ARMAC REGIONAL WORKSHOP

"Enhance mine action knowledge and promote future platforms for mine action knowledge sharing for ASEAN Member States"

12-14 November 2018, Siem Reap, Cambodia
Borei Angkor Resort and Spa

CMAC Land Release Application

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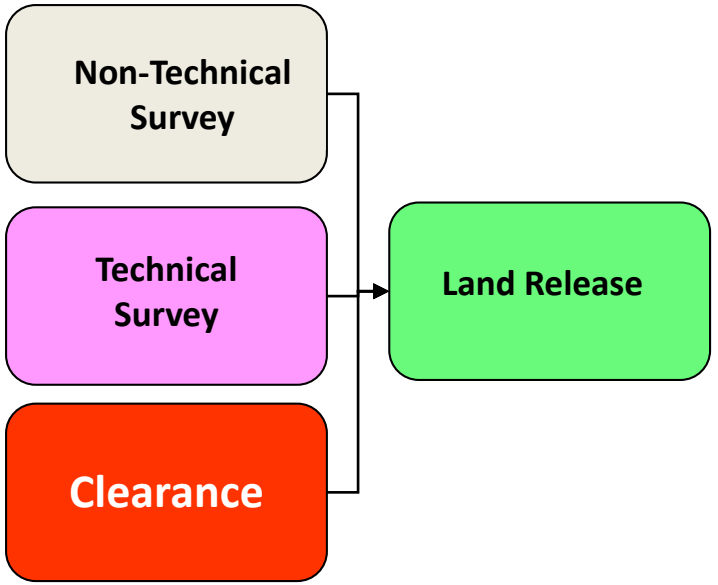
BACKGROUND

- Level 1 Survey(Impact Survey) in 2002
  - Many portions do not contain anti-personnel mines or other explosive hazards and did not or do not require clearance
  - rapid internal migration of the population causes dramatic impact on the settlement and use of land in particular in the northwest provinces.
- In May 2006, Area Reduction Policy was adopted
  - Recognize previously suspected land which had been returned to productive use without current evidence of threat by reclassifying them in the national database as reclaimed land.
  - Enable reclassification of land into end-state without using clearance resources
- CMAS-15 (October 2014) provides guidance on the overall land release policy and supersedes the 2006 Area Reduction Policy.

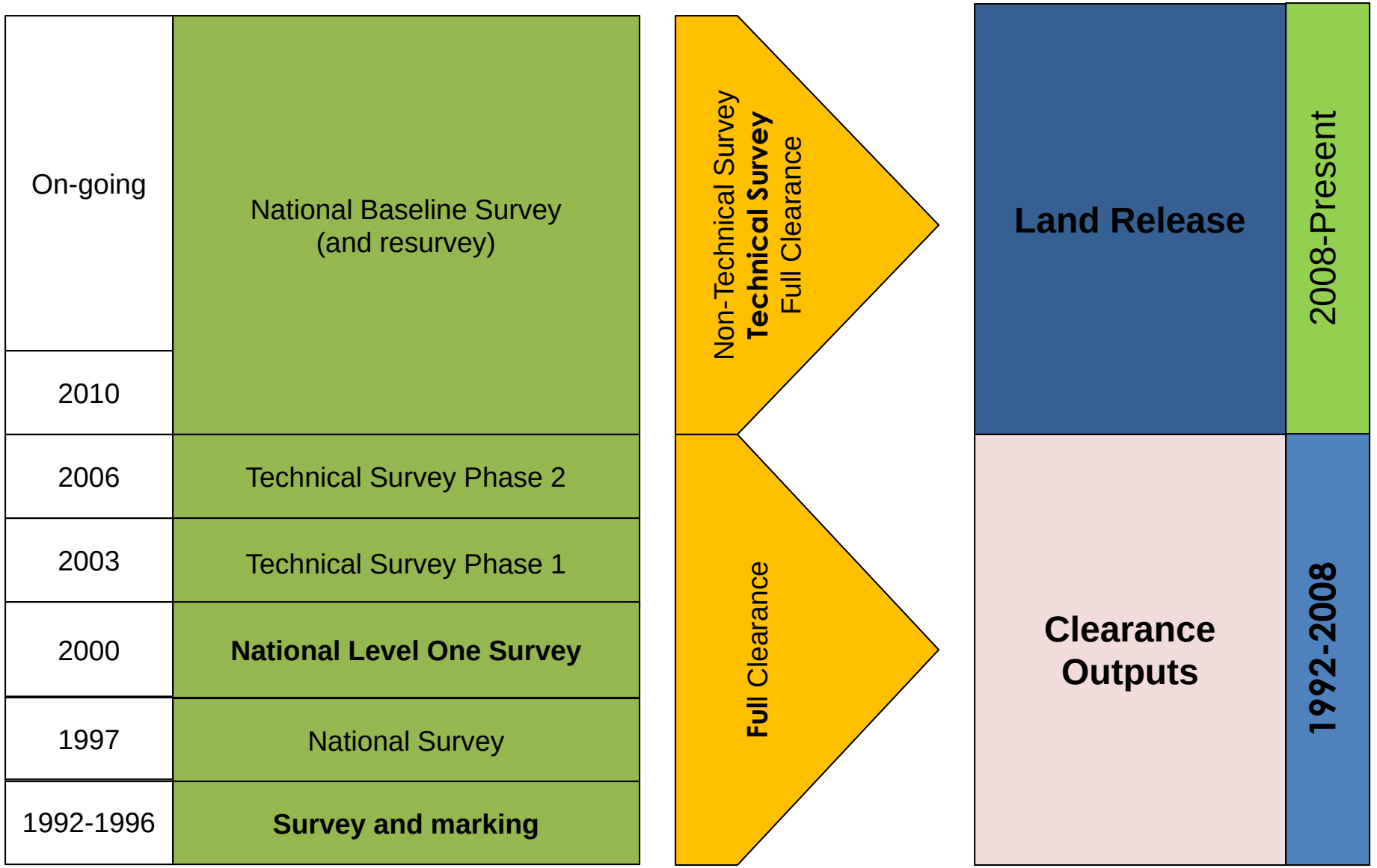
CMAC LAND RELEASE

- 2008 CMAC developed Land Release Protocol in partnership with NPA and GICHD, which includes:

