



JRC Annual Analysis of chemical accidents in the media 2017-2018 in African Atlantic Façade Countries and Nigeria

Maureen Heraty Wood, Major Accident Hazards Bureau, European Commission Joint Research Centre

4 February 2019

Chemical accidents in the media worldwide

To give context, this first section contains the analysis of chemical accidents in the media worldwide.

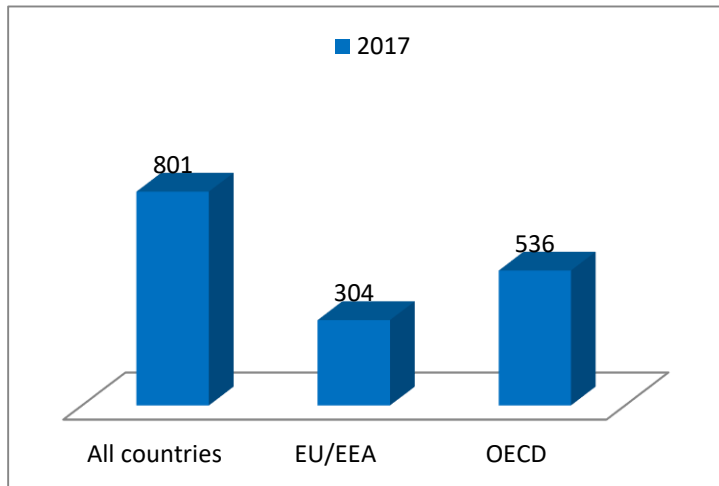


Figure 1. Chemical incidents in the global media – 2017 (JRC-MAHB – February 2019)

In 2017, the JRC’s Major Accident Hazards Bureau (MAHB) began collecting data on chemical incidents reported in the media throughout the world using EMM alerts and other sources. This work was originally prepared for the OECD Working Group on Chemical Accidents (OECD WGCA), but has been subsequently incorporated into forthcoming publications of UN Environment (the Global Chemicals Outlook) and the Global Assessment of Risk 2019. The study serves to provide an important baseline for measuring the status of chemical accident risk in line with the Sendai Disaster Risk Reduction Framework.

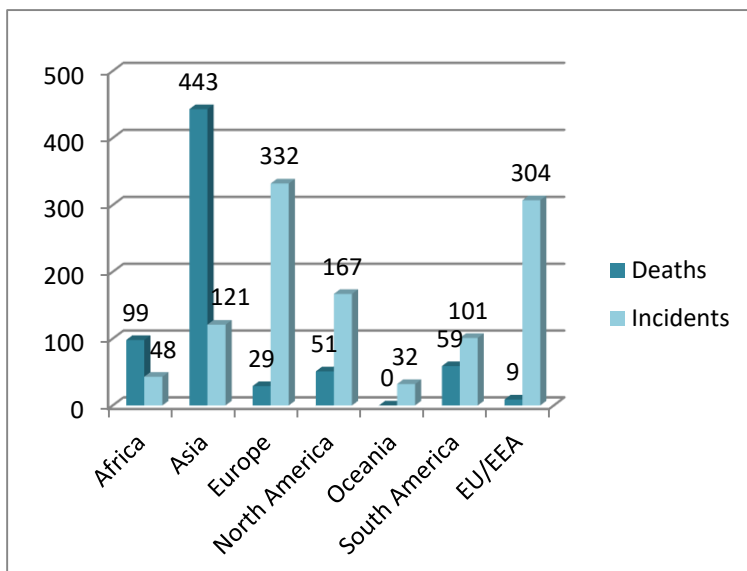


Figure 2. Chemical incidents and related fatalities reported in the media by continent in 2017 (JRC-MAHB - February 2019)

In 2017, MAHB compiled a total of 806 chemical small and large incidents reported in the media, identified through the European Media Monitor (EMM) news briefs. Any incident involving a chemical release on a fixed site, transport, pipeline, or offshore platform is included in the database. Annual figures for 2018 will be available in February 2019.

Focus on Africa: Chemical incidents in the media in 2017-2018

Figure 2 shows Africa in comparison to other continents showing deaths versus overall number of incidents reported in the media per continent in 2017. In total one-third of chemical incidents in African countries resulted in fatalities in 2017, including four incidents where 10 or more people were killed.

