

CHEMICAL ACCIDENTS PREVENTION, PREPAREDNESS AND RESPONSE

**TRAINING TO CHEMICAL SUPERVISORS ON MANAGEMENT
AND CONTROL OF CHEMICALS AND ITS PRODUCTS (CSP)**

BACKGROUND

UN Environment's "Global Chemicals Outlook report (2019)" highlights an **increasing of the world chemical production, use and disposal of chemicals** is steadily spreading to developing "chemical intensification of the economy countries and countries with economies in transition.

From 2012 to 2020, chemicals production expected to grow by **46% in Asia Pacific, 40% in Africa and the Middle East, and 33% in Latin America and the Caribbean.**

Developing countries and countries in transition are often at risk of adverse effects from **chemical accidents** because of limited regulations or inadequate enforcement of existing rules and awareness of risks, preventive measures and inadequate resources for prevention, preparedness and response.

BACKGROUND CONT.....

- ❖ **Tanzania like many other developing countries has been importing and using various types of **chemicals in large volumes** to facilitate production of goods and services from different economic sectors.**
- ❖ **Because of the nature and wide range of chemical use and handling including long distance transportation of chemicals to mining sites and neighbouring counties, some **chemical accidents have been experienced** leading to **adverse effects of health and the environment.****

OCCURRENCE OF CHEMICAL ACCIDENTS

Management



Systems & Procedures

Environment



Natural & Man-made

Equipment



Design & Equipment

Human Behavior

Source: Ministry of Home Affairs, 2023

2. The State of Road Accidents in Tanzania ...

Road Accidents in Tanzania 2018 – 2023

Category/Year	2018	2019	2020	2021	2022	2023
Number of road accidents	3,464	2,704	1,714	1,698	1,720	1,733
Number of deaths	1,788	1,440	1,270	900	1,545	1,647
Number of those injured	3,746	2,834	2,126	1,958	2,278	2,716

Source: Ministry of Home Affairs, 2023

Number of Road Accidents and Sources

S/N	Source	Year					% in 2022
		2018	2019	2020	2021	2022	
1	Negligence of driver	1,046	816	598	574	624	36.3
2	Speeding	364	288	272	354	382	22.2
3	Negligence of motorcyclist	725	492	307	300	259	15.1
4	Aggressive driving	496	344	164	192	138	8.0
5	Overtaking	217	236	97	59	117	6.8
6	Defective vehicles	197	105	83	52	56	3.3
7	Negligence of cyclist	103	72	34	36	36	2.1
8	Negligence of pedestrian	259	162	77	47	29	1.7
9	Alcohol	61	46	15	34	27	1.6
10	Road blocks	120	32	9	4	22	1.3
11	Bad road	80	65	30	14	12	0.7
12	Fire	14	10	4	3	4	0.2
13	Railway crossing	10	8	3	6	4	0.2
14	Animal carts	1	3	4	2	3	0.2
15	Negligence of passenger	1	6	1	1	3	0.2
16	Vehicle headlights	31	19	15	2	2	0.1
	Total	3,725	2,704	1,713	1,680	1,718	100

Source: Tanzania Police Force – Traffic Division (2022)

- Human factor contributes ~90%
- Motorcycles feature as a major contributory factor

Accidents often have serious, even devastating consequences:

- ❖ **Injuries or fatalities among workers or the public in the vicinity;**
- ❖ **Exposures to chemicals or fires resulting in immediate injury or long-term health impacts;**
- ❖ **Environmental pollution: of rivers and underground water, where sources of water for drinking, industries and others relying on the source of water including fishing and agriculture are impacted.**

- ❖ facilities and nearby developments suffer significant damage sometimes resulting in **closure or temporary shutting down operations;**
- ❖ Other adverse effects to **health, the environment and property;**
- ❖ They can also result in major **economic losses** for the enterprise involved and for the entire community.

