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Post-War Ammunition Stockpile Recovery

by
Erik K. Lauritzen
NIRAS DEMEX
Copenhagen, Denmark
ekl@niras.dk

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Consulting Engineers and Planners:

- Agriculture
- Building and industry
- Civil works
- Energy
- Environment
- Management sciences
- Urban planning
- Transportation
- Social sciences
- Hazardous waste
- Defence & security

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Introduction - NIRAS

- The number four consulting engineering company in Denmark
- 1,000 employees
- 14 offices in Denmark
- Subsidiaries in Poland, Sweden, Ukraine, Finland, Bulgaria, Greenland, Tanzania and Zambia
- Turnover: $ 120 mill annually

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DEMEX Defence and Security Technologies

Protection of vehicles against explosions

Decommissioning of military installations

Security for Danish embassies

Demolition

Blasting for construction

Mine & UXO clearance

Post-War Reconstruction

- Lebanon
- Bosnia
- Kosovo
- Iraq
- Afghanistan

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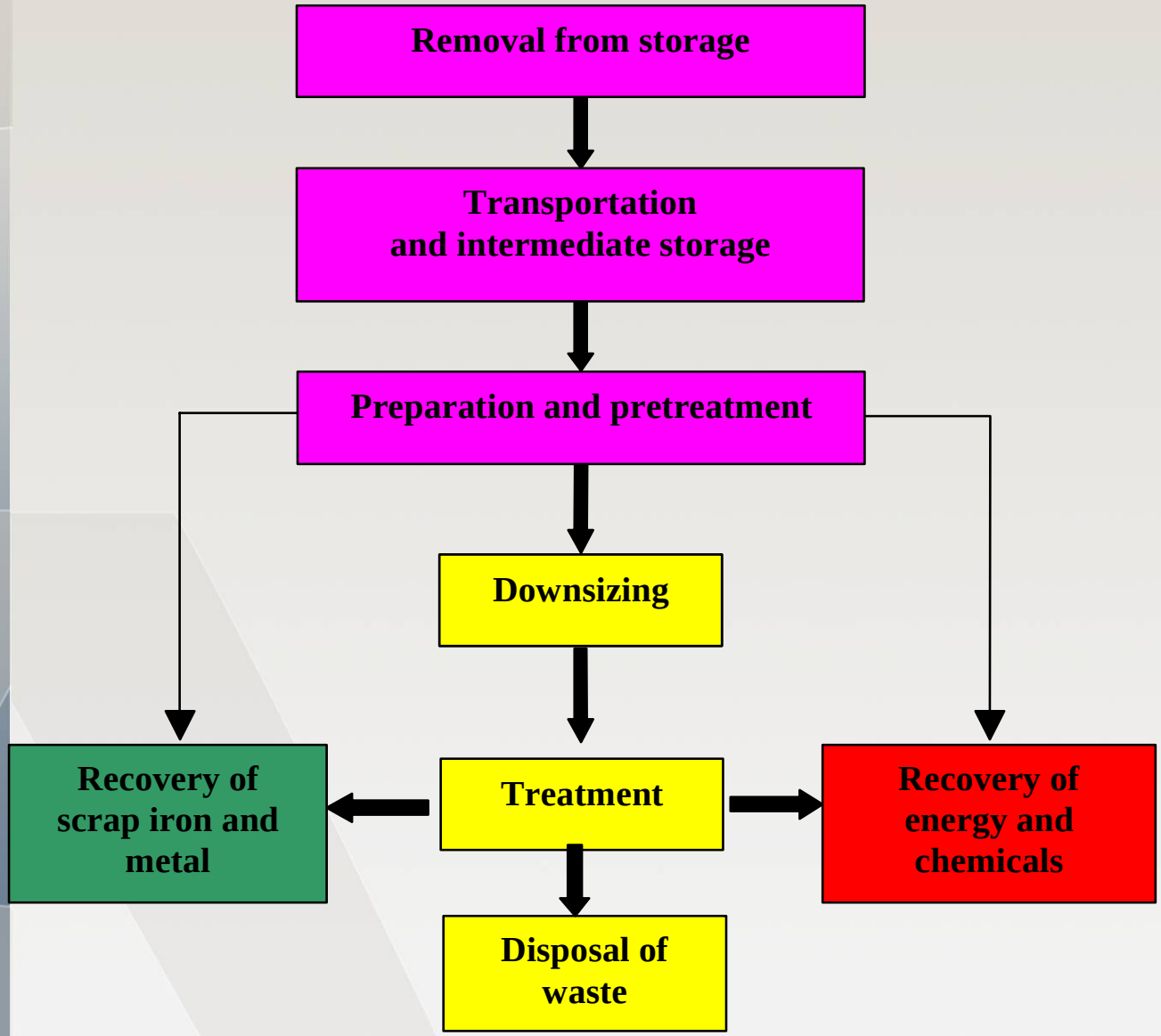
Agenda for ammunition stockpile disposal