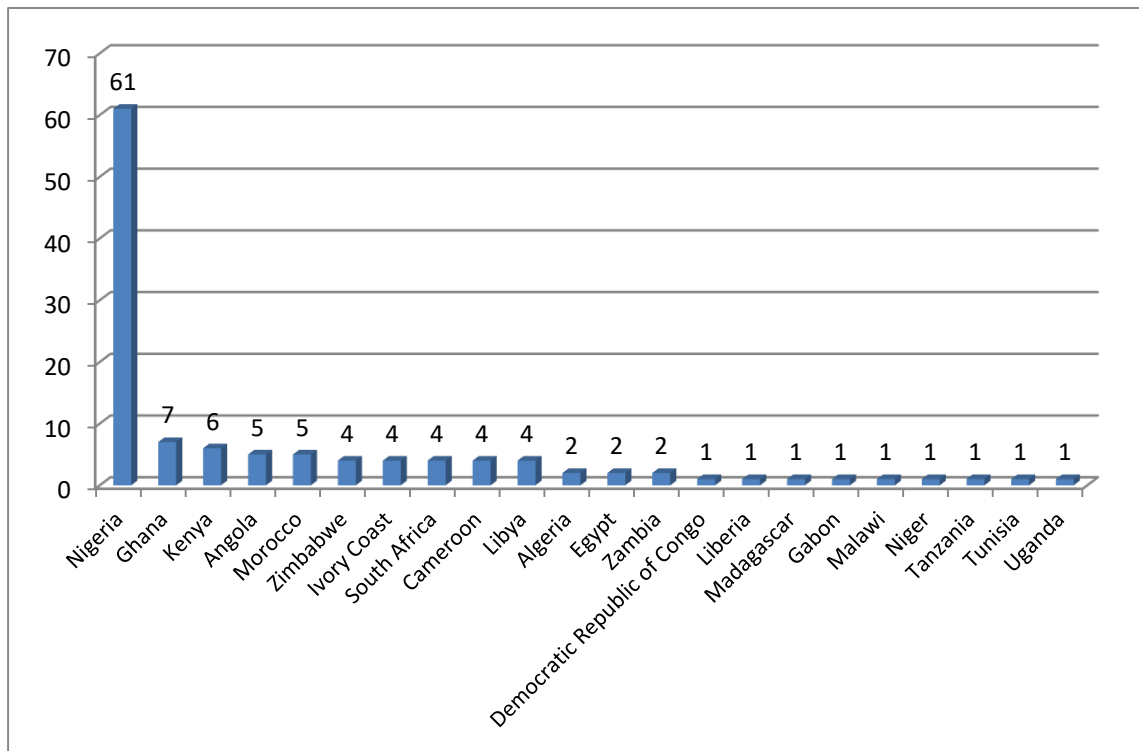
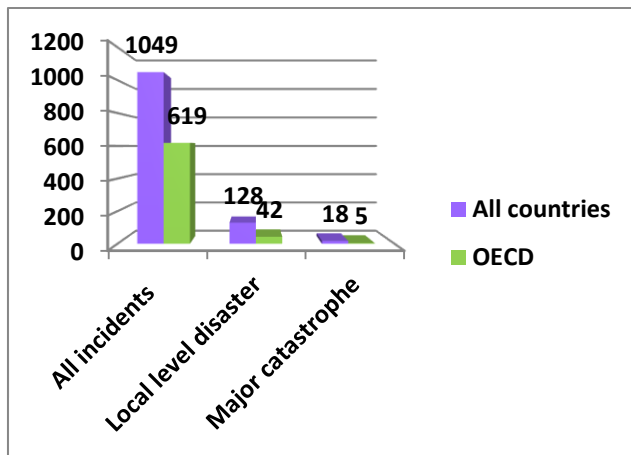


Figure 3. Chemical incidents occurring in African countries as reported by the media in 2017 and 2018 (JRC-MAHB - February 2019)

Figure 3 shows the number of incidents reported per country during 2017 and 2018.

New developments in 2018 – Analysing impacts of chemical accidents

In 2018, MAHB began classifying incidents in terms of three levels of severity, “no or limited consequences”, “locally serious incident” and “major catastrophe” (see Figure 4). These ratings are based mainly on the [European Gravity Scale](#) (0-2, 3-4, 5-6, respectively) but can be increased if there are also exceptional political or economic consequences.



Local level disaster = 3-4 on the European Gravity Scale =

- 2-19 deaths
- 6-50 serious injuries
- 500 – 50,000 (people x hours) evacuated
- € 2 – 10 million property damage,
- 10,000 to 1 million m³ environment damage
- Politically significant at local level

Major catastrophe = ≥ 5 on the European Gravity Scale (including politically significant at national level)

Figure 4 Chemical incidents in the media that reportedly caused either local level disasters or a major catastrophe from 1 January to 30 September

The analysis of incidents through 30 September 2018 is shown in Figure 4 along with the classification criteria.^{1,2}

