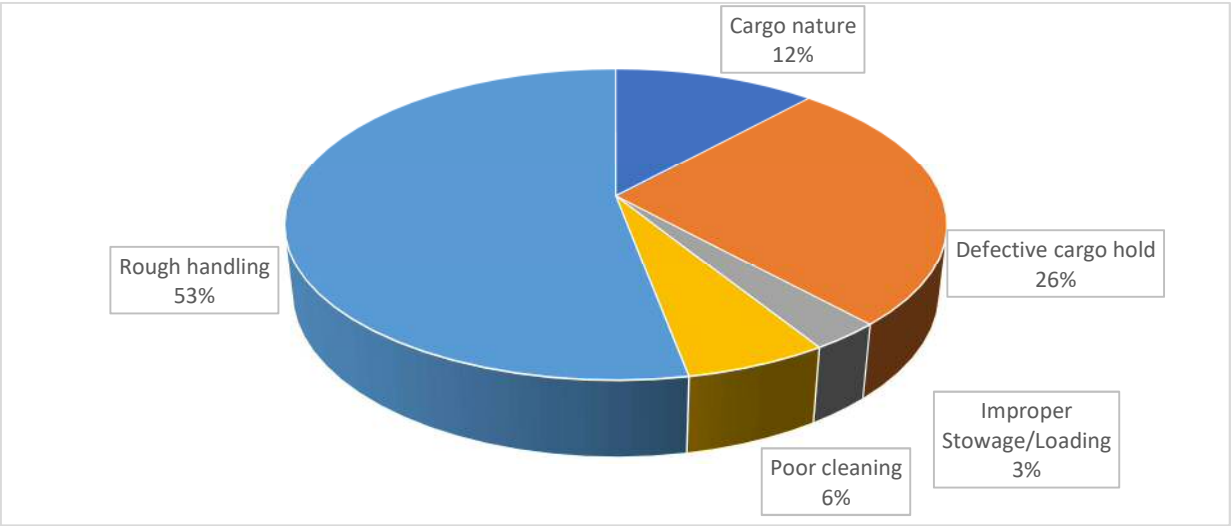

Chart 9-4: Cause of damage of Agricultural Product

10. Medical Item

[10-1] Type of damage

Type of Damage	Ratio
Deformed	33.33%
Molded	16.67%
Torn	16.67%
Wet by Fresh Water	33.33%
Total	100.00%

Table 10-1: Type of damage of Medical Item

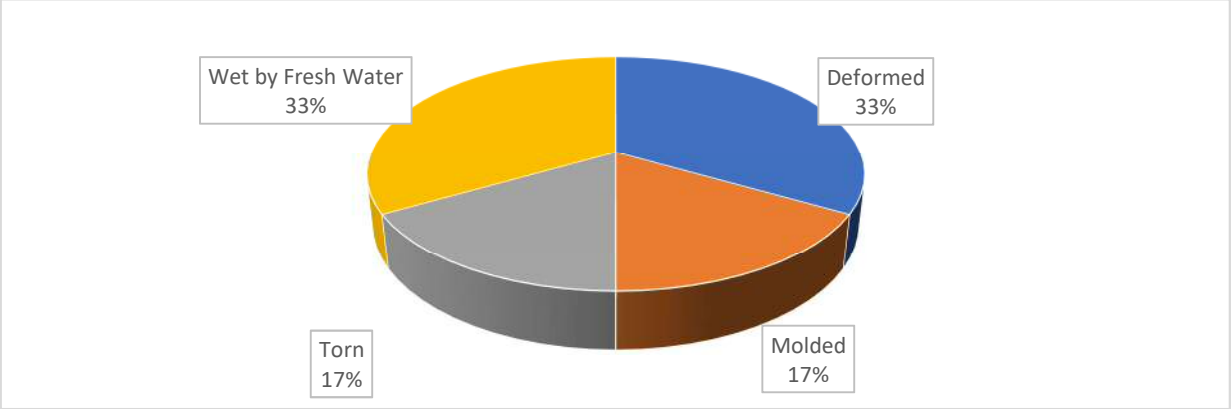

Chart 10-1: Type of damage of Medical Item

[10-2] Location of damage occurred

Occurred location	Ratio
In Transit	50.00%
Storage at Loading Port	16.67%
Vanning Operation	33.33%
Total	100.00%