- Excess stocks of military ammunition resulting from the ending of crises / conflicts
- Mines and UXO remaining from military activities
- Illegal use of explosives, e.g. IEDs
- Safety and security
- Pollution of the environment, e.g. by OB/OD
- Lack of capacity to deal with the problem

Principles of demilitarization and ammunition disposal



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Mobile ammunition disposal plant

Mobile incineration plant for hazardous waste, designed by NIRAS Chemcontrol

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Mobile ammunition disposal plant Design

- Overall layout in accordance to the logistic management of ammunition stocks
- Opening ammunition and extraction of explosive material
- Preparation of explosive/water mixture
- Incineration process in accordance to European criteria for incineration of hazardous waste (2 seconds at 1,100 C/2,012F)
- Energy recovery (heating / electricity)
- Flue-gas cleaning, removal NOx etc. in accordance to EU requirements
- Control system including mechanical safety measures

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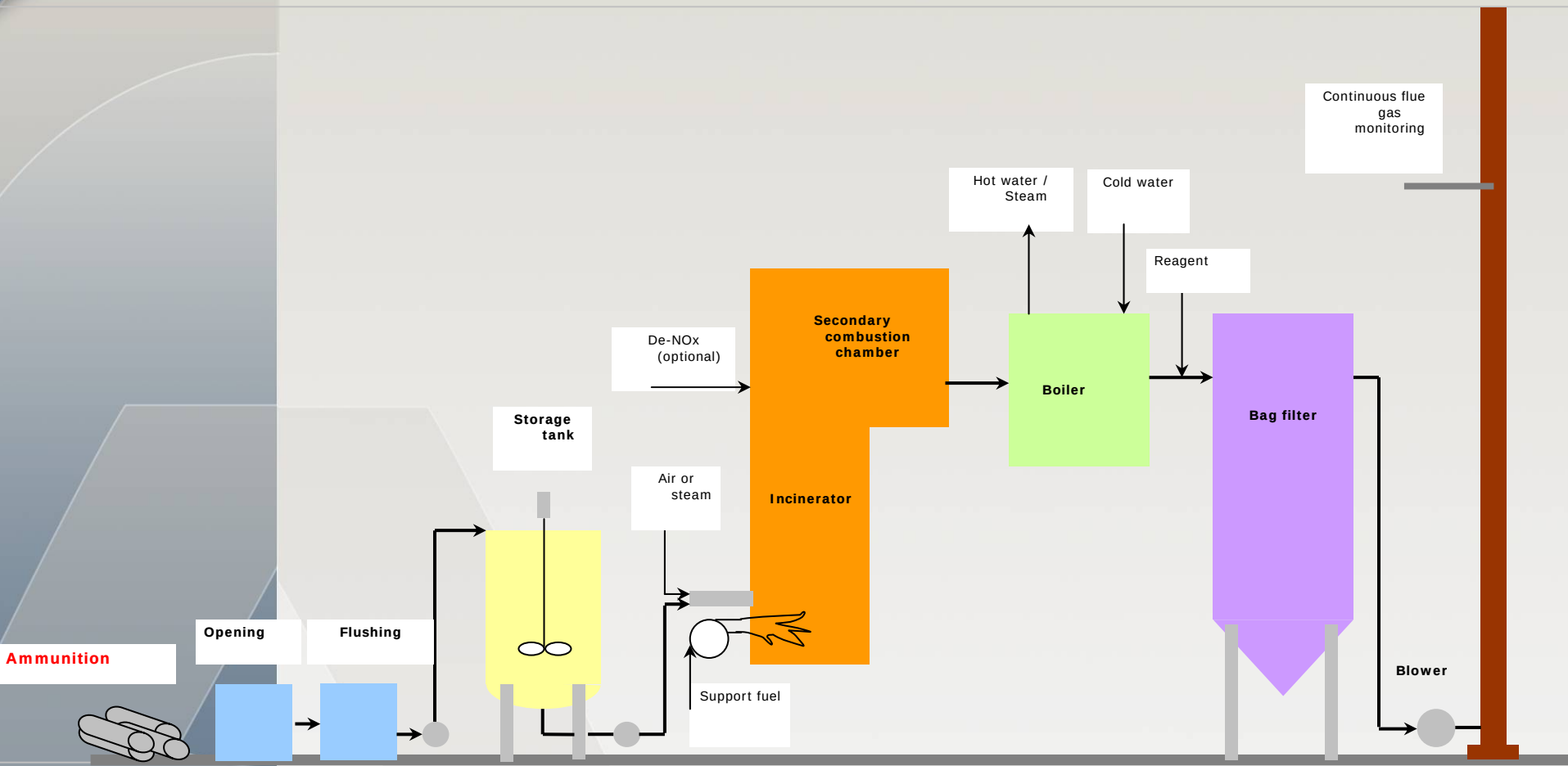
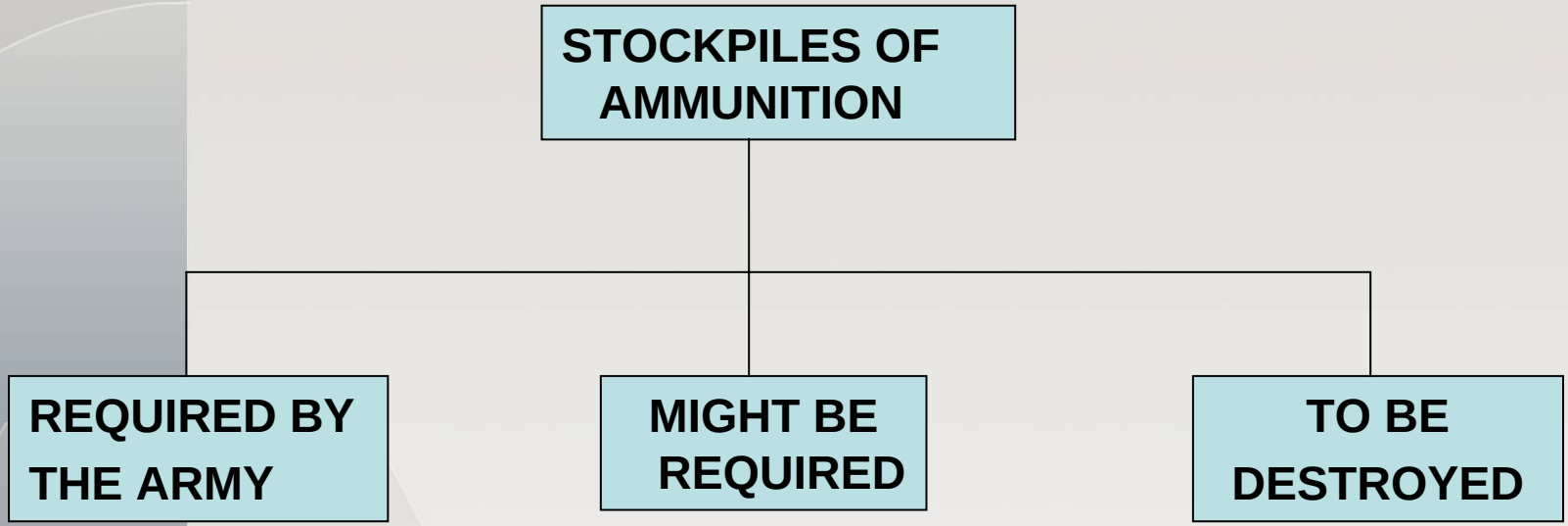
Mobile ammunition disposal plant
Planned Project