1. Non-Technical Survey SOP and
2. Technical Survey SOP based on CMAC's technical Survey experience and Area Reduction SOP's



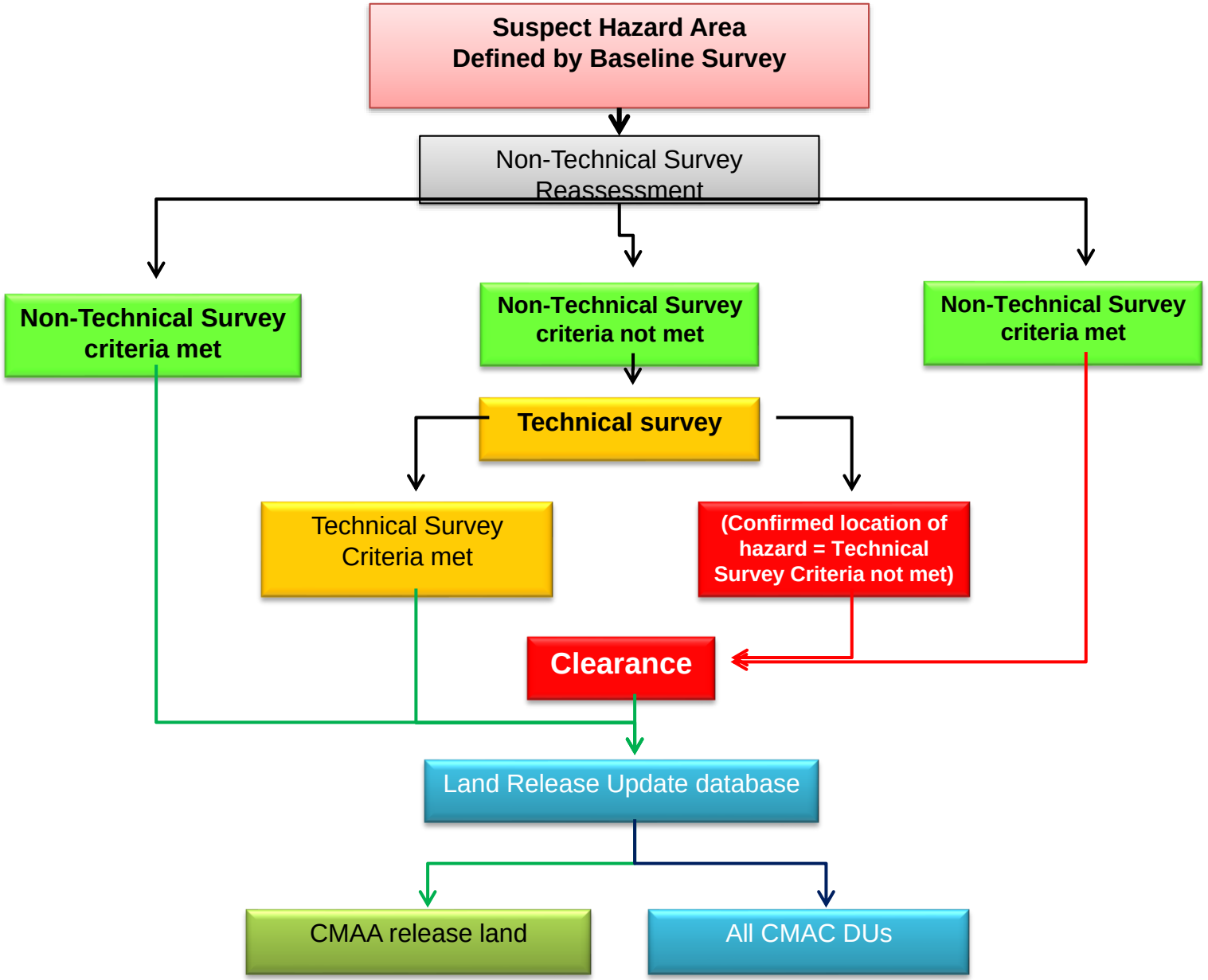
CMAC LAND RELEASE



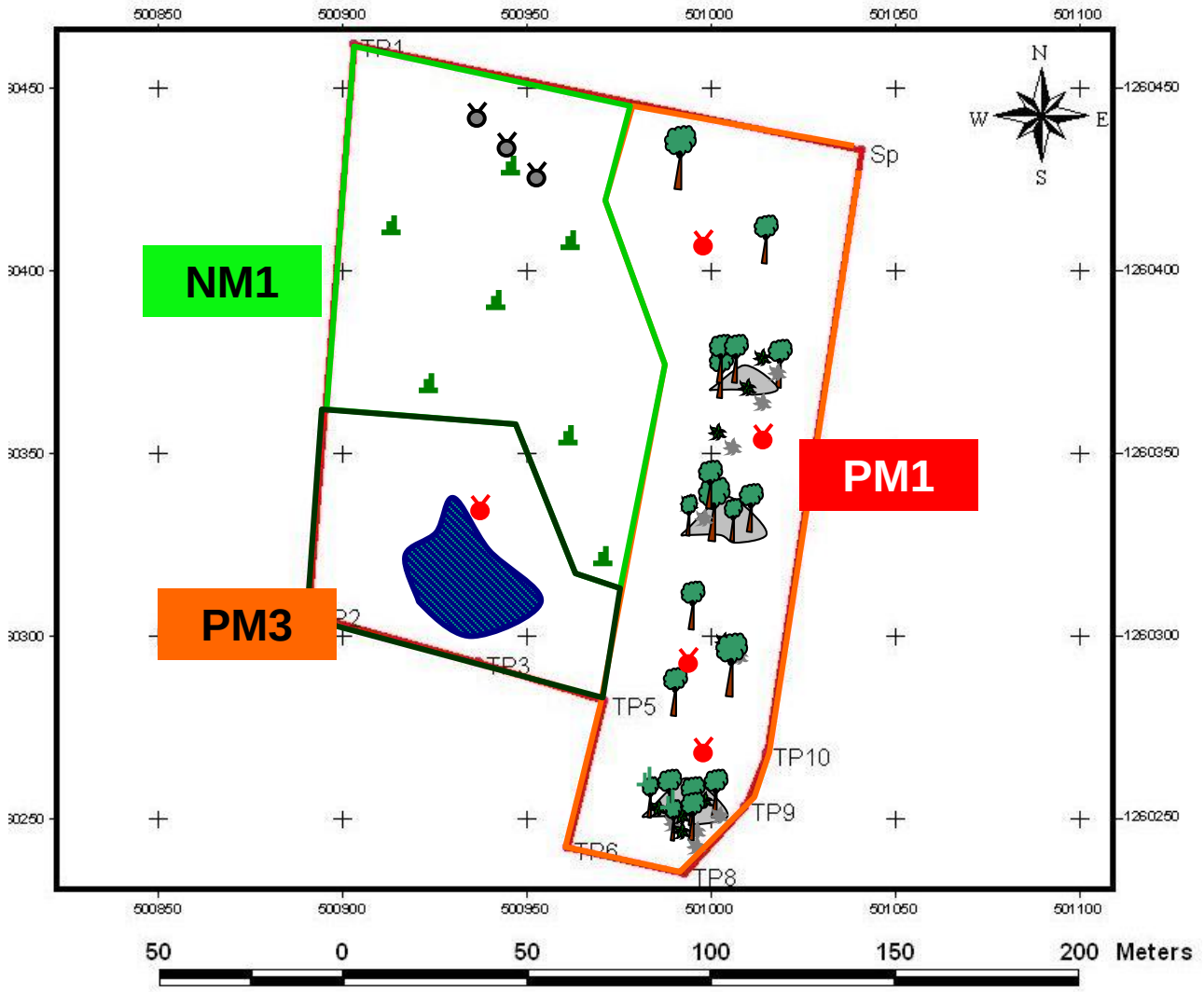
CMAC Classification of Risk Level by NTS

