

DRAFT

Civil Society Monitoring Initiative on Industrial Safety

Study on
**Industrial Safety Concerning Chemical and
Hazardous Products Supply Chain: What lessons We
Learned from Chittagong ICD Blast?**

PRESENTATION

Dr Khondaker Golam Moazzem
Research Director
Centre for Policy Dialogue

17 July, 2022



STUDY TEAM



Dr Khondaker Golam Moazzem

Research Director

Centre for Policy Dialogue (CPD)

and

Ms Jebunnesa (Jeba)

Research Intern

Centre for Policy Dialogue (CPD)

CONTENTS



1. Introduction
2. ICDs Handling Hazardous Chemicals
3. Supply Chain of Chemical and Hazardous Products
4. ICD related Issues and Concerns
5. Industrial Safety Framework for Hazardous Chemicals Value Chain

1. INTRODUCTION



- Industrial safety concerns have been exposed **once again** through blasts at BM Container Depot (BMCD), Chittagong on 4 June 2022
 - The blasts caused a loss of **51 lives**, injuries of *over 200 workers* and a loss of *US\$110 million* worth of assets (BICDA, 2022)
 - The accident occurred owing to **mishandling** of hazardous chemicals – hydrogen per oxide (H₂O₂) containerized for export
- The BMCD has a storage capacity of 6300 containers - **65%** of total capacity (4113 containers) were stored during explosion.
 - **867** TEUs of exportable products were stored including RMG, frozen foods and H₂O₂. Besides, **557** container loaded with imported products and 3000 empty containers were there
 - **27** containers have loaded with chemicals, of which **15** were burnt during explosion
- A total of **600 workers** worked in the terminal in two shifts. Besides c&f agents, importers, transporters - about **1300-1500** people were engaged regularly at the depot
 - The blasts caused death of **12 FSCD fire fighters** mainly because of **lack of necessary protection** while handling fire originated from chemical products –FSCD was not informed about storing of chemicals in the depots

1. INTRODUCTION



- The BMCD was **established in 2011** as a joint venture company. However, it was being operated **without proper authorization** and certification of handling hazardous chemicals
 - A number of faults have been exposed which include **lack of necessary approval** for storing chemicals from **DoE and FSCD** (though it took approval from NBR, CPA)
 - **Primary fire training** facility was available but those are not compatible for **chemical related fire**
 - The BMCD **did not organize** fire fighting on a regular basis
- There is a **coordination committee** on ICD related activities
 - The committee include representatives of- Customs House, Custom Bond Commissionerate, NBR, Port Authority, FBCCI, BICDA, Off-Docks Section, BGMEA etc.
 - The meeting **was not organized** on a regular basis
- Chemical related **accidents had occurred intermittently** in 1980s, 1990s and 2000s. However, the number of such accidents has significantly increased in recent years (2014 onward)
 - Majority of these accidents are related **with industrial and commercial** activities
 - Table 1 in the following slide presents the details of the chemical related accidents

1. INTRODUCTION

Major Chemical related Accidents since 1991

	Date and Incident	Date and Incident	Chemicals Involved	Consequences	Short description
1	UFFL, Ghorashal	20 June 1991	CO ₂ /NH ₃	11 fatalities, 50 injured, estimated property loss: US\$ 60 M	Explosion of high-pressure CO ₂ stripper during the startup, releasing CO ₂ and NH ₃
2	Nimtoli fire, Old Dhaka Residential Area	3 June 2010	Combustible chemicals	124 fatalities, 200 injured, property damage	Fire at chemical storage in residential building.
3	Global Heavy Chemicals, Narayongonj	16 October 2011	Cl ₂	100 seriously exposed to toxic gas	pipe failure due to rust and Cl ₂ gas leaks to surrounding area
4	Shela River in Sundarbans	9 December 2014	furnace oil spill	affected the protected mangrove area and threatened trees, plankton, and vast populations of small fish and dolphins	oil tanker carrying 350 000 L of furnace oil collided with cargo vessel and sank in the river, causing oil spread over 350 km ² area in 1 week
5	Smart Metal and Chemical Industries Ltd., Gazipur	24 January 2016	boiler and furnace oil	7 fatalities	fire erupted in tire recycling factory after boiler exploded
6	DAP-1, Anawara, Chittagong	22 August 2016	NH ₃	50 hospitalized, environmental damage	325-ton ammonia release due to drastic explosion of 500 MT ammonia tank
7	Tampaco Foils Ltd. Fire, Gazipur	10 September 2016	NG and chemicals	35 fatalities, 100 hospitalized	fire erupted triggered by two explosions in chemical storage facilities
8	Ideal Textile Mill Charmuktarpur, Mushiganj	20 September 2017	fire at the chemical warehouse	6 fatalities from chemical suffocation	sparks from welding work caused fire at the nearby chemical warehouse, which spread to other parts
9	Chawkbazar, Old Dhaka Residential Area	21 February 2019	combustible chemicals	70 fatalities, property damage	explosion and fire at chemical storage in residential building
10	ASM Chemical Factory, Gazipur	12 February 2022	H ₂ O ₂	16 Injured	fire erupted triggered by explosions in chemical storage facilities
11	BM depot, Sitakundu, Chittagong	June 4, 2022	H ₂ O ₂	51 fatalities and more than 200 hospitalized	Fire at the inland container depot and explosion due to chemical container