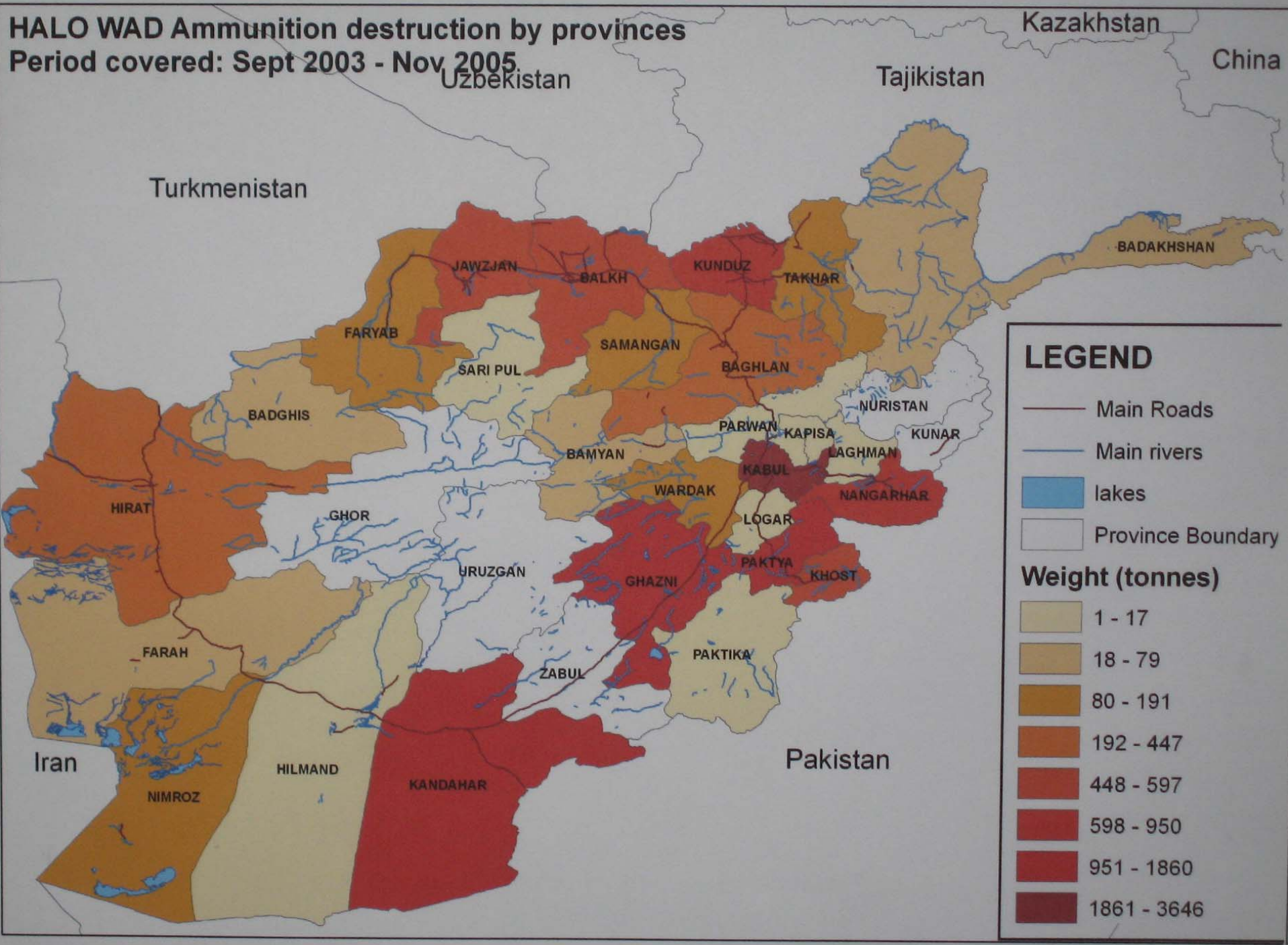
Ammunition stockpile destruction program in Afghanistan

