Land release

Purpose, Principles and Practice

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Efficiency in Mine Action?

☐ In the Past:

- Clearing all areas right

- But often clearing the wrong areas

☐ To increase efficiency:

- Clearing the right areas!

Need for change?

- **Mine action resources are scarce**
  - Mismatch between resources and the problem
  - The problem – therefore rated as long term

- **Large mine free areas cleared - Why?**
  - Operator conservatism – better stick to what we know
  - Faulty operator decision making mechanisms
  - Fear of liability

- **Limited donor pressure**
  - Flawed education of donors (by Mine Action Industry)
  - Flawed (in part) indicators of efficiency
  - Fear of liability

- **Also: we regularly inflate the mine problem**
  - Faulty survey processes and concepts

The challenge

Stop: inflating the landmine problem

Start: releasing land more efficiently

The challenge

Stop: Inflating the landmine problem
- Improve survey methodology
- Improve training of survey teams
- Define the requirements for survey

Start: Releasing land more efficiently
- Develop methodology that facilitates more appropriate land release decision making at all levels
- Release more land by **survey**

APMBC 9th SP meeting

or other explosive hazards and did not or do not require clearance. Three main actions can be undertaken to release land that has been identified and reported as "mined areas" as defined by the Convention:

(i)   Land can be released through non-technical means, such as systematic community liaison, field based data gathering and improved procedures for cross-referencing data and updating databases.

(ii) Land can be released through technical survey, that is, through a detailed topographical and technical investigation of an area to more precisely identify a smaller area requiring clearance, thus enabling the release of the balance of the area investigated.

(iii) Land can be released through clearance, that is, physically and systematically processing an area manually or with machines to a specified depth in accordance with existing best practices to ensure the removal and destruction of all mines and other explosive hazards.

Purpose of land release

☐ Enable clearance of the right areas

- ☐ Provide a framework for more appropriate decision making about where to use demining resources
- ☐ Enable release of land by other efforts than clearance

☐ Prevent future inflation of the problem

- ☐ Encourage more accurate prediction of real mined areas (improved survey process)

Land Release

☐ Mainly an effort to encourage more efficient use of resources at field levels

☐ Methodology is more applicable in some countries while less applicable in others

☐ More applicable to some organisations than others

Definition of land release

☐ The term **"Land Release"** describes the process of applying all reasonable effort to remove a claim of mines through survey and/or clearance

☐ Land can be released when:

- A sufficiently detailed and reliable process has been applied
- Result: high confidence there is <u>no evidence of mines</u> in an area

☐ Land release – evidence based rejection of suspicion
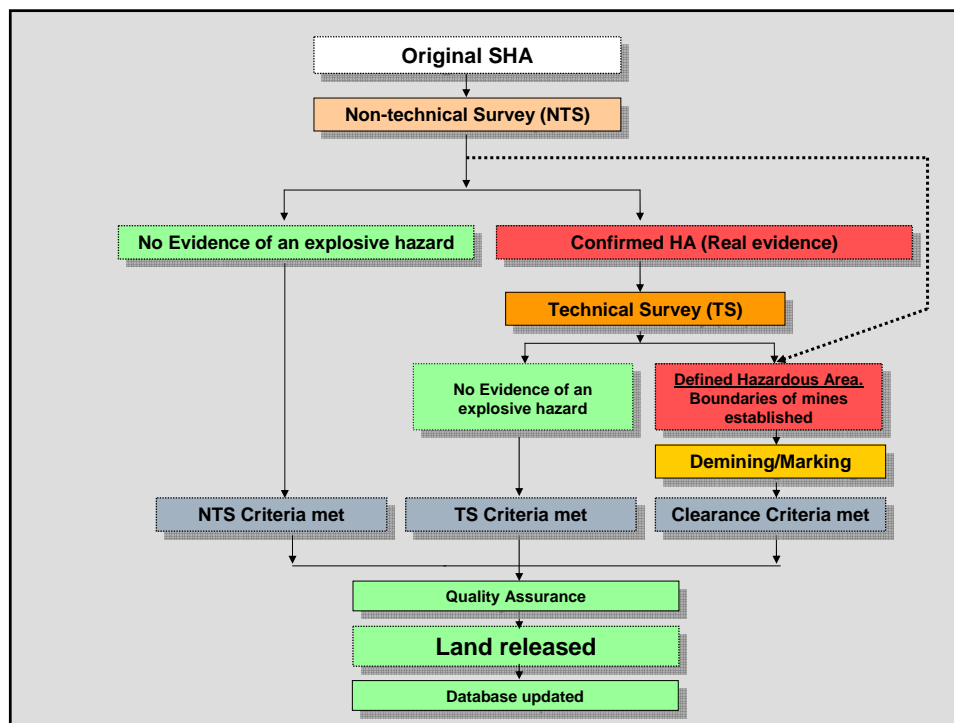
Principles of LR