1. INTRODUCTION

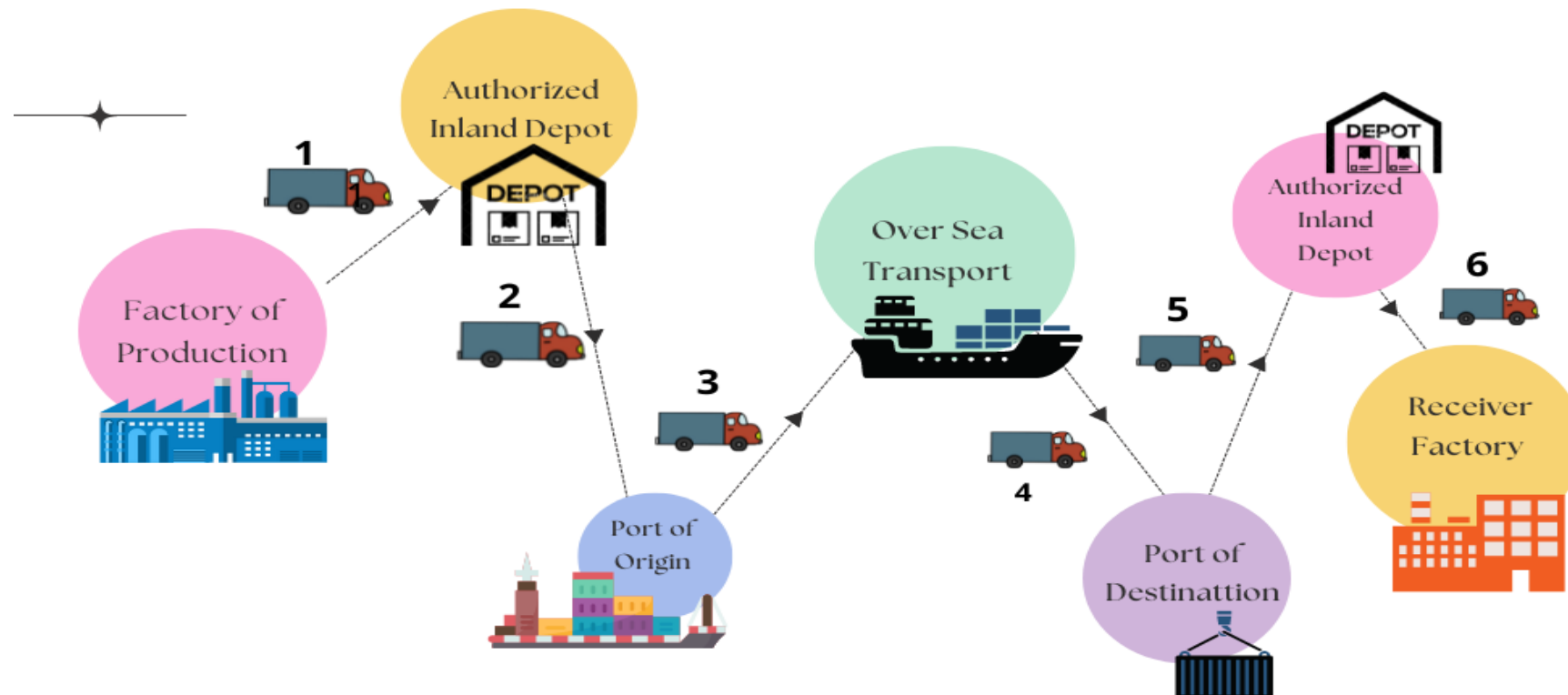
- Industrial safety concerning hazardous chemicals is **not confined to the ICDs only**
 - The safety concerns are **exposed across the value chain** of these chemicals and hazardous products – production, transportation, storage and shipment
 - Examination of safety concerns of such chemicals **need to be focused on every segment** of the value chain– from production, transportation, storage at ICD and shipment
- Safety related concerns of hazardous chemicals will need to be focused from an **industrial safety framework point of view** considering all important segments/steps of the value chain
 - These include compliance with registration, licensing, certification, standardization, following of common set of protocols, compliance guidelines and standard operating procedures for management and operations considering occupational safety and health
- Present **study reviews the level of compliances** maintained in hazardous chemical related value chain particularly related to the ICD related activities, **identify the weaknesses** and put forward a **set of suggestions for** improvement of compliance
 - The **study is conducted** based on the information and data collected from the field – BM Container Depot, Chittagong FSCD, Chittagong Customs, Chittagong Port Authority, Department of Environment Chittagong Office and other sources
 - **Secondary sources** are also used including newspaper, websites of different organisations

2. ICDS HANDLING HAZARDOUS CHEMICALS

- ICD is **part of a network of international trade** of different goods by providing **dry-dock facility** at the port to ease the congestion. The **three main functions** of the ICD include
 - Handling of import containers of selected items
 - Handling of all export containers
 - Storing and handling of empty containers
- Inland container depots (ICDs) are operated privately **as an extension of the port terminal facility**
 - With a view to providing support by arranging **additional logistics** and space facility for export and import
 - Inland container depots inaugurated **its operation in 1996**
- A total of **20 inland container** depots with a storage capacity of **78,700 TEUS** are currently in operation which are mostly located in Chittagong districts and nearby areas
 - Apart from that, Dhaka ICD is located in Kamalapur, Dhaka
- **Figure in the following** slide show how ICDs operate in the international production network

2. ICDS HANDLING HAZARDOUS CHEMICALS

Import-Export Flowchart



2. ICDS HANDLING HAZARDOUS CHEMICALS

- ICDs operate **under the customs rules** on establishment and operation of off-docks issued in 1998 and the policy on private ICDs framed **in 2016**, by the Ministry of Shipping
 - NBR has formulated the **draft Private Inland Container Depot (ICD) and Container Freight Station (CFS) Policy-2021**
- The new policy has been drafted **to ease some of the difficulties** in case of operation of ICDs
 - Mainly to handle inconsistencies between the rules of the customs authorities and the shipping ministry on establishing private ICDs
- The important changes made in the draft policy are as follows:
 - Setting up of inland container depots **mandatory** on at least **15 acres of** land instead of 15 bighas
 - No ICD** can be set up **within 20 kilometers** of a port perimeter to construct off-docks at seaports by private container-depot operators

List of ICDs

Name of the Off-dock	Location
Dhaka ICD	Kamlapur, Dhaka
Esack Brothers Industries Limited	Middle Halishahar, Bandar, Chittagong
Chittagong Container Transportation Co. Ltd.	Middle Halishahar, Bandar (Near Port Stadium), Chittagong
K&T Logistics Ltd.	CEPZ, Chittagong
QNS Container Services Ltd.	Sector 6A, CEPZ, Chittagong
Ocen Container Ltd.	Katghar, North Patenga, Chittagong
Vertex Off-dock Logistic Services Limited	Delwar Bhaban(5th Floor), 104 Agrabad C/A, Chittagong
Shafi Motors Ltd.	Fauzderhat, Sagorika avenue, Chittagong
Iqbal Enterprise	Iqbal Bhaban, 73 agrabad C/A, Chittagong
Summit Allience Port Limited (west)	North Patenga, Kathghar, Chittagong
Incontrade Limited.	Laldiar Char, East Patenga, Chittagong
KDS Logistics Ltd.	Sonaichari, Ghramara
Portlink Logistics Centre Ltd.	Bhatiary, Sitakunda, Chittagong
Golden Containers Limited	North Kattali, City Gate, Pahartali, Chittagong
Summit Allience Port Limited (East)	Katghar, South Patenga, Chittagong
Haji Saber ahmed Timber Co. Ltd	50, kalurghat Heavy Industrial Area. Chittagong
Eastern Logistics Limited	Southland Centre, 5 Agrabad C/A, Chittagong
BM Container Depot Limited	Keshobpur, sitakunda, Chittagong
Nemsan Container Ltd.	Uttar sonaichari, Kumira, Sitakundo, Chittagong