Chemical incidents in the African Atlantic Façade and Nigeria in 2018

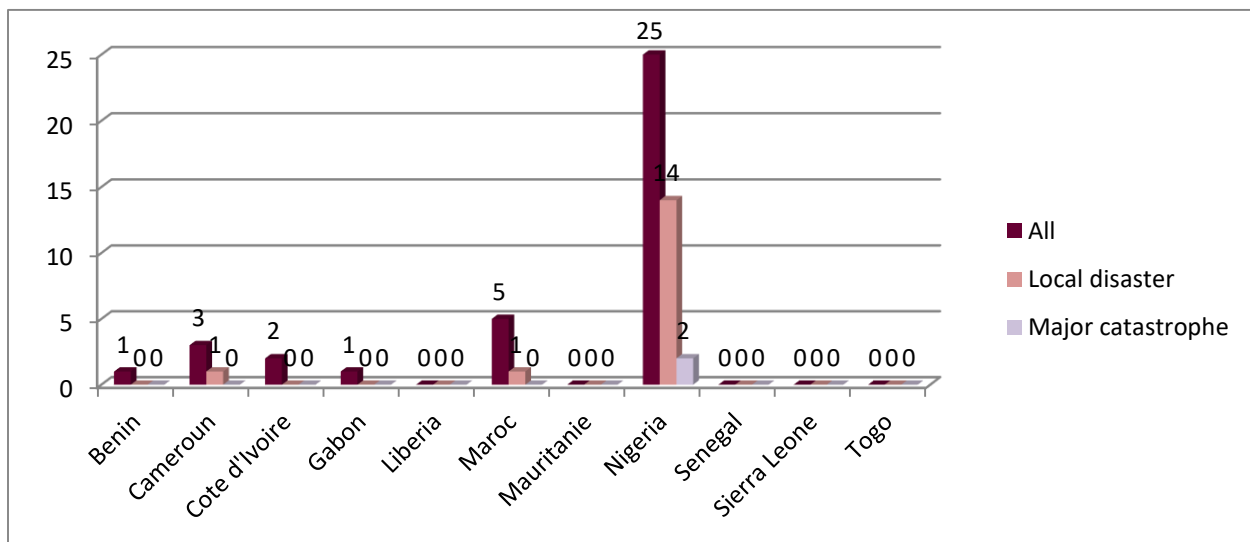


Figure 5 Chemical incidents in the media that reportedly caused either local level disasters or a major catastrophe in AAF countries in 2018. (JRC-MAHB, February 2019)

¹ The numbers may underestimate the number of events occurring in any one country. In some cases, the web search keywords may have failed to identify some qualifying incidents. It is also possible that the media in some countries are more active in reporting chemical incidents. In general, it is assumed that web searches are most accurate in identifying incidents involving one or more deaths, since these incidents tend to be more widely reported.

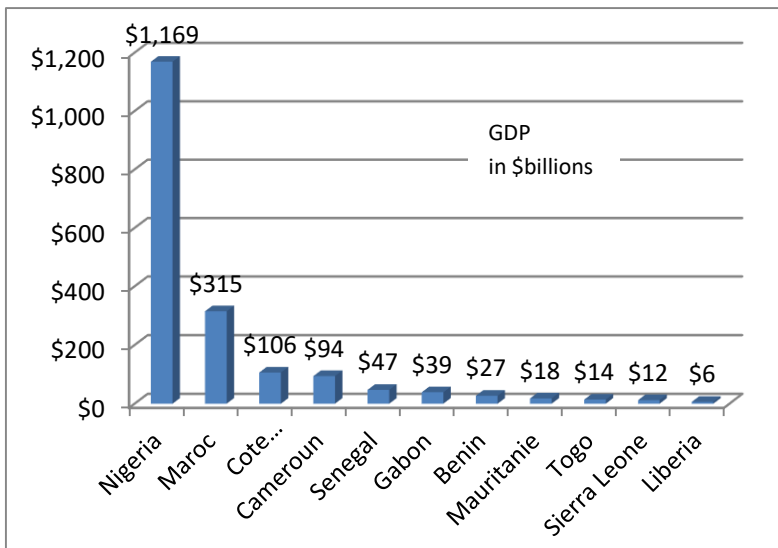
² <http://www.aria.developpement-durable.gouv.fr/in-case-of-accident/european-scale-of-industrial-accidents/?lang=en>

Of the 10 countries in the African Atlantic Façade, a total of 13 occurrences of chemical incidents were reported in the media, as shown in Figure 5. Of these, two incidents (one in Cameroon and one in Morocco) had serious impacts at the local level. In Yaoundé, Cameroon, last October, gas cylinders exploded on a truck after one of its tires punctured and a bystander who rushed over to take a picture was killed. The government undertook an investigation of the incident. A serious industrial incident also occurred on 2 August 2018 at the Morocco Chemical Complex located 7 km from the Safi city centre caused a release of sulphur dioxide. According to the media, dozens of citizens, particularly patients with asthma and allergies, were rushed to the hospital.