NM1	No Mine 1	Very low probability of mine/ERW
NM2	No Mine 2	Low probability of mine/ERW
NM3	No Mine 3	Medium probability of mine/ERW
PM3	Presence Mine 3	Medium to high probability of mine/ERW
PM2	Presence Mine 2	High probability of mine/
PM1	Presence Mine 1	Very high probability of mine/

CMAC Land Release Process



Reassessment of BLS Polygons by NTS



Version 0.3.2

CMAC NTS Form

			Sector 1				Sector 2				Sector 3				Sector 4			
			Mines		No Mines		Mines		No Mines		Mines		No Mines		Mines		No Mines	
		How many?	H	L	L	H	H	L	L	H	H	L	L	H	H	L	L	H
1. External/historical Evidence																		
1.1 Evidence provided by military/militia/police			0	0	0	0	1	1	0	0	0	1	1	0	2	1	0	0
Combatant (former or existing) part of laying mines in specific SHA:	Group of combatants														Y			
	One combatant only						Y											
Combatant (former or existing) part of laying mines in the area	Group of combatants											Y						
	One combatant only							Y								Y		
Combatant (former or existing) not part of laying mines in SHA but has reliable/detailed knowledge	Group of combatants													Y				
	One combatant only																	
Mine maps/records from military or police															Y			
All mines reported cleared by military/local initiatives																		
1.2 Evidence provided by other key informants			0	0	0	0	0	0	4	0	0	0	4	1	5	2	0	0
Local authority representative (village/commune/district)									Y				Y		Y			
Group of civilians/villagers who observed that mines were laid in area																Y		
One civilian/villager who observed that mines were laid in area													Y					
Group of civilians/villagers living in the area during period of mining																		
One civilian/villager living in the area during period of mining															Y			
Group of civilians/villagers, moved to area after period of mining									Y									
One civilian/villager, moved to area after period of mining													Y		Y	Y		
Scrap metal collector working in the area									Y					Y				
CBMRR															Y			
Landmine victim or family of victim, accident in area																		
Neighbour with good knowledge about mines in the area																		
Land owner									Y				Y		Y			
2. Physical evidence of mines and other observations			0	0	0	0	0	1	0	0	0	0	0	1	1	2	0	0
Mines scenario: Visible skeletons (human/animal)																		
Mines scenario: Visible craters																Y		
Mines scenario: Visible trench lines								Y										
Mines scenario: Visible past warfare (combat area)																		
Mines scenario: Visible minefield marking (local or official)																		
Mine Accident/Mine has been found - Information older than 8 years																Y		
Mine Accident/Mine has been found - Information between 3 and 8 years																		
Mine Accident/Mine has been found - Information newer than 3 years																Y		
Detonations occurred during burning																		
No accidents reported														Y				
Past spot tasks by CMAC or other clearance agency																		
Roads: Destroyed bridges															Y			
Roads: Typical ambush areas																		
3. Evidence from the way people use of land			0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
Entire sector used extensively by local population (Plowing/exavation/cultivation by hand):	One season (cultivation and harvesting)								Y									
	Two seasons (cultivation and harvesting)																	
	Three or more seasons (cultivation and harvesting)																	
Entire sector used extensively by local population (Manual cultivation - soil picking):	One season (cultivation and harvesting)																	
	Two seasons (cultivation and harvesting)																	
	Three or more seasons (cultivation and harvesting)																	
Entire sector used regularly by local population (grazing, forestry)	1 - 6 months																	
	6 - 12 months																	
	More than 12 months																	
Entire sector used occasionally by local population (hunting, food and wood gathering etc) :	3 - 12 months																	
	12 - 24 months																	
	More than 24 months													Y				
Sector used extensively (vehicles, trucks):	3 - 12 months																	
	More than 12 months																	
Sector used moderately (vehicles, trucks):	3 - 12 months																	
	More than 12 months																	
Sector used (motorbikes, bikes) - n/a																		
4. Overall assessment of type of evidence (if mines are reported in this sector)			0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
The entire sector (part of SHA) is very likely to be mined								Y								Y		
Only parts of the sector are likely to be mined																		
Mines likely to be in pattern																		
5. Previous sector evidence.																		
Is this sector related to previous sector (Yes / No):																		
Mines found in previous sector (Yes / No):								Y										
If Mines found in previous sector, were they a surprising find (Yes / No):																		
Preliminary conclusion			No Mines				Mines				No Mines				Mines			
Confidence			Low				Medium				Medium				High			
Proposed action		NM1																
		NM2										Limited Tech. Survey						
		NM3	Normal Tech. Survey															
		PM3																
		PM2					Extensive Tech. Survey											
		PM1													Clearance			