2. ICDS HANDLING HAZARDOUS CHEMICALS

- The off-docks will **not be allowed** to employ workers **below the age of 18** and will be required to follow the **Labour Act 2006** (amended)
 - **Only FCL import containers** would be allowed to use the off-docks
 - The customs authorities would not allow products imported through **LCL containers** to use the depots
- Keeping a timeframe of up to **30 days** for customs officials **to dispose investment** applications
 - **Approval** for product handling would depend on the performance of the ICDs **after audit**
- The Customs Port Authority had proposed that the NBR should allow the **ICDs to handle an additional 100** import products
 - At present 38 import products are allowed at the ICDs

2. ICDS HANDLING HAZARDOUS CHEMICALS

- ICDs are allowed to handle **100% of export** products and 38 imported products.
 - Export stage covers **all kinds of hazardous chemicals**
 - **Import stage covers** few hazardous chemicals including sodium sulphate, fertilizer, Soda ash, carbonblack
- **ICD covers a part of total products** imported to/exported from Bangladesh
 - During FY2021, it handled **51.3% of total export** and **18.9% of total import**
 - Most importantly handling of hazardous chemicals at import stage is happened **outside the ICDs**
- **Handling of safety** concerns is equally important in places **outside ICDs**

Imported products allowed at ICDs

- | | |
|--|---|
| <ul style="list-style-type: none"> • Rice • Wheat • Mustard seed • Wastepaper • Chickpeas (chola) • Pulse (dal) • Raw cotton • Scrap • Animal fodder • Soyabean meal/extraction (2304.00.00); • DDGS (2308.00.00); • Rice bran (2302.40.00); • Corn gluten meal (2302.10.00); • Rape seed extraction (2306.49.00); • Palm kernels (2306.60.00); • Maize (1005.90.90); • Soya beans (1201.90.90) • Hard coke • Carbonblack • Marble chips • Ball clay (in bulk) | <ul style="list-style-type: none"> • Onion • Ginger • Garlic (perishable goods carried in normal dry container) • Fertilizer • Soda ash • PVC resin • Staple fibre • Containerizedsquare/round log • Dates • Sugar • Bitumen • Empty container for beverages • Marble stone • Sodium sulphate • Wood pulp • Global salt. |
|--|---|

2. ICDS HANDLING HAZARDOUS CHEMICALS

- A total of 20 ICDS are in operation of which data of **17 ICDS which** are located in Chittagong and nearby areas are reported.
 - These ICDS provide facility at import and export stage in the form of storing of empty containers (**20, 40 & 45 feet**) and loaded containers (20, 40 and 45 feet)
- During **2021**, these ICDS provide support of **961,228** boxes which is equivalent to **1,562,015 TEUs**
 - Out of these, **59.6%** is related with export stage (**Depot to CPA**) and the rest **39.4%** is related with import stage (**CPA to depot**)