Table 10-2: Location of damage occurred of Medical Item

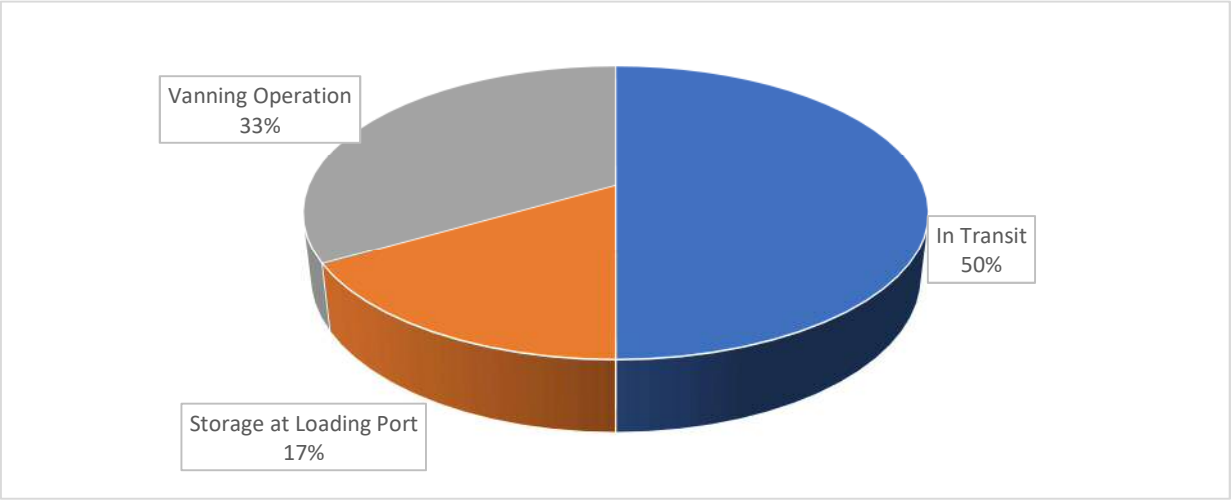

Chart 10-2: Location of damage occurred of Medical Item

[10-3] Cause of damage

Cause of damage	Ratio
Container sustained damage/malfunction	33.33%
Poor cleaning	16.67%
Rough handling	50.00%
Total	100.00%