Y
N

2

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LEVEL OF TS AND INSPECTION GUIDELINES

Technical Survey Asset	Survey Methodology	Limited TS NM2	Normal TS NM3	Increased TS PM3	Extensive TS PM2
Brush cutter (plus attached manual asset)	Targeted Investigation	15%	25%	35%	45%
	Systematic Investigation	25%	35%	45%	55%
Manual Mine Clearance (Shallow and Deep search)	Targeted Investigation	20%	30%	40%	50%
	Systematic Investigation	30%	40%	50%	60%
Mine Detection Dog (Single Dog Search)	Targeted Investigation	40%	50%	60%	70%
	Systematic Investigation	50%	60%	70%	80%
Explosive Detection Dog	Targeted Investigation	40%	50%	60%	70%
	Systematic Investigation	50%	60%	70%	80%
Push-type Flail	Targeted Investigation	50%	60%	70%	80%
	Systematic Investigation	60%	70%	80%	90%
Swing-type Flail	Targeted Investigation	50%	60%	70%	80%
	Systematic Investigation	60%	70%	80%	90%
Tiller	Targeted Investigation	60%	70%	80%	90%
	Systematic Investigation	70%	80%	90%	100%

CMAC Technical Survey Tools

Manual: (MP-CMC-TSC)
(sampling, breaching lanes, systematic inspection, QA/QC)

MDD/EDD
(Collecting evidence)

Brush Cutter
(Collecting evidence)

Demining Machine
(Collecting evidence)

Deep search detector
(used to follow other tools)

CMAC Technical Survey Methodology

- CMAC implements four technical survey inspection methods:
  1. Targeted Inspection
  2. Systematic Investigation
  3. Full Coverage Inspection
  4. Visual Inspection

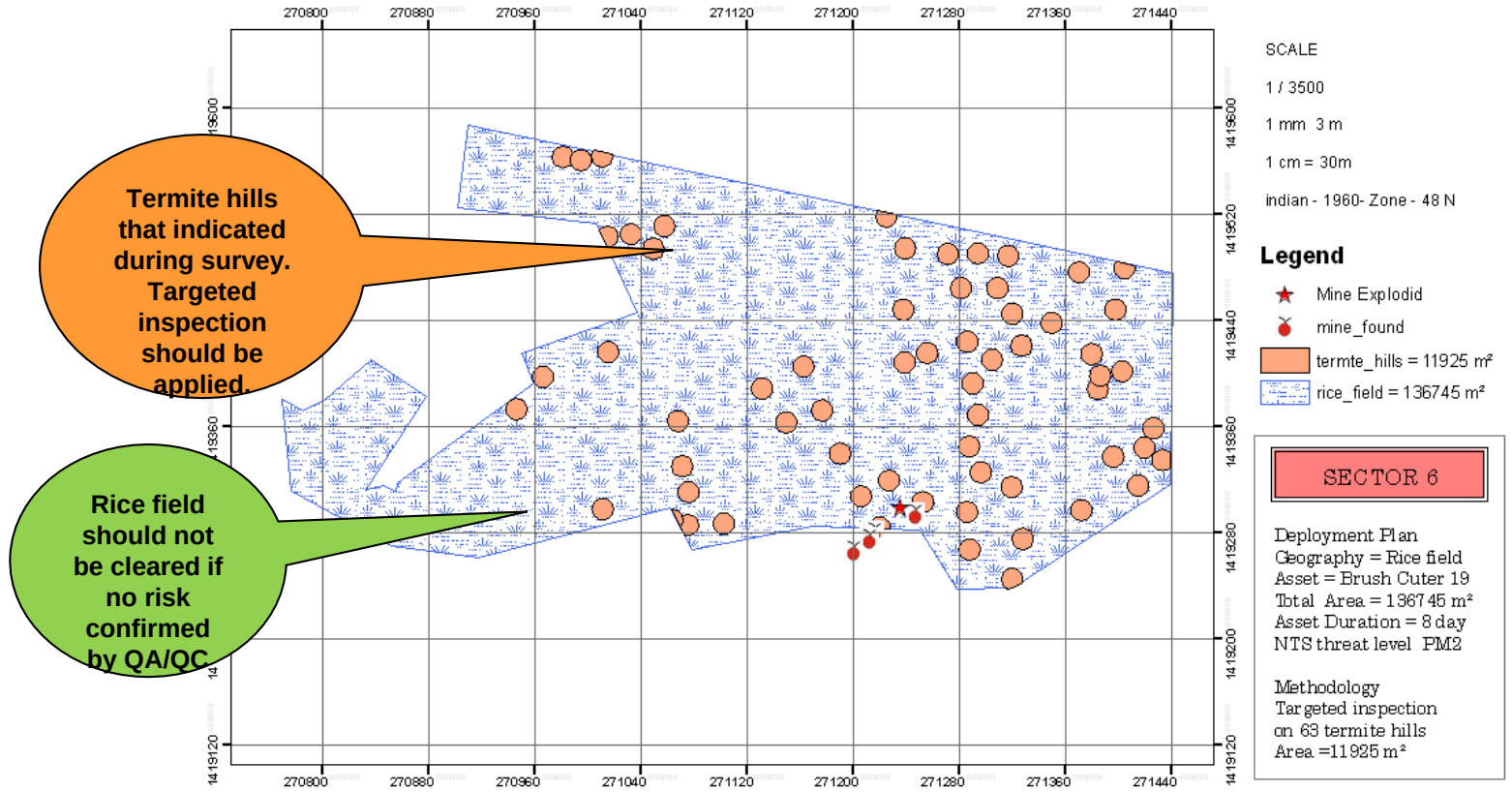
CMAC Technical Survey Methodology (cont.)

Targeted Inspection

- For easily-defined areas in a sector of the SHA that are more likely to contain mines/ERW if they are present.
- These areas may be geographic (e.g. road, trench line, pond, termite hills, etc) or may be determined from the NTS (e.g. accident sites, areas where the farmer removed mines, areas where mine parts are seen).

CMAC Technical Survey Methodology (cont.)

Targeted Inspection



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CMAC Technical Survey Methodology (cont.)