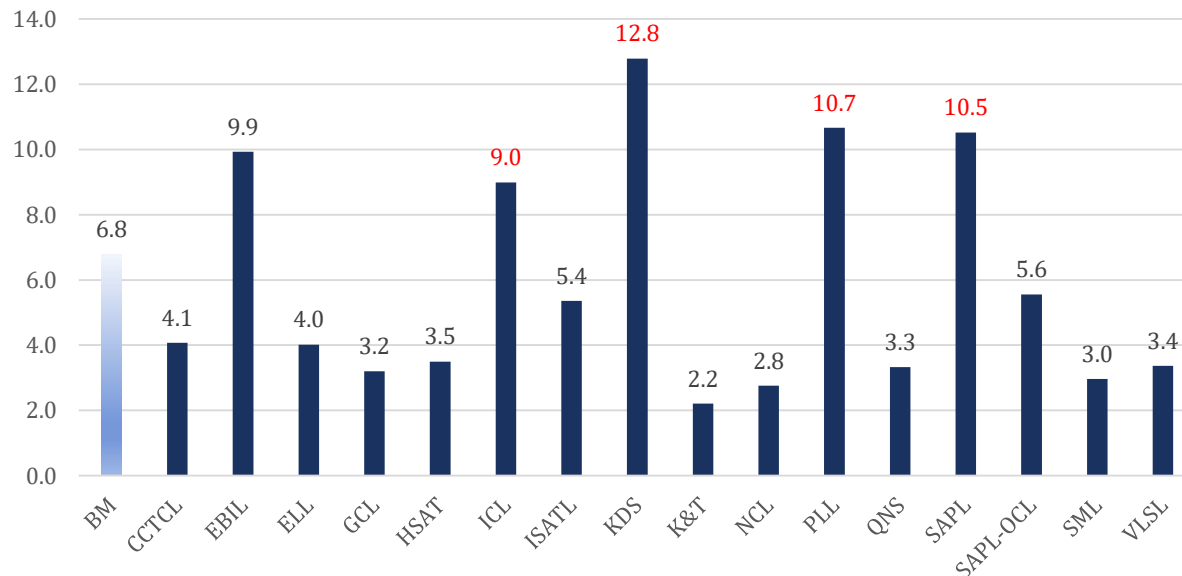
Handling of Containers by ICDS, 2021

ICDS	Off-Docks	CPA TO DEPOT				DEPOT TO CPA				Total	
		Empty		Import		Empty		Export		Box	TEUS
		Box	TEUS	Box	TEUS	Box	TEUS	Box	TEUS		
1	BM	12457	22558	11865	21221	3946	5780	31638	56368	59906	105927
2	CCTCL	7455	10497	8542	9228	34536	41393	2257	2484	52790	63602
3	EBIL	21327	36540	19677	30624	15660	20573	39214	67396	95878	155133
4	ELL	4808	8726	10081	11634	26525	32037	6729	10380	48143	62777
5	GCL	8416	13807	3239	4582	3211	3888	17335	27629	32201	49906
6	HSAT	17349	24381	2235	2995	19284	26714	331	544	39199	54634
7	ICL	15437	26358	19104	32096	12996	17042	35848	64973	83385	140469
8	ISATL	11709	21637	5561	8240	3125	4370	27182	49518	47577	83765
9	KDS	21124	37866	26365	43751	12098	14718	56572	103391	116159	199726
10	K&T	1269	1864	4643	7068	4052	4761	12375	20732	22339	34425
11	NCL	4564	8350	5486	8629	6152	7000	10674	19080	26876	43059
12	PLL	6991	11676	40549	72199	13556	17573	36942	65163	98038	166611
13	QNS	5317	8068	7998	10331	10400	12340	13248	21264	36963	52003
14	SAPL	21214	39494	14221	24127	4072	5536	51696	95192	91203	164349
15	SAPL-OCL	17850	30718	2163	3399	2125	2871	30498	49772	52636	86760
16	SML	4425	7373	4836	8650	983	1390	16705	28932	26949	46345
17	VLSL	8355	15831	3849	5736	4254	4863	14528	26094	30986	52524
	TOTAL	190067	325744	190414	304510	176975	222849	403772	708912	961228	1562015

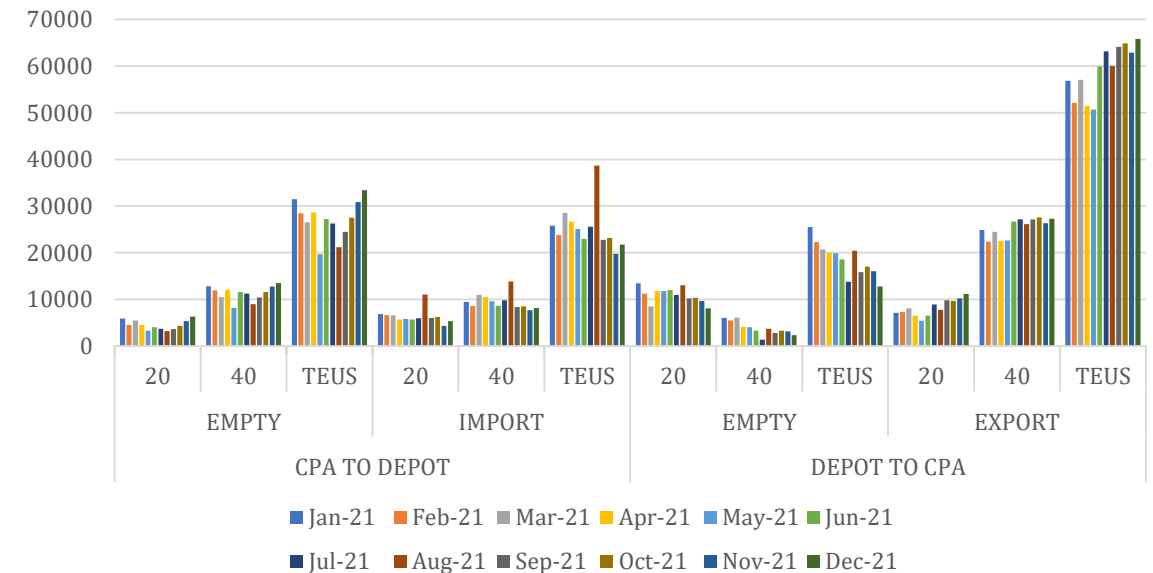
2. ICDS HANDLING HAZARDOUS CHEMICALS

- Among the 17 ICDS, the largest is **KDS** which handles **12.8%** of total containers (in terms of TEUs)
 - This is followed by PLL (10.7%) and SAPL (10.5%) and ICL (9.0%)
 - **BMCD** handles **6.8%** of total containers
- During 2021, use of containers **has increased over time** in case of export accompanied by decline in empty containers perhaps due to significant rise in export
 - In case of import, use of empty containers has increased; similarly, number of **loaded containers has declined**

ICDS: Share in Total Capacity (TEUs)



Container Movement at ICDS



2. ICDS HANDLING HAZARDOUS CHEMICALS



- According to different international accord, a total of **15 chemicals** are considered as hazardous. These include
 - (a) Ammonium nitrate; (b) Nitromethane; (c) Sodium Nitrate; (d) Potassium Nitrate; (e) Sodium Chlorate; (f) Potassium chlorate; (g) Potassium Perchlorate; (h) Acetone; (i) Hydrogen Peroxide; (j) Nitric Acid; (k) Urea; (l) Aluminum Powder; (m) Aluminum Flakes; (n) Calcium Ammonium Nitrate; (o) Acetic anhydride
- Bangladesh import **almost all of the chemicals**. However, amount of **import varies widely**.
 - Major **imported hazardous chemicals** include urea, acetic anhydride, aluminum powder, acetone and potassium perchlorate
- It is important to note that import of some of the **chemicals has been increasing**
 - **These include** urea, aluminum powder, potassium nitrate and acetic anhydride
- Given the large volume of import every year, safety measures related to hazardous chemicals are important **at import stage**.
 - Since majority of hazardous chemicals are handled **at the port- safety measures of CPA** needs special attention

2. ICDS HANDLING HAZARDOUS CHEMICALS

Bangladesh's Import of Hazardous Chemicals: 2010-2021 ('000 US\$)

Imported Good	Imported value in 2010	Imported value in 2011	Imported value in 2012	Imported value in 2013	Imported value in 2014	Imported value in 2015	Imported value in 2016	Imported value in 2017	Imported value in 2018	Imported value in 2019	Imported value in 2020	Imported value in 2021
Ammonium nitrate	256	181	130	118	142	219	260	147	416	298	228	273
Nitromethene	27	2	53	0	15	31	0	1	0	544	1	3
Sodium Nitrate	94	209	102	197	244	169	89	204	171	249	225	152
Potassium Nitrate	40	48	320	234	158	185	253	272	148	91	95	307
Sodium Chlorate	20	30	19	35	43	7	34	60	39	29	24	6
Potassium chlorate	877	1197	857	410	729	1137	1455	1716	1274	672	618	189
Potassium Perchlorate	0	1	1648	1453	1970	555	60	1009	685	981	237	1262
Acetone	1072	1361	1087	1212	1080	1049	1031	1068	1332	1080	1403	1572
Hydrogen Peroxide	1994	2880	460	707	232	260	376	382	1842	606	661	274
Nitric Acid	284	465	392	347	364	429	481	357	362	634	373	793
Urea	295066	189612	179697	185200	251598	165253	149596	80895	219297	225331	149376	302968
Aluminum Powder	0	1313	2552	1028	380	1233	2607	2579	223	757	1094	2251
Aluminum Flakes	0	1	7	0	6	0	77	0	5	14	7	3
Calcium Ammonium Nitrate	0	0	0	0	0	0	0	9	6	0	7	8
Acetic anhydride	1018	1617	1241	2815	1167	2058	1543	1810	2857	2137	2465	4203