CHEMICAL EMERGENCY MANAGEMENT

Before a Disaster

During a Disaster

After a Disaster

Mitigation

- Develop preventive laws and regulations
- Implement advanced codes and standards
- Establish zoning requirements
- Buy insurance
- Construct barriers

Preparedness

- Stock disaster supplies kit
- Develop mutual aid agreements and plans
- Train response personnel and concerned citizens
- Prepare shelters and backup facilities

Response

- Search and rescue to identify affected people
- Assess initial damage
- Provide first-aid and humanitarian assistance
- Open and manage shelters

Recovery

- Debris removal
- Precise damage assessment
- Infrastructure destruction and reconstruction
- Restore the livelihoods
- Community development

PREVENTION AND MANAGEMENT OF ACCIDENTS

ICCA section 45 - Precautions needed to prevent accidents and harm to human health and environment. Such steps include:

- ❖ monitoring of safety, through adequate maintenance of operations and inspections;**
- ❖ choice of adequate route avoiding obstacles, peak hours and densely populated areas and hence have a suitable carriage;**
- ❖ avoiding over loading of chemicals;**
- ❖ taking precautions commensurate to properties of the chemical**

- ❖ Prepare **contingency plans** and **procedures for managing accidents**;
- ❖ In the case of **an accident**, immediately put into effect the approved contingency plan;
- ❖ in the case of a spill, immediately respond, including notifying the circumstances of the spill and any action taken or proposed to be taken in relation to the spill to the public, the Registrar and any other relevant authorities;
- ❖ who causes an accident or spill shall forthwith do everything Practicable to Prevent, eliminate, restore and ameliorate the adverse effects of the accident or spill

OUTLINE OF THE CONTINGENCY PLAN

Facility Identification and General Information

- (a) Name of Facility**
- (b) Address of Facility**
- (c) Name, Title, Home Address, and Telephone Number (office and home) of Primary Emergency**
- (d) Coordinator**
- (e) Type of Facility**
- (f) Site Plan**
- (g) Description of Generator, TSDF Activities**

EMERGENCY COORDINATOR

- (a) Primary Coordinator**
- (b) Alternate Coordinators**
- (c) Duties and Authority to Commit Resources**

PREPAREDNESS AND PREVENTION

- (a) Equipment to minimize the threat to public health, safety, welfare, and the environment from
 - (i) fire**
 - (ii) explosion**
 - (iii) unplanned releases or spills of hazardous materials**
 - (iv) Other emergencies.****
- (b) Preparedness to react to any unusual situation quickly**
- (c) Mock drill procedure**
- (d) Communication systems including public address and phone system**

INFORMATION DISSEMINATION ON EXPOSURE TO CHEMICALS

- a) means of information dissemination to workers and visitors;**
- b) means of information dissemination to members of public, emergency responders and local authorities**
- c) means of controlling exposure**

COORDINATION AGREEMENTS AND TELEPHONE NUMBERS

- a) Police**
- b) Fire**
- c) Hospital**
- d) Other Emergency Response Units**
- e) Spill Contractors**

CONTINGENCY PLAN ACTIVATION

a) Spills

b) Releases

c) Fire

d) Explosion

EMERGENCY RESPONSE PROCEDURES FOR SPILLS, RELEASES, FIRE AND EXPLOSION

- a) Immediately upon discovery of an emergency (Notification)**
- b) During the emergency control phase (Control and Containment)**
- c) Following attainment of control (Follow-up)**

EMERGENCY EQUIPMENT

- a) Emergency Equipment Inventory**
- b) Location of Emergency Equipment (Facility Diagram)**
- c) Equipment Capabilities**
- d) Emergency Equipment Available from Other Sources**

Procedures for Use, Inspection and Maintenance of Emergency Equipment

Evacuation Plan

- a) When to evacuate**
- b) Signals to begin evacuation**
- c) Primary evacuation routes**
- d) Alternate evacuation routes**
- e) Assembly point**

CONCLUSION

- ❖ Proper management of chemical accidents and strict chemical control are essential
- ❖ Let the knowledge gained from this training serve to improve preparedness to chemical accident in our country

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