Targeted Inspection

CMAC Technical Survey Methodology (cont.)

Targeted Inspection

CMAC Technical Survey Methodology (cont.)

Targeted Inspection

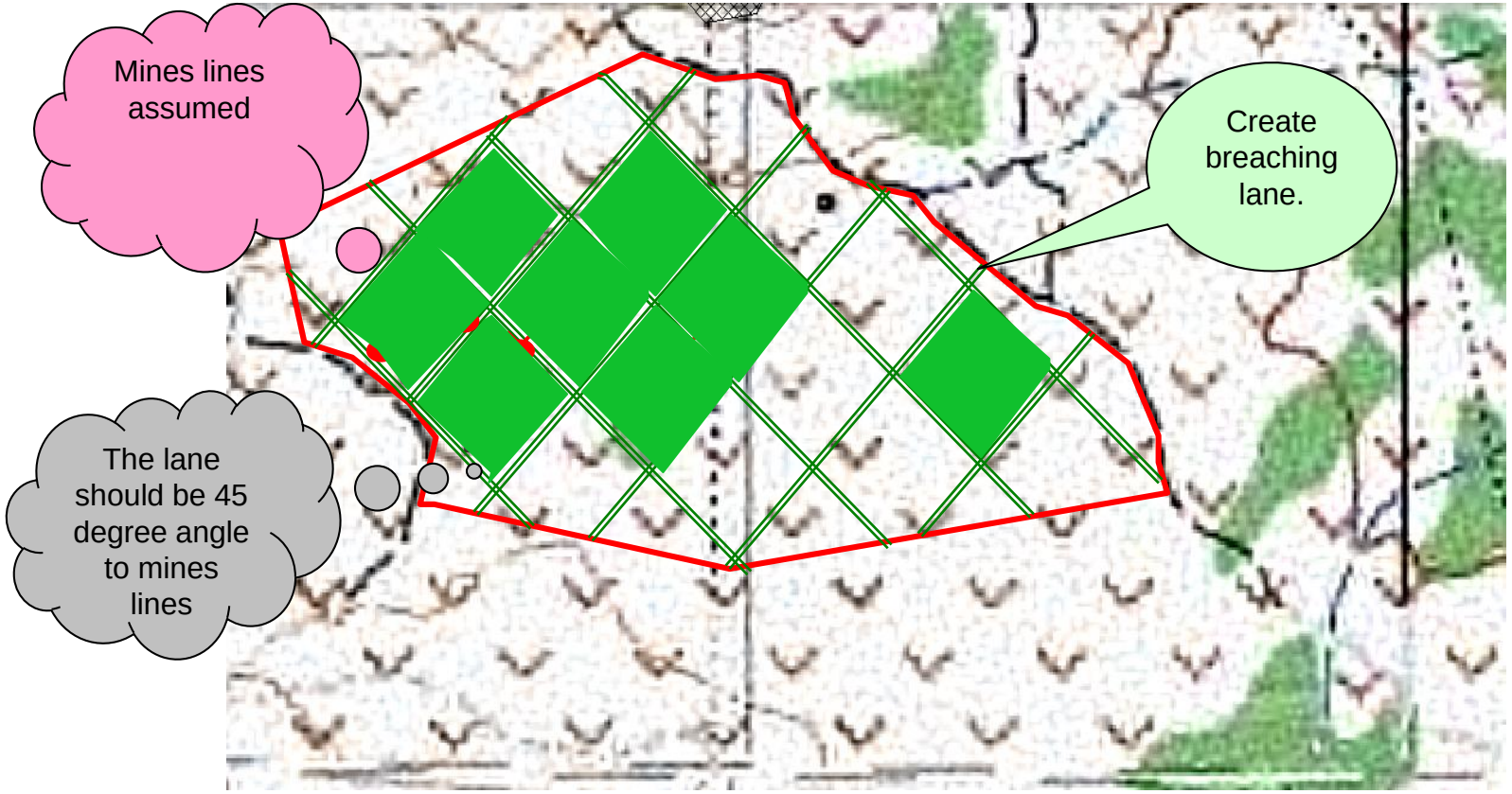
Mine line laid along footpath

CMAC Technical Survey Methodology (cont.)

Systematic Investigation

- Used when there are no obvious areas to target the search for evidence. When this is the case the search requirement is systematically spread over the whole sector.
- If evidence of mines/ERW is located in an area of the sector then the search should be further focused on this area. If no evidence of mines/ERW is found then this may allow the sector to be released.

CMAC Technical Survey Methodology (cont.)



CMAC Technical Survey Methodology (cont.)

Full Coverage Inspection

- **Full coverage inspection** is carrying out by using Large Loop Detector(deep search)
- Full Coverage Inspection is applicable to **A4** (scattered AP) in general where the areas are relatively small and information is limited
  1. Also applicable for **A1** areas where there is evidence of ERW, and
  2. for **A2** areas, where the areas that have been ploughed by cattle/light tractors or by heavy tractors less than **3** times.