Source: International Trade Centre

2. ICDS HANDLING HAZARDOUS CHEMICALS

- Bangladesh's export of hazardous chemicals is confined **mainly in two items** - hydrogen peroxide (284700) and Urea (310210)
 - Over the years export of hydrogen per oxide has been increasing – from US\$0.27 million in 2010 to US\$16.1 million
- Since a **large part of export products** are handled **at the port**, safety measures related to chemicals are important at the port

Bangladesh's Export of Hazardous Chemicals: 2010-2021 ('000 US\$)

Exported Good	HS code	Exported value in 2010	Exported value in 2011	Exported value in 2012	Exported value in 2013	Exported value in 2014	Exported value in 2015	Exported value in 2016	Exported value in 2017	Exported value in 2018	Exported value in 2019	Exported value in 2020	Exported value in 2021
Ammonium Nitrate	310230	0	0	0	0	0	0	0	1	0	0	0	16
Sodium Chlorate	282911	0	0	0	0	0	0	0	0	0	0	13	0
Hydrogen Peroxide	284700	266	1224	3114	4589	6961	6981	7627	8157	11402	16520	15249	16110
Urea	310210	28512	39159	70971	0	0	6005	6095	0	0	0	0	26108

Source: International Trade Centre

2. ICDS HANDLING HAZARDOUS CHEMICALS

- ICDS **need to take certificates, licenses**, registration and no-objection from different public and private authorities
 - **Chittagong Customs** is in overall charge of the operation of the ICDs
 - Other **authorities with whom** it needs permission include
 - CPA, FSCD, Boiler authority, DoE, DIFE, DoL, Bangladesh Navy, District commissioner, NSI, CID, Police
 - Associations such as BICDA, BGMEA, BKMEA, CCCI, FBCCI
 - International accords IMDG, ISPS, IMO
- Most of the certificates, **licenses are renewable** – NBR, FSCD, DoE etc.
- **Handling of hazardous chemicals require special permission** from different authorities
 - Majority of authorities do **not have specific licensing requirements** for handling hazardous chemicals except Bangladesh Navy and Bangladesh Customs

2. ICDS HANDLING HAZARDOUS CHEMICALS

License and Certificate Requirements for ICDS

License name	Responsible Authority	Requirement for the license/certificate	Law/code details
A license that is provided after compliance with various conditions by the National Board of Revenue and Shipping ministry directives.	National Board of Revenue (NBR)	The NBR issues the ICD license to a private company after an eight-step process that includes inspection in several stages as well as permissions from the port authority and the shipping ministry.	Private Inland Container Depot (ICD) and Container Freight Station (CFS) Policy-2021
A Certificate that ensures the following of the International Ship and Port Facility Security Code (ISPS).	Port authority	A private inland container depot (ICD), known as off-dock, may be selected to handle the dangerous goods and the selected ICD will construct the required establishments, including a shed, as per the IMDG Code monitored by the port authority.	Since 2004, the IMO has made it mandatory to implement the ISPS code for security in ports around the world including the Chattogram Port.
Adhering to the International Maritime Dangerous Goods (IMDG) Code.	Bangladesh Navy	To receive approval/NOC for Dangerous Goods from Bangladesh Navy , importers will have to furnish the following documents in original: <ol style="list-style-type: none"> 1. Bill of Lading, invoice, packing list, 2. Authorization certificate from the CCI&E 3. Import permission from the Department of Explosives 4. Storage and user license from DC. 	

License name	Responsible Authority	Requirement for the license/certificate	Law/code details
A clearance from the “Environment department”	Department of Environment	<ol style="list-style-type: none"> 1. No Objection Certificate (NOC) from Local Authority (City Corporation) 2. Project Profile Containing Project Details 3. Layout Plan 4. Cadastral/ Cadaster Map with Daag & Khotiyan 5. Board of Investment (BOI) Registration 6. Rent Agreement or Document of Land Ownership in case It Is not a Rented Place 7. Treasury Challan for the Payment of Fee 	Bangladesh Environment Conservation Act, 1995
A clearance from the “Fire service and Civil defense” and Fire and disaster insurance.	Department of Fire service and Civil defense	<ol style="list-style-type: none"> 1. Assessment form 2. Filled-in prescribed application form/online application form 3. Land Deed 4. Certification to the effect that there is no case 5. Trade license 6. No Objection Certificate (NOC) Safety plan (7 floors and above) 7. Building design by an engineering firm 8. Memorandum of Association in case of limited companies 9. Deed of agreements 	Fire Prevention and Fighting Act, 2003

2. ICDS HANDLING HAZARDOUS CHEMICALS

License name	Responsible Authority	Requirement for the license/certificate	Law/code details
A Clearances Certificate from the Board of Investment	Board of Investment		The Investment Board Act, 1989
Clearances Certificate/Building Permit from the Divisional Development Authority	Divisional Development Authority	<ol style="list-style-type: none"> 1. Construction design approval letter 2. Photocopy of approved design 	BIDA Act,2016
Compliance with labor law	DIFE and DoL	<ol style="list-style-type: none"> 1. Trade license copy 2. Rent agreements/ copy of the land rejection 3. Copy of NID of owner/MD/CEO/director 4. Power demand note 5. Memorandum of article 6. Copy of approved factory layout plan 7. Local authority (City Corporation) approved 8. building design copy of the factory & letter of 9. approval and layout plan 10. Main copy of treasury challan 11. List of employees/workers of the factory 12. Fire license copy 	The Bangladesh labor Act 2006