☐ A suspicion (or claim) of mines can be rejected by:

☐ Conducting non-technical survey
☐ Conducting technical survey
☐ Conducting full clearance

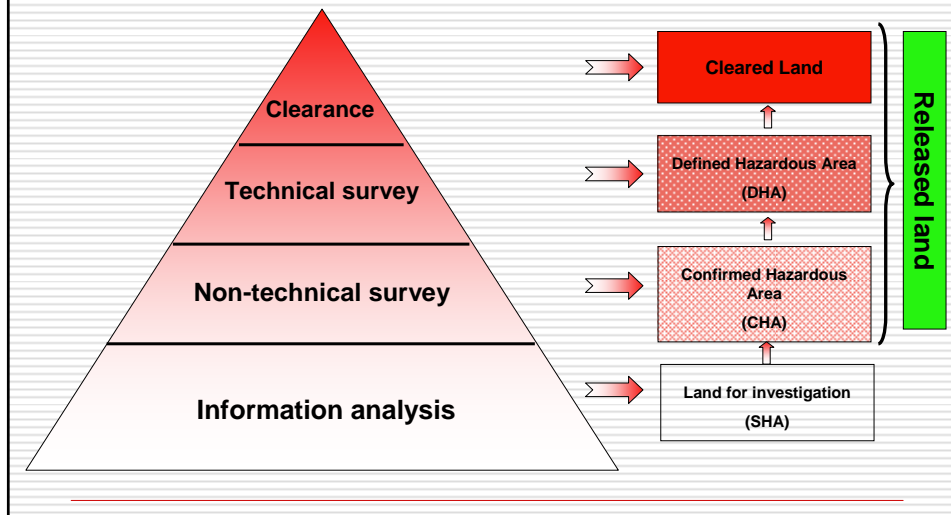- <u>Aim:</u> Same high confidence in all released land

IMAS – land Release

- **3 Draft IMAS being developed:**
  - ☐ 08.20 Land release
  - ☐ 08.21 Non-technical survey
  - ☐ 08.22 Technical survey
- **Inclusive process involving most operators and organisations**
- **The final draft version to be distributed to the IMAS review board this month**
- **A short process before final endorsement**
- **Guidance to national Authorities and organisations**

```
                    Original SHA
                         │
              Non-technical Survey (NTS)
                         │
        ┌────────────────┴────────────────┐
  No Evidence of an explosive       Confirmed HA (Real evidence)
           hazard                            │
           │                      Technical Survey (TS)
           │                              │
           │                  ┌───────────┴───────────┐
           │          No Evidence of an      Defined Hazardous Area.
           │          explosive hazard       Boundaries of mines
           │                  │              established
           │                  │                     │
           │                  │              Demining/Marking
           │                  │                     │
    NTS Criteria met    TS Criteria met    Clearance Criteria met
           └────────────────┬────────────────┘
                    Quality Assurance
                         │
                    Land released
                         │
                    Database updated
```

The Land Release Process

Non-technical Survey

- ☐ Def: a survey activity which involves collecting and analysing new and extant information on specific SHA
- ☐ Aim: identify the actual SHA or release all, or parts of, a SHA *without* physical intervention.
- ☐ NTS does not involve the use of clearance or verification assets.

Non-technical Survey

- Purpose
  - **Either:** Identify previously suspected land that can be released as a result of applying a non-technical survey
  - **Or:** Identify new HA from new claims
  - **In both cases:**
    - Assist priority setting
    - Identify the requirement for technical survey
    - Identify the requirement for full clearance if possible
    - Identify the requirement for marking/MRE

Technical survey

- Detailed technical intervention by using clearance or verification assets in a SHA

- Although clearance assets are used, they are used for the purpose of collecting information