Table 10-3: Cause of damage of Medical Item

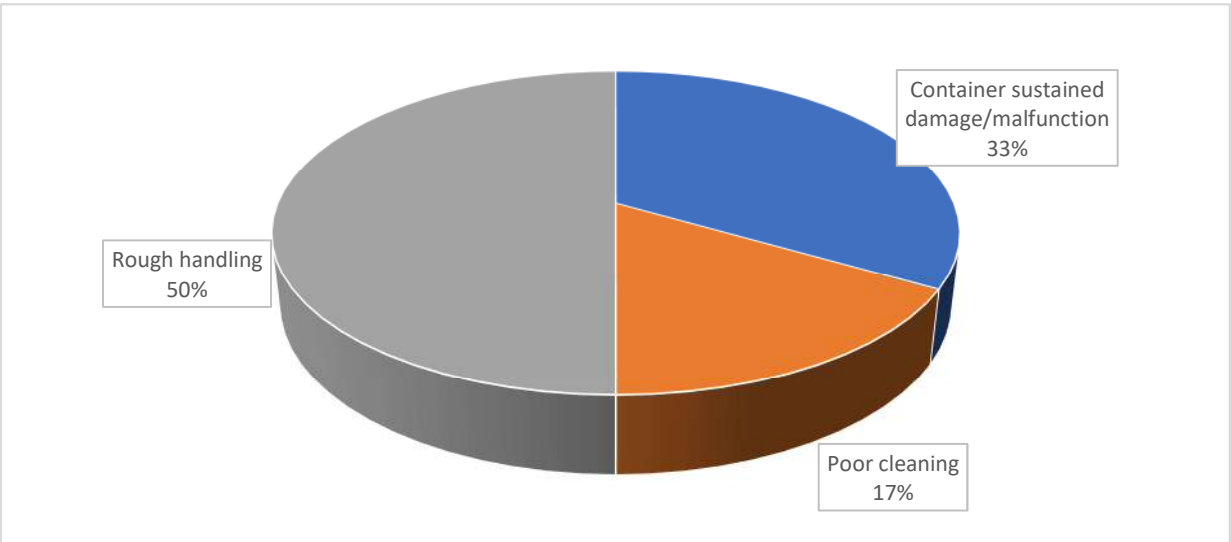

Chart 10-3: Cause of damage of Medical Item

11. Plastic Product

[11-1] Type of damage

Type of Damage	Ratio
Deformed	13.33%
Stained	6.67%
Torn	40.00%
Wet by Fresh Water	40.00%
Total	100.00%

Table 11-1: Type of damage of Plastic product

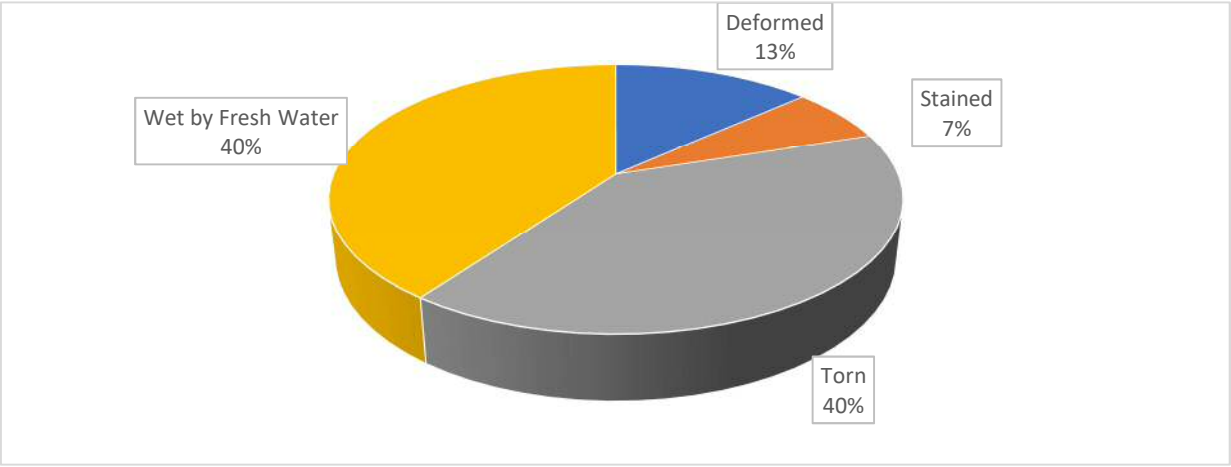

Chart 11-1: Type of damage of Plastic product

[11-2] Location of damage occurred

Occurred location	Ratio
Devanning Operation	6.67%
In Transit	13.33%
Loading Operation	6.67%
Storage at Airport	13.33%
Storage at Discharging Port	26.67%
Unloading Operation	6.67%
Vanning Operation	20.00%
During Processing	6.67%
Total	100.00%