2. ICDS HANDLING HAZARDOUS CHEMICALS

Process for Getting Approval of ICDs: Responsible Authorities

Stages	Relevant Authority
To declare the site of the proposed off-dock as a Customs Bonded Area, apply to the concerned Custom House / Commissionerate in the prescribed format along with the required documents.	Corresponding Custom House/ Commissionerate
After receiving the application, the concerned commissioner will inspect the site and declare the proposed off-dock site as a custom bonded area and send a report with opinion to the National Board of Revenue for giving initial permission/consent for setting up off-dock.	National Board of Revenue (NBR)
The National Board of Revenue, if deemed appropriate , would declare the proposed site as a Bonded Area : and will give preliminary permission/consent to undertake the activities of setting up off-dock.	
After getting the approval/consent of the board, the applicant/entrepreneur must get permission from the port authority and the Ministry of Shipping .	Port authority Ministry of Shipping
After the approval of the Board, the concerned Commissioner shall issue the bond license to the applicant/entrepreneur , determine the terms and conditions of the bond license, and allow the installation of container and cargo handling equipment as per Appendix-C	
Institutional authorities will apply to the concerned commissioner for final approval for setting up of off-dock after construction of infrastructure and installation of container and cargo handling equipment. The committee constituted as per Appendix B will then inspect the site of the proposed off-dock and send the report with the opinion of the concerned commissioner to the National Board of Revenue.	
The Board shall, after satisfactory consideration, give final approval/ consent to the installation of Off-dock . The board will only allow empty container handling and export operations at an early stage . Subsequent satisfactory performance After at least 01 years has elapsed , if the company applies, permission can be granted to unload the imported goods, but in this case the approval of the National Board of Revenue has to be obtained.	
Violation of any of the conditions of the license in the ICD/CFS license, the concerned Commissioner/Board may temporarily suspend the activities of the ICD/CFS license . Also, if the license needs to be revoked, the legal license can be revoked subject to the permission of the board.	

2. ICDS HANDLING HAZARDOUS CHEMICALS



Container Manual for Chittagong Port & Dhaka ICD for Handling Hazardous Chemicals

- According to Container Manual for Chittagong Port & Dhaka ICD. **Dangerous cargos are classified in 9 category** and subcategories. Section related to for these cargos include-
 - **Class 1:** Explosives **Class 2:** Gases **Class 3:** Flammable Liquids **Class 4:** Flammable solids or substances
 - **Class 5:** Oxidizing substances and organic peroxides **Class 6:** Toxic substances
 - **Class 7:** Radioactive material **Class 8:** Corrosive substances
 - **Class 9:** Miscellaneous dangerous substances and articles and environmentally hazardous substances
- **Procedure for handling and storage** of hazardous and special cargo -Dangerous Cargo Definition and Shippers Duty
- **Failure to comply** with such regulations, particularly in **documentation, declaration and stowage** can lead to severe **penalties**.

2. ICDS HANDLING HAZARDOUS CHEMICALS

Container Manual for Chittagong Port & Dhaka ICD

- Dangerous goods are divided into 9 class and subclasses following the International Maritime Organization (IMO)
- Special Precautions and Information: There are 14 instructions under this subsection. Some of them are-
 - IMDG, Class-1 cargo carrying containers shall be allowed discharging/shipment at daytime only with prior permission of competent Authority for direct delivery/shipment only.
 - IMDG class 4.1 and Class-7 cargo carrying container should only be accepted for immediate removal from the port
 - IMDG class 3.1-3.3, 4.2-4.3, 5.1 cargo carrying container may be allowed in port embarked yard/CFs for 7 days only. (didn't mention how in these 7 days the container should be handled)
 - IMDG classified cargo/containers/stored/lying in the port premises shall remain at the entire risk, responsibility, and expenses of the importer/exporter
- Instructions regarding how the container should be labeled appropriately according to the IMDG code, colors, and symbol wise is described in this subsection.
 - General requirements for segregation between various classes of dangerous goods and segregation table
 - Since the properties of substances or articles within each class may vary greatly, the details segregation of each class and subclass is given in a table in this section.

3. SUPPLY CHAIN OF CHEMICALS AND HAZARDOUS PRODUCTS



- Supply chain of hazardous chemicals is linked to production, transportation and shipment of these goods.
- **Production of chemicals:** According to the SMI 2017,
 - A total of **251 enterprises manufactured** chemicals which are mostly micro (86), small (103) and medium (35) categories
 - These enterprises employed about **33,660 workers** mainly male workers (86.4%)
 - Apart from the chemical factories, **149 enterprises** are found which produce pharmaceutical products
- A total of **four hydrogen peroxide enterprises/factories** are identified. These include
 - HP Chemicals Industries Ltd; ASM Chemical Industries Ltd; TK Group Industries Ltd. (Samuda) and Tasnim Chemical Industries Ltd.
- These enterprises produced **two types of hydrogen per oxide** (50% and 35%)
 - During 2016, these enterprises produced 218 m ton of hydrogen per oxide.

Industrial Enterprises Produce Chemicals

Issue	Chemicals and Chemical Products	Pharmaceuticals, Medicinal chemical and Botanical products
No. of Establishments	251	149
Micro	86	11
Small	103	81
Medium	35	31
Large	27	26
Total Person Engaged	33663	49458
Male	29082	37264
Female	4581	12194

Source: SMI Report-2018

Industrial Enterprises Produce H2O2

Product Name	ASM Chemicals	HP Chemicals	Tasnim Chemical	Samuda Chemicals	Total	Current Demand
H2O2 (50.00%)	60 MT		60 MT	70MT	190 MT	350
H2O2 (35.00%)		28 MT			28 MT	100

Source: SMI Report-2018

3. SUPPLY CHAIN OF CHEMICALS AND HAZARDOUS PRODUCTS



Laws, Acts, Rules related with Chemicals and Hazardous Products Supply Chain

- The supply chain of chemicals and hazardous materials **are guided by different laws, acts and rules**
 - These related with production, transportation, storage and shipment
- The international trade of these chemicals is also **guided by international guidelines** and compliances

Act	Objectives	Implementing Authority
<ul style="list-style-type: none"> The Import and Export (Control) Act, 1950; The Import Policy Order, 2015-2018; Export Policy, 2015-2018 	<ul style="list-style-type: none"> To control importing and exporting goods including chemicals 	Office of the Chief Controller of Imports & Exports, Ministry of Commerce
<ul style="list-style-type: none"> Dangerous Cargo Act, 1953 	<ul style="list-style-type: none"> To provide for the safety of the port, for handling dangerous goods. 	Bangladesh Navy, Port Authority
<ul style="list-style-type: none"> The Explosive Act 1884; The Explosive Substance Act, 1908 (modified upto 1983) 	<ul style="list-style-type: none"> To regulate the manufacture, possession, use, sale, transport and importation of explosives 	Department of Explosives, Ministry of Power, Energy and Mineral Resource
<ul style="list-style-type: none"> Ammonium Nitrate Rules, 2018 	<ul style="list-style-type: none"> To regulate the manufacture, modification, possession, packaging, use, sale, transport, loading, unloading and importation of ammonium nitrate 	Department of Explosives, Ministry of Power, Energy and Mineral Resource
<ul style="list-style-type: none"> Petroleum Act, 2016 	<ul style="list-style-type: none"> To regulate the manufacture, possession, use, sale, transport and importation of petroleum products 	Department of Explosives, Ministry of Power, Energy and Mineral Resource