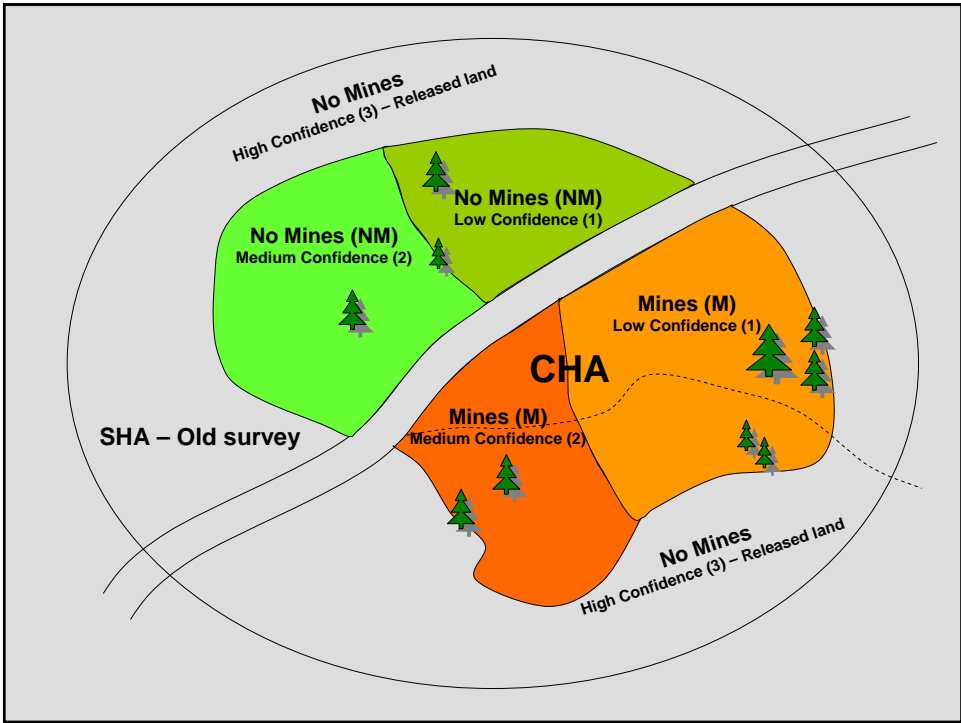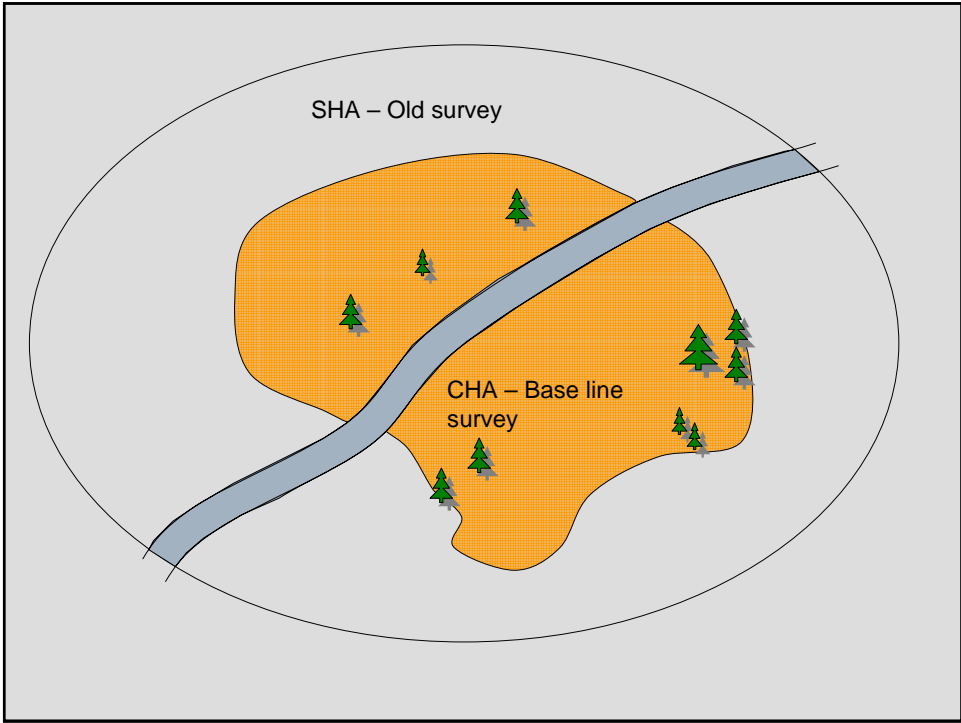- Some assets may be poor clearance tools while good technical survey tools e.g. Flail

Technical survey?

- *Nothing new* - "we have done technical survey for many years"

- *Well understood* - "What is the point of making something simple and straight forward more complex than it needs to be?"