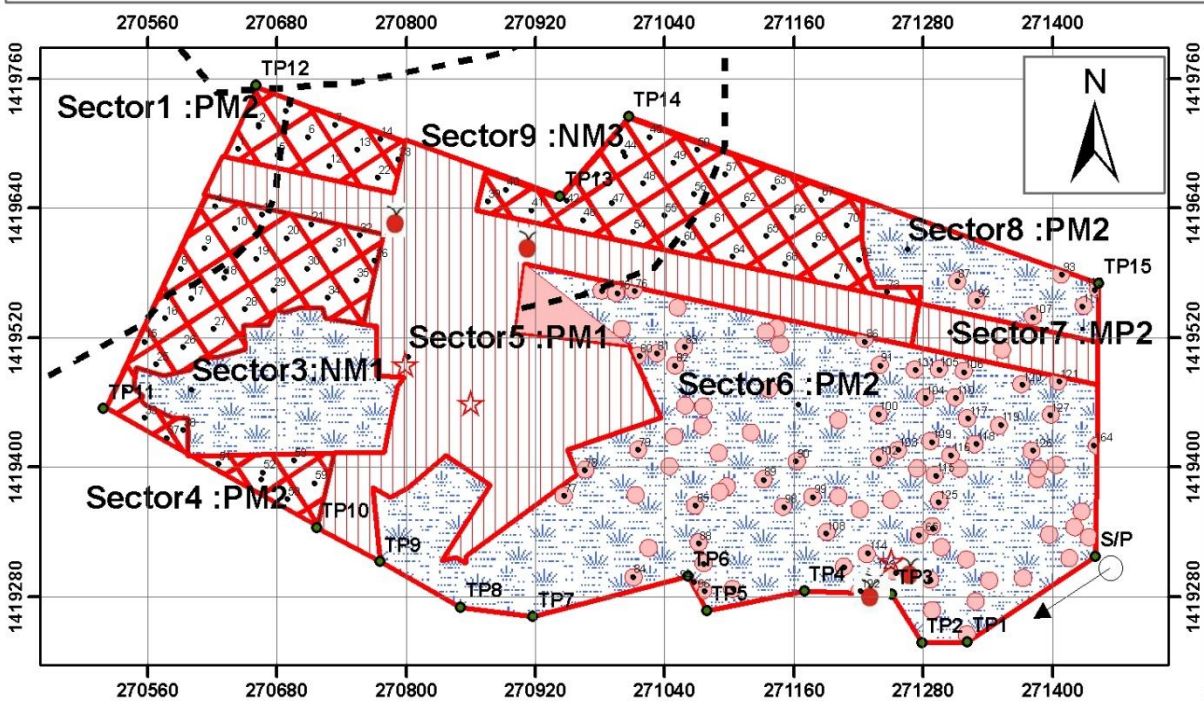
CMAC Technical Survey Methodology (cont.)

Visual Inspection

- **Carried out in the SHA after the use of TS asset (i.e. Flail) to gain further evidence of mines/ERW present.**

LAND RELEASE DEPLOYMENT PLAN BS/CMAA 10473

PHCHAV VILLAGE , TRENG COMMUNE



SCALE : 1/6000

1mm- 6 m. 1cm = 60 m

INDIAN 1960. UTM.ZONE 48N

Legend

- START POINT
- EXPLOSION PLACE
- MINE FOUND
- Access Road
- Bresching_Lane
- Targeted inspection
- Sector 1: = 9453 m²
- Sector 2 : 25125 m²
- Sector3 : 22915 m²
- Sector 4 : 4633 m²
- Sector 5 : 77374 m²
- Sector6 : 136745 m²
- Sector 7 : 6906 m²
- Sector 8 : 14551 m²
- Sector 9 : 29785 m²

SECTOR 9

SAMMARY

Geography: Bush
Tool:Platoon135
Total Area: 29785 m²
Operational Period: 8 days
Threat Level: NM3
Method: Systematic
Percentage: 35% = 10424 m²
Breaching Lane: 7698 m²
Box Clearance: 2726 m²

Date : ...../...../.....

Prepare By :

Name : .....

Position : .....

SECTOR 1

SAMMARY

Geography: Bush
Tool:Platoon135
Total Area: 9453 m²
Operational Period: 4 days
Threat Level: PM2
Method: Systematic
Percentage: 55% = 5199 m²
Breaching Lane: 2755 m²
Box Clearance: 2444 m²

SECTOR 2

SAMMARY

Geography: Bush
Tool:Platoon135
Total Area: 25125 m²
Operational Period: 11days
Threat Level: PM2
Method: Systematic
Percentage: 55% = 13818 m²
Breaching Lane: 8777 m²
Box Clearance: 5041 m²

SECTOR 3

SAMMARY

Geography: rice field
Tool: QA/QC Team
Total Area: 22915 m²
Operational Period:1days
Threat Level: NM1
Method:
1. Review Report
2. Field Monitering
3. QC

SECTOR 4

SAMMARY

Geography: Bush
Tool:Platoon135
Total Area: 4633 m²
Operational Period:2days
Threat Level: PM2
Method: Systematic
Percenaget: 55% = 2547 m²
Breaching Lane: 1435 m²
Box Clearance: 1113 m²

SECTOR 5

SAMMARY

Geography: Bush
Tool: BC # 19
Total Area: 77374 m²
Operational Period: 19 days
Threat Level: PM1
Method:
Full Clearance 100%

SECTOR 6

SAMMARY

Geography: Bush
Tool: BC # 19
Total Area: 136745 m²
Operational Period:8 days
Threat Level: PM2
Method: Target Inspection
Percentage: 16% = 20619 m²

