The Impact of Armed Conflict on Urban Water Services

(protracted armed conflict and explosive weapons)

Experts’ Workshop - Water in Post-Conflict Situations and the Role of the Security Council

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Summary

Explosive Weapons
- Impact can be direct and/or reverberating
- Extent in space depends on the component of the service that is damaged
- Duration depends on the pre-attack condition of the service

Protracted armed conflict
- Impact can be direct, indirect, or cumulative
- Indirect impact are more difficult to deal with than direct
- Cumulative impact are the most difficult to deal with

Implications
- Strengthen IHL
- Make funding mechanisms more adaptable
- Increase technical capacity
- Re-work the relief-rehabilitation-development continuum
1. Water Service basics
2. Impact of Explosive Weapons
3. Impact of Protracted Armed Conflict
4. Implications
Urban services are more than just infrastructure. All essential services depend on people, hardware, and consumables.
Urban services are inter-dependent
1. Water Service basics
2. Impact of Explosive Weapons
3. Impact of Protracted Armed Conflict
4. Implications
Explosive weapons - direct and reverberating effects

'Blast Wave'

Fragmentation

Thermal Energy

Explosion

Direct effects...

+ Reverberating effects...

... on people, hardware, and consumables.

... on up, mid, or downstream components of the same service;

... on other services (the 'domino effect');

... far from the impact zone; and

... long after the detonation has occurred.

Spatial extent: f’n of hierarchy of component

Duration: f’n of the ‘baseline resilience’ (i.e. redundancies and preparedness)
1. Water Service basics
2. Impact of Explosive Weapons
3. Impact of Protracted Armed Conflict
4. Implications
**Indirect impact > direct impact**

**Hardware**
- pressure drops in water networks

**Consumables**
- looting of warehouses
- price spikes → rationing

**People**
- brain-drain
- trauma
Direct and indirect impact can accumulate.
1. Water Service basics
2. Impact of Explosive Weapons
3. Impact of Protracted Armed Conflict
4. Implications
IHL

• Direct impact of explosive weapons are ‘reasonably foreseeable’, both in space and in time
  • Proportionality assessments should include engineers within the targeting cell
  • Reverberating, indirect, and cumulative impact should be better documented and communicated – so that become ‘reasonably foreseeable’

Programming (for protracted conflicts):
• Donors to make funding mechanisms more adaptable
• Agencies to increase technical capacity

Conceptual
• Re-work the relief-rehabilitation-development continuum

Thank –you
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