- Status January 2006: 50,000 – 100,000 t total abandoned ammunition stocks to be handled
- Afghanistan New Beginning Program (ANBP)
- Demobilization, Demilitarization, Reintegration (DDR)
- Disbandment of Irregular Armed Groups (DIAG)
- Cooperation between UN, International Stability Forces (ISAF), NATO and Afghanistan Army
- Donors: US, EU and Canada and others

Ammunition stockpile destruction program in Afghanistan



- SAFE TO MOVE OR UNSAFE/DANGEROUS
- TRANSPORT TO TEMPORARY/PERMANENT AMMUNITION STORAGE POINT
- DESTRUCTION BY OB/OD OR INDUSTRIAL DEMILITARISATION


HALO WAD Ammunition destruction by provinces
Period covered: Sept 2003 - Nov 2005
Kazakhstan
China
Uzbekistan
Tajikistan
Turkmenistan
Iran
Pakistan
BADAKHSHAN
JAWZJAN
BALKH
KUNDUZ
TAKHAR
FARYAB
SAMANGAN
SARI PUL
BAGHLAN
BADGHIS
NURISTAN
PARWAN
KAPISA
KUNAR
BAMYAN
LAGHMAN
KABUL
WARDAK
NANGARHAR
HIRAT
GHOR
LOGAR
URUZGAN
PAKTYA
GHAZNI
KHOST
FARAH
PAKTIKA
ZABUL
HILMAND
KANDAHAR
NIMROZ
LEGEND
Main Roads
Main rivers
lakes
Province Boundary
Weight (tonnes)
1 - 17
18 - 79
80 - 191
192 - 447
448 - 597
598 - 950
951 - 1860
1861 - 3646

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New Strategy

- Change of disposal methods
- Stop OB/OD as disposal routines
- Industrial DEMIL in accordance to the Best Available Technologies Not Entailing Excessive Cost (BATNEC)
- Organizing collection and sale of scrap metal (NB!)
- Education
- Information
- Training
- Capacity building

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Summary and conclusions

- Stockpiles of ammunitions in post-war must be handled in a quick, safe and environmental acceptable manner
- Technologies for industrial demilitarization of ammunition are available
- Information, education and training is mandatory
- Donors must encourage all stakeholders, incl. NGO´s, contractors, local army, local authorities to optimize the demilitarization processes
- Demilitarization of ammunition must be prioritized in post-war reconstruction

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Thank you for your attention!

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