SECTOR 7

SAMMARY

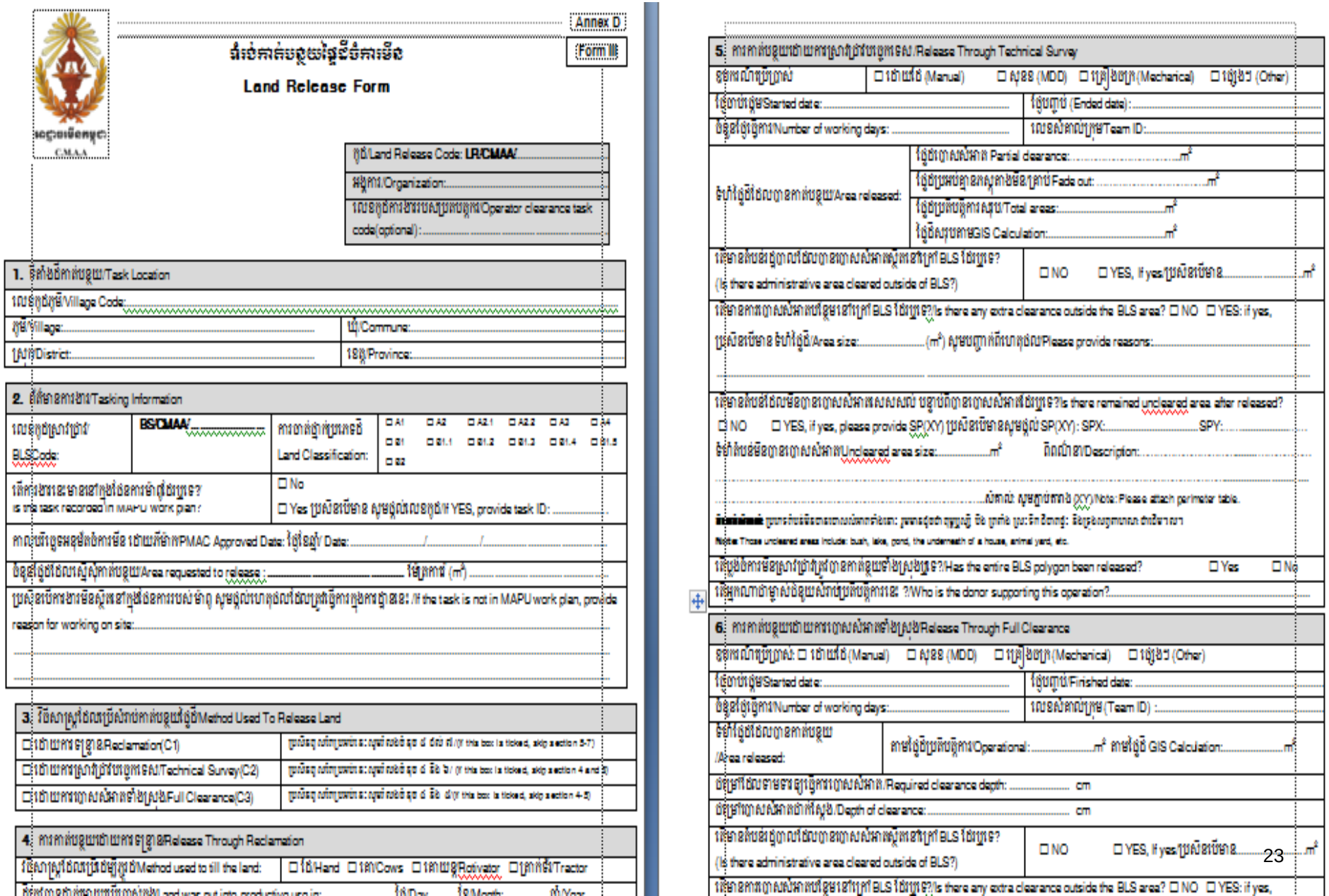
Geography: Rice field
Tool: SLD Team 03
Total Area: 6906 m²
Operational Period: 8 days
Threat Level: PM2
Method:
Full Clearance 100%

SECTOR 8

SAMMARY

Geography: Bush
Tool: BC # 19
Total Area: 14551 m²
Operational Period:1 days
Threat Level: PM2
Method: Target Inspection
Percentage: 8 % = 1200 m²

Land Release From



Annex D

Form III

ទំរង់កាត់បន្ថយផ្ទៃដីចំការមីន

Land Release Form

CMAA

កូដ/Land Release Code: LR/CMAA/	
អង្គភាព/Organization:	
លេខកូដការងារបេសកប្រចាំបង្គាប់/Operator clearance task code(optional):	

1. ទីតាំងដីកាត់បន្ថយ/Task Location

លេខកូដភូមិ/Village Code:	
ភូមិ/Village:	ឃុំ/Commune:
ស្រុក/District:	ខេត្ត/Province:

2. ព័ត៌មានការងារ/Tasking Information

លេខកូដស្រាវជ្រាវ/BLSCode:	BS/CMAA/.....	ការចាត់ថ្នាក់ប្រភេទដី Land Classification:	☐ A1 ☐ A2 ☐ A2.1 ☐ A2.2 ☐ A3 ☐ A4 ☐ B1 ☐ B1.1 ☐ B1.2 ☐ B1.3 ☐ B1.4 ☐ B1.5 ☐ B2
តើការងារនេះមាននៅក្នុងផែនការម៉ាភ្លឺដែរឬទេ? Is this task recorded in MAPU work plan?		☐ No ☐ Yes ប្រសិនបើមាន សូមផ្តល់លេខកូដ/ If YES, provide task ID:	
កាលបរិច្ឆេទអនុម័តដោយ PMAC Approved Date: ថ្ងៃទី/ Date: ...../...../.....			
ចំនួនថ្ងៃដែលស្នើសុំកាត់បន្ថយ/Area requested to release: ..... ផ្ទៃក្រឡា (m²)			
ប្រសិនបើការងារមិនស្ថិតនៅក្នុងផែនការរបស់ម៉ាភ្លឺ សូមផ្តល់ហេតុលដែលត្រូវធ្វើការងារក្នុងកន្លែងនេះ: /If the task is not in MAPU work plan, provide reason for working on site:			

3 វិធីសាស្ត្រដែលប្រើសំរាប់កាត់បន្ថយដីធ្លី/Method Used To Release Land

☐ដោយការទន្ទ្រានReclamation(C1)	ប្រសិនបើសញ្ញាក្រឡាបានៈ សូមបំពេញផ្នែក ៤ ចំណុច ៧/ (if this box is ticked, skip section 5-7)
☐ដោយការស្រាវជ្រាវបច្ចេកទេស/Technical Survey(C2)	ប្រសិនបើសញ្ញាក្រឡាបានៈ សូមបំពេញផ្នែក ៥ និង ៦/ (if this box is ticked, skip section 4 and 6)
☐ដោយការបោសសំអាតទាំងស្រុង/Full Clearance(C3)	ប្រសិនបើសញ្ញាក្រឡាបានៈ សូមបំពេញផ្នែក ៥ និង ៧/ (if this box is ticked, skip section 4-5)

4 ការកាត់បន្ថយដោយការទន្ទ្រាន/Release Through Reclamation

វិធីសាស្ត្រដែលប្រើដើម្បីភ្ជួរ/Method used to till the land:	☐ ដៃ/Hand ☐ គោ/Cows ☐ គោយន្ត/Rotivator ☐ ត្រាក់ទ័រ/Tractor
ដីដែលបានទន្ទ្រានរួចហើយត្រូវបានដាក់ឱ្យប្រើ and was put into productive use in:	ថ្ងៃ/Day ..... ខែ/Month ..... ឆ្នាំ/Year .....

