Lessons Learned and Path Forward -from Chemical Weapons Demilitarization to Chemical Safety and Security –

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Addenda

1 Elimination of Chemical Weapons
   1) Stockpile and Non-stockpile
   2) Characteristics of Destruction Process
   3) Lesson Learned from the Successful Achievement

2 Chemical Safety and Security
   1) Life cycle of Hazardous Chemicals
   2) Life cycle of Chemical Weapons
   3) Difference of Hazardous Chemicals from Chemical Weapons
   4) Ways of International collaboration
      (1) Transferring of existing know-how
      (2) Sharing of knowledge and deliberating of countermeasures against new threat

3 Conclusions
1 Elimination of Chemical Weapons

1) Stockpile and Non-stockpile

- Stockpile:
  Over 90% of declared stockpile has been destroyed.

- Non-stockpile:
  Main motivation of recovering
  economic incentive,
  ecological requirement.
  UXOs or disposed munitions:
  Rusted, deformed, often with leakage
3) Lesson Learned from the Successful Achievement

- International consensus on elimination of Chemical Weapon CWC, OPCW
- Periodical sharing of information and know-how worldwide, OPCW side event, CWD conference since 1998

Good Atmosphere for International Collaboration
1) Life Cycle of Hazardous Chemicals

- Raw materials
- Transportation
- Production
- Products
- Transportation
- Usage
- Waste
- Transportation
- Disposal
2) Life cycle of Chemical Weapons

Controlled by Department or Ministry of Defense throughout of the cycle
3) Difference of Toxic Chemicals from Chemical Weapons

- Wide variety of kinds, forms, composition, quantity
- Daily work for production, transportation, storage and consumption.
- Distribution world-wide
- No total controllers throughout the life cycle.
4) Ways of international collaboration

(1) Transferring of Existing Know-how form developed countries to developing countries on

- Operation,
- Safe and Security,
- Mitigation of accident impact.
2 Chemical Safety and Security (cont’d)

(2) Sharing of Knowledge and Deliberating of Countermeasures against New Threat

- Sharing of state of the state of the art of technologies and knowledge
- Deliberating countermeasures among all the stakeholders
(3) An Example of International Collaboration on Chemical Safety & Security -CHEMSS2016-

- Regulatory/Voluntary issue
  - Chemical security
  - Transportation
- Solutions for disposal of hazardous chemicals
- Cyber security and reliability of industrial control systems
- Threat over view

- Countermeasure and mitigation issue
  - Incident command management
  - Assistance to first responders
  - Environmental impact assessment
  - Local awareness, responsibility, partnerships and response,
- Global partnerships-global progress
  - UN security council resolution 154
  - working session of Seveso 3
Conclusions

• There is no border against pollution. We should have no borders against Collaboration.
• International Collaboration by
  • Transferring of existing know-how from developed countries to developing countries and,
  • Sharing of knowledge among stakeholders to deliberate countermeasures against new threat.
• Utilization of cumulated experience of 19 years of CWD for enhancing Hazardous Chemical Safety and Security
Thank you very much for your kind attention

Any questions?