3. SUPPLY CHAIN OF CHEMICALS AND HAZARDOUS PRODUCTS

Laws, Acts, Rules related with Chemicals and Hazardous Products Supply Chain

Storage/Industrial Facilities		
Act	Objectives	Implementing Authority
The Environmental Conservation Act(ECA), 1995; Environmental Conservation Rules(ECR), 1997; National 3-R strategy, 2010	To provide standards (Green, Orange-A, Orange-B, Red category) for industrial units.	Department of Environment
Bangladesh National Building Code (BNBC), 2015	To provide building guidelines including for industrial and hazardous indoor facilities	Ministry of Housing & Public Works
LPG storage, Bottling, Transportation and Dispensing Codes and Standards, 2016	To establish minimum requirements for storing, bottling, transporting, and dispensing LPG	Bangladesh Energy Regulatory Commission (BERC)
Petroleum Rules, 2018	Petroleum product storage design layout, transportation, hazardous area classification	Departments of Explosives, Ministry of Power, Energy and Mineral Resources

Transportation		
Act	Objectives	Implementing Authority
Road Transport Act, 2018	Precautions for transport of flammable substances and Penalty for violation	Ministry of Road Transport and Bridges

Safety/Disaster Management		
Act	Objectives	Implementing Authority
Factories Act,1965; The Factory Rules, 1979	To provide rules for health and Hygiene and Safety of workers	Department of Inspection for Factories and Establishments, Ministry of Labour and Employment
Bangladesh Labor Law, 2006 (Amended in 2013)	To ensure occupational safety through safety committee (provides chemical safety manual)	Department of Inspection for Factories and Establishments, Ministry of Labour and Employment
National Occupational Health and Safety Policy, 2013	To ensure workplace safety and occupational health	Department of Inspection for Factories and Establishments, Ministry of Labour and Employment

3. SUPPLY CHAIN OF CHEMICALS AND HAZARDOUS PRODUCTS



- According to section 2 of the *Dangerous Cargoes Act, 1953*, dangerous goods means –
 - (a) any cargoes containing any goods shown as ‘Explosives’ in the Comprehensive Classified List of Government Explosives compiled and issued by the Government or by the nominated authority of the Government or any ammunitions; or
 - (b) petroleum, when the flashing point of such petroleum is below one hundred- and fifty-degrees Fahrenheit; or
 - (c) goods classified as dangerous in the Government Stowage Instructions prepared by it or by such authority as the Government may fix from time to time; or
 - (d) any cargoes which are liable to fire or explosion, and which are declared by the Government to be dangerous cargoes.
- Usual customs procedure such as submission of goods declaration with necessary import documents to the Customs authority and release order of Customs is necessary for Dangerous Goods.
- In addition to this, clearance/permission from Bangladesh Navy is necessary. Currently, Bangladesh Navy's clearance/approval is required for 3506 dangerous goods (as per Chittagong Customs House Meeting Minutes: Letter no S-4/9/proshason/Time release study/2013-14/356 date 06 January 2016).
 - In order to obtain permission from Bangladesh Navy, all inbound dangerous cargo must have declaration of IMO Class and number in the cargo manifest. For all inbound Dangerous Goods, B/L and Manifest must mention Proper Shipping Name, Technical Name/Chemical Name.

3. SUPPLY CHAIN OF CHEMICALS AND HAZARDOUS PRODUCTS

- Hazardous cargo under IMO Class 1 and 7 are allowed landing for direct delivery with prior permission of Bangladesh Navy and subject to the readiness of consignee for taking direct delivery. All the others hazardous cargo covered by IMO Class 2, 3, 4, 5, 6 and 8 are allowed landing with prior permission of the naval authorities. Telephone/fax and email address of the consignee/notifying party is to be mentioned in the Bill of Lading for all hazardous cargo.
- Dangerous goods can be identified by reading the International Maritime Dangerous Goods (IDMG) code mentioned in the Bill of Lading/Import manifest. The port authority, based on the IDMG code, determines the category of Dangerous Goods and which level of precaution will be taken for a specific Dangerous Goods.
- Bangladesh Navy is the authority for inspection of Dangerous Goods, and upon satisfaction it issues the NOC. To receive approval/NOC for Dangerous Goods from Bangladesh Navy, importers will have to furnish following documents in original:
 1. Bill of Lading, invoice, packing list
 2. Authorization certificate from the CCI&E
 3. Import permission of the Department of Explosives
 4. Storage and user license from DC

4. ICD RELATED ISSUES AND CONCERNS

- Under the new policy, ICDs need to be established **beyond 20 km radius of Chittagong city.**
 - In that consideration most of the existing ICDs **need to be relocated** to new places following the criteria
 - The **condition is likely to be imposed for new ICDs**
- The **safety concerns are high** for ICDs located in the **nearby locality** which handles chemicals and hazardous products
- Given the increasing amount of chemicals handled by these ICDs, **proper safety protocol needs** to be set in for handling of those products

Location of ICDs

Name of the Off-dock	Location	Distance from the Port
Dhaka ICD	Kamlapur, Dhaka	243 Km
Esack Brothers Industries Ltd	Middle Haliahahar, Bandar, Chittagong	0.74 Km
Chittagong Container Transportation Co. Ltd.	Middle Haliahahar, Bandar (Near Port Stadium), Chittagong	1.5 Km
K&T Logistics Ltd.	CEPZ, Chittagong	1.0 Km
QNS Container Services Ltd.	Sector 6A, CEPZ, Chittagong	1..5 Km
Ocen Container Ltd.	Katghar, North Patenga, Chittagong	7.5 km
Vertex Off-dock Logistic Services Limited	Delwar Bhaban(5th Floor), 104 Agrabad C/A, Chittagong	6.0 Km
Shafi Motors Ltd.	Fauzderhat, Sagorika avenue, Chittagong	7.0 Km
Iqbal Enterprise	Iqbal Bhaban, 73 agrabad C/A, Chittagong	3.7 Km
Summit Alliance Port Limited (west)	North Patenga, Kathghar, Chittagong	8.0 Km
Incontrade Limited.	Laldiar Char, East Patenga, Chittagong	8.0 Km
KDS Logistics Ltd.	Sonaichari, Ghramara	19 Km
Portlink Logistics Centre Ltd.	Bhatiary, Sitakunda, Chittagong	14 Km
Golden Containers Limited	North Kattali, City Gate, Pahartali, Chittagong	7.5 Km
Summit Alliance Port Limited (East)	Katghar, South Patenga, Chittagong	8.0 Km
Haji Saber Ahmed Timber Co. Ltd	50, kalurghat Heavy Industrial Area. Chittagong	14 Km
Eastern Logistics Limited	Southland Centre, 5 Agrabad C/A, Chittagong	6.0 Km
BM Container Depot Limited	Keshobpur, sitakunda, Chittagong	16 Km
Nemsan Container Ltd.	Uttar sonaichari, Kumira, Sitakundo, Chittagong	28.2 Km

