OVERVIEW OF CHEMICAL AND INDUSTRIAL ACCIDENTS

Focused thematic discussion on chemical and industrial accidents
UNDRR European Forum on Disaster Risk Reduction (EFDRR)
24 November 2021, 10.00 – 12.00 CET, Matosinhos, Portugal and online
Hazardous chemicals & industrial development

- According to the UNEP Global Chemical Outlook II, chemicals production is soaring in the last decade;

- The size of the global chemical industry exceeded US dollars 5 trillion in 2017, and is expected to double by 2030 *

- Dependence on chemicals for technological progress is also increasing and many substances used for implementing new technologies are hazardous.

Disastrous chemical accidents are still happening

• Severe chemical accidents continue to happen worldwide and in the EU.

• Over the past decades, successive major accidents, have caused deaths, injuries, significant environmental pollution and massive economic losses, e.g.;
  – Leverkusen, Germany (2021)
  – Beirut, Lebanon (2020),
  – Rouen, France (2019),
  – Bentos Rodrigues, Brazil (2015),
  – Tianjin, China (2015),
  – Gumi, Korea (2013)

• Recovering from industrial accidents sets back development gains, takes time and is expensive and many places still suffer from events that happened years before.
eMARS - EU and EEA major accidents for period 2016-2021 (as of 14.10.21)

140 (published and unpublished) reports of major accidents occurring on EU Seveso sites from January 2016 to October 2021. Of these 135 have consequences identified.

Most common reasons for reporting are volume of substance released (75), property damage (38), and human health impacts (37)

44 Fatalities in total (10 with multiple)

6 accidents with over 10 injuries, 205 injuries in total

In 2019, one event closed 237 schools in 12 communities for 2 days

In 2016 a refinery fire cost nearly €800 million in damages and an explosion in a steel factory in 2016 cost €80 million

In 2017 ~5000 people had to drink bottled water for 9 days due to a bromine release to the water supply

Notable chemical accidents in the EU

• Sulphur dioxide release at a pulp production site in Hallein, Austria on 2 June 2021
  One person was killed onsite. The accident highlighted challenges associated with emergency planning (especially information to the public and crisis management) and risk management and monitoring of ageing equipment.

• Explosion in the Waste Management Centre in Leverkusen, Germany, followed by a fire, 27 July 2021
  7 persons were killed and 31 were injured. Preliminary investigations are focusing on the conditions in which the waste was stored and associated control measures.
Natech Accidents

Natural hazards, such as earthquakes, floods or storms, can initiate events which may challenge the safety and operation of hazardous installations and trigger an accident.

Joint Natech Project between the OECD, UNECE, JRC, UNEP/OCHA Joint Environment Unit

Would welcome participation from the disaster community in the project!

Eruption of Cumbre Vieja volcano on La Palma, Spain 11 October 2021: Lava engulfs a cement factory which catches fire
The MAHB alert* (Lessons Learned Bulletin) published in January 2021, but 18 incidents occurred in months after, 11 of them fatal.

Most incidents occurred in developing countries. Of 5 incidents in the European Union, two were fatal.

In April 2021, due to the JRC intervention, the WHO added oxygen risk management advice to its guidance and training.

46 fires associated with Covid-19 oxygen therapy have occurred since May 2020, 26 of them have been fatal.

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Challenges ahead.....

• Continue to help maintain a high level of safety;

• Raise awareness of the risks and costs of accidents at higher policy levels;

• Make chemical accident prevention a priority for the sound management of chemicals;

• Integrate prevention, preparedness and response to chemical accidents with disaster risk reduction and disaster risk management, in particular in the case of Natech accidents.