Technical Survey not new but:

- The methods of TS can be improved
    - Scope for significant improvement in efficiency
    - More land can be released by TS
    - Can more precisely define the boundaries of real mined areas

- What then is clearance?
    - Only applied in areas where the real boundaries have been clearly defined
    - Anything else is survey

SHA – Old survey

CHA – Base line survey

No Mines
High Confidence (3) – Released land

No Mines (NM)
Low Confidence (1)

No Mines (NM)
Medium Confidence (2)

Mines (M)
Low Confidence (1)

CHA

Mines (M)
Medium Confidence (2)

SHA – Old survey

No Mines
High Confidence (3) – Released land

No mines 3 (NM-3)	Very Low	☐ Land release
No mines 2 (NM-2)	Low	☐ **Limited technical survey:** Used when the Non-technical survey classifies a sector as "No mines – 2". The lightest form of Technical survey, typically used to confirm that there are no mines in a sector
No mines1 (NM-1)	Medium	☐ **Normal technical survey:** Used when the Non-technical survey classifies an area as "No mines – 1". A more detailed technical survey process where the purpose is to increase the confidence in a general survey. Typically applied when the level of information is clearly insufficient or when the confidence in the information that the area is free from mines is low
Mines 1 (M-1)	Medium to high	☐ **Increased technical survey:** Used when the Non-technical survey classifies an area as "Mines – 1". Increased use of demining assets to confirm the presence of landmines when the level of information is clearly insufficient or when the confidence in the information is low
Mines 2 (M-2)	High	☐ **Extensive technical survey:** Used when the Non-technical survey classifies an area as "Mines – 2". A considerable amount of demining assets used in areas where general survey information suggests that there are mines but the information is insufficient or not fully reliable or the boundaries have been difficult to reliably define. Although clearance may be undertaken, the process is to be considered an information gathering process
Mines 3 (M-3)	Very high	☐ Full clearance with buffer zone

Techniques	Agreed capabilities	Value as survey tools (confidence)
Manual mine clearance	• Is considered full clearance	Very High confidence
MDD, one dog	• Very reliable clearance tool • One dog detects almost 100% of all mines • Two dogs required for full clearance	High confidence
Flail (including visual inspection and recording of detonations)	• Will miss out mortars/UXO/POMZ • Destroys/detonates 95% of all mines • Detonates 80% of all mines • Re-flails approx 75% of potentially missed mines • Almost 100% of missed mines will be visible on the ground	High/Medium confidence
Large loop	• Will detect POMZ/OZM/UXO • Will detect large percentage of AT mines • Will miss normal AP blast mines	Medium confidence
Tiller	• Will miss out mortars/UXO/POMZ • Destroys/detonates 95% of all mines • Detonates 50% of all mines • 50% of missed mines will be visible on the ground	Medium confidence
Flail and large loop	See above	High confidence
Tiller and large loop	See above	High/Medium confidence

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Required technical survey	Clearance approach	Limited (NM 2)	Normal (NM 1)	Increased (M 1)	Extensive (M 2)
Manual mine clearance (Very high confidence in tool)	Targeted investigation	20%	30%	40%	50%
	Random investigation	30%	40%	50%	60%
Dogs after Roller (High confidence in tool)	Targeted investigation	30%	40%	50%	60%
	Random investigation	40%	50%	60%	70%
Flail and large loop (High confidence in tool)	Targeted investigation	30%	40%	50%	60%
	Random investigation	40%	50%	60%	70%
Flail (High/medium confidence in tool)	Targeted investigation	40%	50%	60%	70%
	Random investigation	50%	60%	70%	80%
Dogs (High/medium confidence in tool)	Targeted investigation	40%	50%	60%	70%
	Random investigation	50%	60%	70%	80%
Large loop after Roller (Medium confidence - SHA) High/medium confidence – road)	Targeted investigation	50%	60%	70%	80%
	Random investigation	60%	70%	80%	90%
Roller (Medium/low confidence in tool)	Targeted investigation	60%	70%	-	-
	Random investigation	70%	80%	-	-

Conclusions

- ☐ An improved methodology for releasing land has the potential to significantly increase efficiency
- ☐ This will better ensure that mine clearance resources are used on mined areas
- ☐ Efficient release of land is mainly a question of efficient decision making processes
- ☐ Land release by survey **should** be encouraged by state parties and does not contradict the treaty
- ☐ IMAS on land release will soon be available to provide guidance to authorities and organisations
- ☐ The responsibility for the implementation of efficient land release lies with authorities, organisations and donors

Thank you

Technical Survey Dogs