Table 11-2: Location of damage occurred of Plastic product

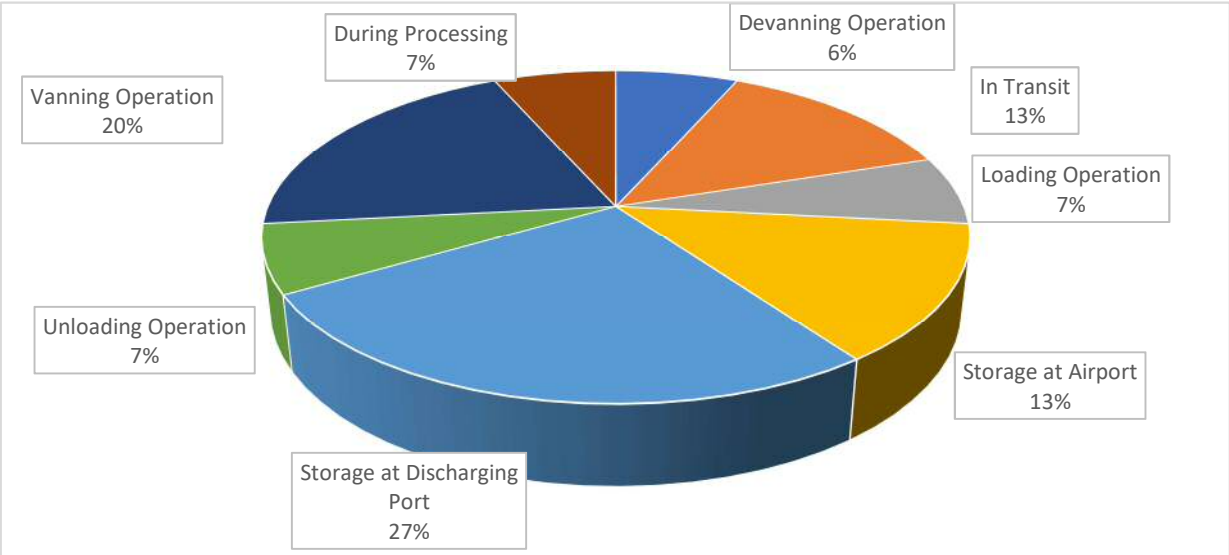

Chart 11-2: Location of damage occurred of Plastic product

[11-3] Cause of damage

Cause of damage	Ratio
Container sustained damage/malfunction	13.33%
Improper Storage	20.00%
Poor cleaning	6.67%
Rough handling	53.33%
Vessel/Container Submerge	6.67%
Total	100.00%

Table 11-3: Cause of damage of Plastic product

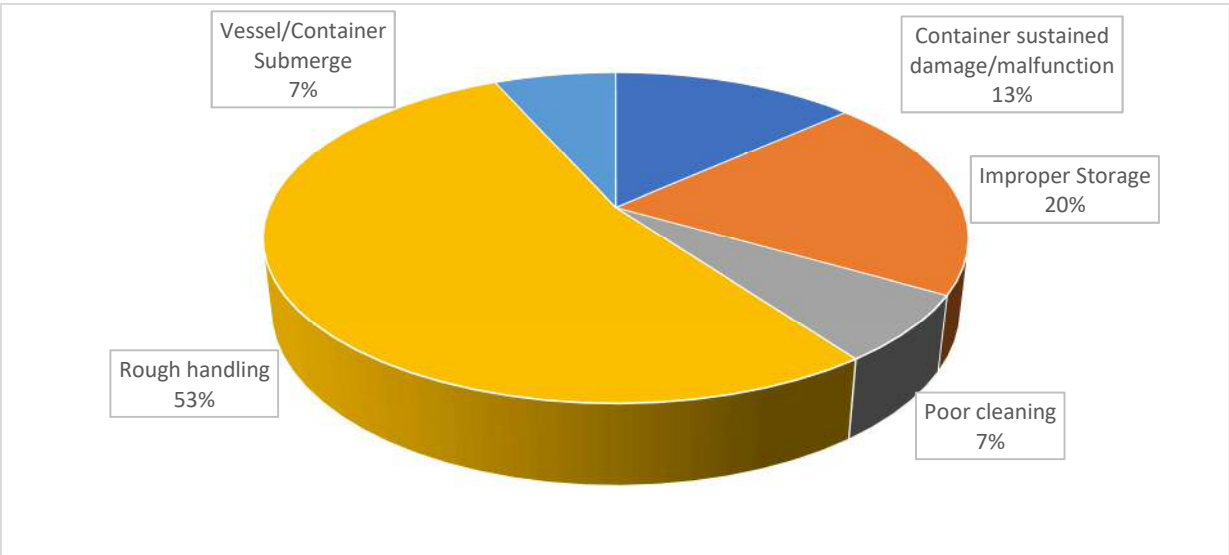

Chart 11-3: Cause of damage of Plastic product