Nigeria had by far the largest number of incidents reported in the media in 2018, including four events with high local impact and two disasters that received heavy national attention. The explosion of a pipeline near Aba depot (about 30 km outside of Port Harcourt) caused the deaths of over 200 people. In June 2018 a petrol tanker driver lost control, and the tanker exploded on the Otedola Axis of Berger Bridge along Lagos Ibadan Expressway burning nine persons to death beyond recognition as well as 54 vehicles. Several incidents in Nigeria also caused serious property damage, burning dozens of shops, houses and vehicles. Examples of incidents reported in the media in AAF countries that had limited impacts are shown in Table 1.

Table 1. Examples of chemical incidents in AAF countries with “limited impact” as reported in the media in 2018

Cotonou, Benin 2 November 2018	A large fire was recorded following an explosion of jerry cans of adulterated gasoline. According to reports, Kpayo gas cans were exposed behind a cafeteria. The flames consumed several houses, shops and other workshops. No loss in human life was noted, but the material damage caused was enormous. (www.24hautbenin.info)
Baho, Cameroon 11 June 2018	The tank of a truck exploded on a truck that was carrying a mixture of expired chemicals to the waste dump. Several people in the vicinity of the incident reported being extremely ill, including vomiting, and went to the hospital. (www.camer.be)
Port Bouet, Ivory Coast 25 June 2018	A leakage of petroleum oil was detected on a pipeline of the Ivory Coast Refinery Company (SIR). Pumping operations were immediately stopped and technical measures were taken to channel the leakage. The incident had no impact on SIR and environmental activities. (www.koaci.com)
Kenitra, Morocco 21 September 2018	A fire occurred in a plant for the production of ethanol and carbon dioxide from beet molasses. The fire started immediately after the welding operation of a storage tank in the plant, according to authorities. There were no injuries. (www.yabiladi.com)
Port Gentil, Gabon 4 January 2018	Due to a power outage, pressure on a refinery column broke the safety valve and caused the fire to fire above the column. (www.gabonreview.com)



It is notable that the number of industrial incidents rises with GDP. As shown in Figure 5, Nigeria has by far higher GDP than the AAF countries. Nonetheless, fatalities from chemical accidents in Nigeria far exceed levels in developed regions of the world, such as the European Union, that have far higher GDPs. Of the AAF countries, Morocco has the highest GDP, \$315 billion, 50 times higher than Liberia, the poorest country in the region.

Figure 6 GDP of AAF countries and Nigeria in 2018

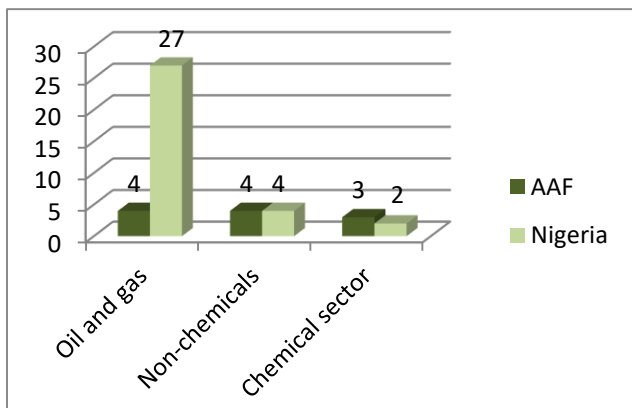


Figure 7 Chemical incidents in AAF countries as reported by the media by industry (JRC-MAHB, February 2019)

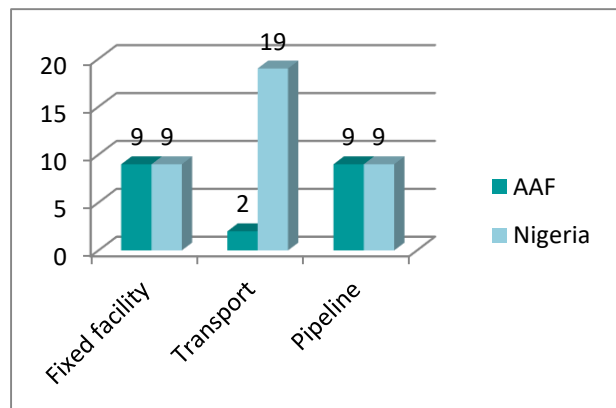


Figure 8 Chemical incidents in AAF countries as reported by the media by hazard source (JRC-MAHB, February 2019)

Figures 7 and 8 provide an indication of the type of industry and hazard source of chemical incidents reported in AAF countries. Incidents in Nigeria are by far dominated by the oil and gas industry and largely in transport. Of 11 fatal incidents, six occurred during transport of fuel and three in leakage and explosion of fuel pipelines. In AAF countries, incidents in commercial or industrial sites also involved fire and explosion of gas containers that were either sold on the site or used as fuel. Two incidents on chemical processing sites occurred in Morocco and one occurred in Cameroon.

Update in 2019

On 10 January 2019 a chemical plant in Diamniadio, Senegal, was reported to have caused two deaths and several injuries.