UNPLANNED EXPLOSIONS IN AMMUNITION DEPOTS IN THE DEMOCRATIC REPUBLIC OF CONGO

January 1998- October 2011

April 2012
OUTLINE

I. Brief presentation of DRC
II. Location of accidents
III. Period and casualties aggregated by province
IV. Main circumstances of accidents
V. Causes of accidents
VI. Worldwide trend
VII. Corrective measures
VIII. Expected results
IX. Cost estimate 2012 – 2016
X. Lessons to learn
I. BRIEF PRESENTATION OF DRC
✓ Location of DRC in Africa
I. BRIEF PRESENTATION OF DRC (continuation)

✓ Location of DRC IN Africa

Located in Central Africa, DRC borders:
• **West** the Atlantic Ocean, the Enclave of Cabinda (Angola) and the Republic of Congo;
• **North** the Central African Republic and South-Sudan;
• **Est** Uganda, Rwanda, Burundi and Tanzania;
• **South** Zambia and Angola.
I. BRIEF PRESENTATION OF DRC (continuation)

Map of the RDC and its 11 Provinces

Capital: Kinshasa
Area: 2345000 km²
Population: 66,514,504
Latitude: -2.99
Longitude: 23.82
Time zone: UTC +1
Currency: Congolese Franc
Language(s): French, Lingala, Kikongo, Tshiluba and Swahili
Ethnic groups: + than 450
II. LOCATION OF ACCIDENTS
III. PERIOD AND VICTIMS PER PROVINCE

✓ April 2000:
   Kinshasa (Nd’jili International Airport):
   - 101 deaths
   - 200 casualties

   Declared Cause: electric defect

✓ November 2005:
   North Kivu Province (Land of Walikale):
   - 06 deaths

   Declared Cause: lightning
III. PERIOD AND VICTIMS PER PROVINCE (continuation)

✓ June 2007:
   Equator Province (City of Mbandaka):
   - 03 deaths
   - 52 casualties
   Declared Cause: Fire

✓ 2009:
   Western Kasaï Province (City of Kananga):
   Declared Cause: lightning

North Kivu Province (City of Goma):
- 1 casualty
  Declared Cause: human mistake
III. PERIOD AND VICTIMS PER PROVINCE (continuation)

✓ 2010 :
   Equator Province (City of Mbandaka)

   Declared Cause: autoignition

✓ October 2011 :
   City of Kinshasa (Capital of the DRC)

   Declared Cause: lightning
IV. MAIN CAUSES OF ACCIDENTS

1. Physical or chemical deterioration of ammunitions and explosives

2. Dangerous storage modalities and unsuited facilities

3. Unsafe management practices and unsuited transportation modalities

4. Poor safety conditions of stocks

5. Other (unknown)
## V. CIRCUMSTANCES AND CAUSES OF ACCIDENTS

<table>
<thead>
<tr>
<th>Circumstances</th>
<th>Causes</th>
<th>Number of events</th>
<th>% of causes</th>
<th>% of known causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical or chemical deterioration of munitions and explosives</td>
<td>Auto-ignition of propellant, expired shelf-life</td>
<td>18</td>
<td>6,0 %</td>
<td>8,4 %</td>
</tr>
<tr>
<td>Dangerous storage modalities and unsuited facilities</td>
<td>Electrical defect</td>
<td>12</td>
<td>4,0 %</td>
<td>5,6 %</td>
</tr>
<tr>
<td></td>
<td>Fire</td>
<td>46</td>
<td>15,2 %</td>
<td>21,4 %</td>
</tr>
<tr>
<td></td>
<td>High temperature</td>
<td>11</td>
<td>3,6 %</td>
<td>5,1 %</td>
</tr>
<tr>
<td></td>
<td>Lightning</td>
<td>15</td>
<td>5,0 %</td>
<td>7,0 %</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>3</td>
<td>1,0 %</td>
<td>1,4 %</td>
</tr>
<tr>
<td>Unsafe management and transportation modalities</td>
<td>During disposal of explosive munitions</td>
<td>36</td>
<td>11,9 %</td>
<td>16,7 %</td>
</tr>
<tr>
<td></td>
<td>Handling/Negligence</td>
<td>52</td>
<td>17,2 %</td>
<td>24,2 %</td>
</tr>
<tr>
<td>Poor safety conditions</td>
<td>Safety / sabotage</td>
<td>22</td>
<td>7,3 %</td>
<td>10,2 %</td>
</tr>
<tr>
<td>Other</td>
<td>Not known</td>
<td>87</td>
<td>28,8 %</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>302</td>
<td>100 %</td>
<td>100 %</td>
</tr>
</tbody>
</table>
VI. ACCIDENTAL EXPLOSIONS – WORLDWIDE TREND
VII. CORRECTIVE MEASURES

1. Drafting of instruction manuals for the inventory, the demilitarization and the disposal of defective munitions (ongoing).

2. Elaboration of national standards or national safety and security norms for munitions and weapons management (ongoing).

3. Institution of a section responsible for ammunition stabilization and safety programmes within the Congolese Mine Action Centre.
VIII. EXPECTED RESULTS

1. Reinforcing stock management formation capability: basic techniques, demolition, leadership and competence management, recycling, etc.

2. Store facilities: technical evaluation for the rehabilitation and construction of infrastructures/depots aimed at rendering safe weapons and ammunitions

3. Delocalization of weapon and ammunition storage facilities currently located near populated areas
VIII. EXPECTED RESULTS (continuation)

4. Stock aging and surplus evaluation. Destruction of defective munitions and surplus

5. Implementation of an up-to-date weapons and ammunitions management and safety programme by adopting pertinent national norms and provisions

6. Technical and financial support by donors and other partners
<table>
<thead>
<tr>
<th>Activity</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction of temporary warehouse</td>
<td>140.000 USD</td>
</tr>
<tr>
<td>Construction of permanent weapons depots (15 depots:</td>
<td>11.875.000 USD</td>
</tr>
<tr>
<td>Central, Regional and transit)</td>
<td></td>
</tr>
<tr>
<td>Construction of ammunition depots</td>
<td>1.150.000 USD</td>
</tr>
<tr>
<td>Destruction of defective ammunition and weapons</td>
<td>1.500.000 USD</td>
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<tr>
<td>Training in stockpile management</td>
<td>285.000 USD</td>
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<tr>
<td>Permanent costs</td>
<td>3.737.500 USD</td>
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<tr>
<td>Project support costs</td>
<td>1.196.000 USD</td>
</tr>
</tbody>
</table>
IX. COST ESTIMATE 2012-2016 (continuation)

TOTAL EXPECTED FOUNDINGS:

19,883,500 USD
X. Lessons to learn from unplanned explosions
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THANK YOU FOR YOUR ATTENTION