4. ICD RELATED ISSUES AND CONCERNS

- Most of the ICDs are found with **different level of non-compliances**. These are related with operational without renewal of licenses, depots having diesel pump and lack of fire hydrant facilities etc.

Operation without renewing licenses

Regulations related to the issue

Not renewed due to non-submission of clearance from the Department of Environment Eastern Logistics Limited, SAPL (East) and SAPL (West) Depots

Not renewed due to lack of NOC from the Chittagong Port Authority Messrs K&T Logistics and Portlink Logistics Centre Limited (Unit-2)

Not renewed due to some other complications Messrs CCTCL-2, Anchorage Depot Ltd, and Messrs Esack Brothers Ltd

Depots having a diesel pump

Regulations related to the issue

Ten container depots have their own diesel pumps. Having diesel pumps in hazardous product management installations is extremely risky. BM Container Depot, Golden Container Limited, Messrs Esack Brothers Limited, Portlink Logistics Centre Limited, SAPL, Ocean Container Limited, KDS Logistics Limited,

As per rules, setting up a diesel pump inside a container depot requires a no-objection certificate (NOC) from Bangladesh Petroleum Corporation (BPC). But the depot officials are not aware of having NOC from the BPC Incontrade Limited, Ispahani Summit Alliance Terminal Limited, and Nemsan Container Depot.

Lack of fire hydrant

Regulations related to the issue

Some 13 container depots have no fire hydrant while remaining ones have started installing the fire-extinguishing facility after the BM Container Depot fire. BM Container Depot, Esack Brothers Limited, SAPL, Ocean Container Limited, Messrs CCTCL, Eastern Logistics Limited, QNS Container Limited, Haji Saber Ahmed Timber Company, Shafi Motors Limited, Portlink Logistics Centre Limited and Nemsan Container Depot Limited.

4. ICD RELATED ISSUES AND CONCERNS

- The **safety protocol maintained by CPA** with regard to hazardous chemicals seems to be **inadequate**
 - CPA has asked importers to get their hazardous chemicals released from the port **within 72 hours** of arrival
 - Chattogram port itself is **not yet ready** to handle dangerous goods
 - CPD is planning to set up a **warehouse for 'imported' IMO listed goods**
- The International Maritime Organization (**IMO**) in 2016 informed the shipping ministry of the lack of proper compliance with the code in Bangladesh.
 - The audit report of the International Maritime Organization is one of the 17 audit objections. They pointed out that Bangladesh is **not following the IMDG code properly**.
 - The IMO suggested **the shipping authorities form a committee to oversee the implementation** of the **codes**. But this proposal saw no headway in five years.
- The license of BM Depot was **renewed on two instances** in 2016.
 - On both occasions, the depot authorities applied for **license renewal after it expired**.
 - The depot authorities in 2020 applied for renewal after 3 months and 16 days of expiry.
 - The customs authorities served a show-cause notice for the delay and the depot authorities got their license renewed upon a commitment that **they would not make the same mistake again**.

4. ICD RELATED ISSUES AND CONCERNS

- The BM Depot authority obtained an '**orange category**' license to store and handle containers and export-oriented goods like ready-made garments (RMG) and food items.
 - But it is needed to obtain a '**red category**' license to store chemicals.
 - During availing the clearances, they flouted the directives in practice.
- The probe committee members found a **diesel pump** in the compartment of the depot and the explosion could have been much more severe had the diesel pump caught fire
 - The depot authorities **did not take the approval** for such a pump from the fire service
 - It was learned that no such application was made to Bangladesh Petroleum Corporation either
- Not having adequate **fire extinguishers and hydrants and automated power pump**

5. INDUSTRIAL SAFETY FRAMEWORK FOR DANGEROUS CHEMICAL VALUE CHAIN



- There is **institutional and operational weaknesses** across the **value chain of dangerous chemicals** which need to be addressed – in this case it is related with ICDs
 - These include **NBR, Customs, FSCD, DoE, DIFE, Boiler Authority, Bangladesh Navy**
 - These are related with **licensing, registration**, certification, renewal of those documents
 - **Regular inspection of these** establishments need to be strengthened
 - **Laws, rules, regulations and guidelines** are either **unclear or non-specified** in case of dealing with hazardous chemicals
- **A comprehensive industrial safety framework** for dangerous chemicals need to be established
 - Such a framework should cover the **whole value chain including** production, transportation, storage, shipment and delivery
 - Necessary **amendment of rules related to handling** of these chemicals concerning all stages of the value chain need to be undertaken
- **Monitoring and oversight institutions concerning** the industrial safety related to dangerous chemicals need to **revise their inspection protocol** including necessary provisions
 - Assuring the safety and security at each stage of the value chain
- Given the large number of authorities involve with different roles and responsibilities- **a well-coordination between** these authorities need to be ensured.
 - Operation of the **coordination committee** needs to be regular and effective

5. INDUSTRIAL SAFETY FRAMEWORK FOR DANGEROUS CHEMICAL VALUE CHAIN



- The concerned authorities **appears to bypassing their due-diligence** in ensuring compliances which **caused the increasing risks in** the hazardous chemicals international trade
 - The **compliances of the SOPs and failure to maintained compliances** need to be immediately handled
 - **Officials dealing with the responsibilities** will be made **accountable** at every stage
- A detailed **operational protocol need** to be designed for the hazardous chemicals supply chain which need to be maintained
- A **central authority need to monitor** the effective functioning of the laws, rules, protocol and other related compliances

Thank you