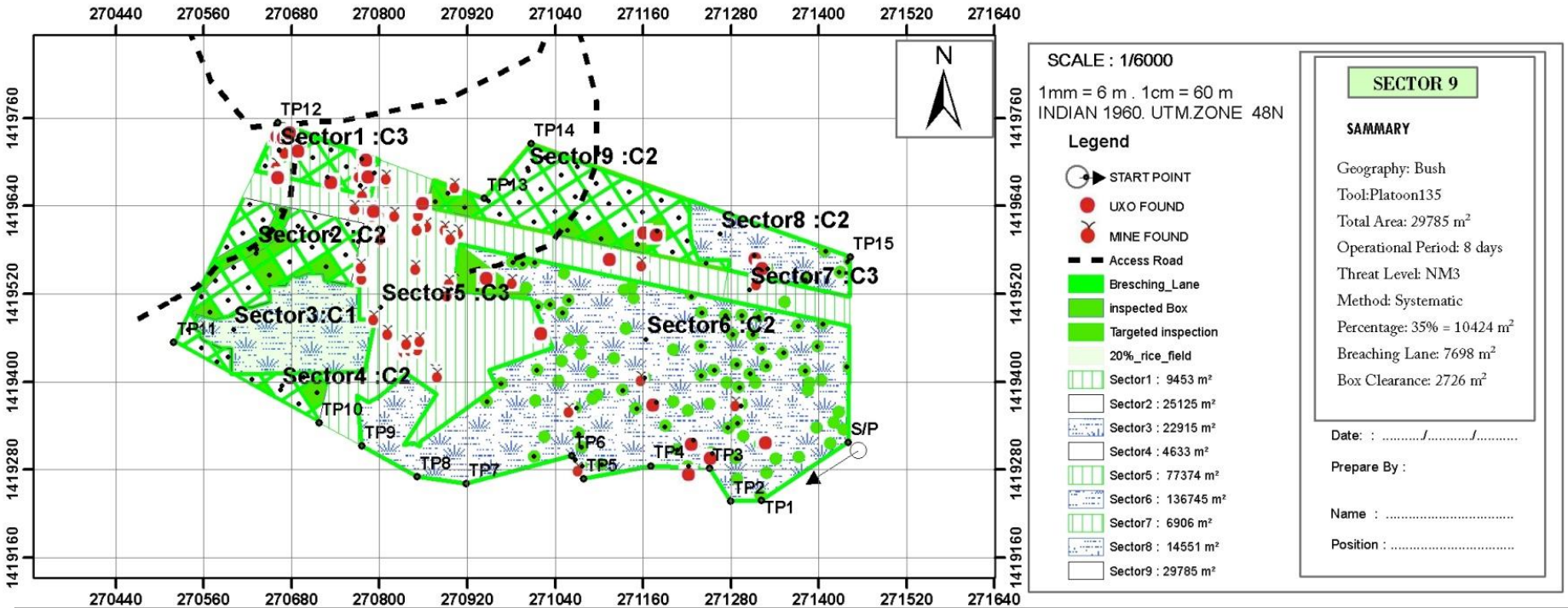
5 ការកាត់បន្ថយដោយការស្រាវជ្រាវបច្ចេកទេស/Release Through Technical Survey

ទន្ទ្រានដោយប្រើប្រាស់	☐ ដោយដៃ (Manual) ☐ សុនខ (MDD) ☐ ត្រឿងចក្រ (Mechanical) ☐ ផ្សេងៗ (Other)	
ថ្ងៃចាប់ផ្តើម/Started date:		ថ្ងៃបញ្ចប់ (Ended date): .....
ចំនួនថ្ងៃធ្វើការ/Number of working days:		លេខសំគាល់ក្រុម/Team ID: .....
ទំហំផ្ទៃដីដែលបានកាត់បន្ថយ/Area released:	ថ្ងៃដែលបោសសំអាត Partial clearance: ..... m²	
	ថ្ងៃដែលប្រគល់ឱ្យម្ចាស់ដីវិញ/Fade out: ..... m²	
	ថ្ងៃដែលប្រគល់ជូនការងារសរុប/Total areas: ..... m²	
	ថ្ងៃដែលសរុបតាម GIS Calculation: ..... m²	
តើមានតំបន់ដែលត្រូវបានបោសសំអាតស្ថិតនៅខាងក្រៅ BLS ដែរឬទេ? (Is there administrative area cleared outside of BLS?)	☐ NO ☐ YES, If yes/ប្រសិនបើមាន ..... m²	
តើមានការបោសសំអាតបន្ថែមនៅខាងក្រៅ BLS ដែរឬទេ?/Is there any extra clearance outside the BLS area? ☐ NO ☐ YES: if yes, ប្រសិនបើមាន ទំហំផ្ទៃដី/Area size: ..... (m²) សូមបញ្ជាក់ពីហេតុផល/Please provide reasons:		
តើមានតំបន់ដីដែលមិនត្រូវបានបោសសំអាតសល់ បន្ទាប់ពីត្រូវបានបោសសំអាតដែរឬទេ?/Is there remained uncleared area after released? ☐ NO ☐ YES, if yes, please provide SP(XY) ប្រសិនបើមានសូមផ្តល់ SP(XY): SPX: ..... SPY: ..... ទំហំតំបន់មិនទាន់ត្រូវបានបោសសំអាត/Uncleared area size: ..... m² ពិពណ៌នា/Description: .... សំគាល់: សូមភ្ជាប់តារាង (XY)/Note: Please attach perimeter table. ចំណាំ: ប្រភេទតំបន់ដែលនៅសល់រួមមាន: គុម្ពោត បឹង ស្រះ ក្រោមផ្ទះ ទីធ្លាសត្វ ល។ Note: Those uncleared areas include: bush, lake, pond, the underneath of a house, animal yard, etc.		
តើប្លង់ទីការមីនស្រាវជ្រាវត្រូវបានកាត់ខ្លួយទាំងស្រុងដែរឬទេ?/Has the entire BLS polygon been released?	☐ Yes ☐ No	
តើអ្នកណាជាម្ចាស់ជំនួយសំរាប់ប្រតិបត្តិការនេះ ?/Who is the donor supporting this operation?		

6 ការកាត់បន្ថយដោយការបោសសំអាតទាំងស្រុង/Release Through Full Clearance

ទន្ទ្រានដោយប្រើប្រាស់: ☐ ដោយដៃ (Manual) ☐ សុនខ (MDD) ☐ ត្រឿងចក្រ (Mechanical) ☐ ផ្សេងៗ (Other)		
ថ្ងៃចាប់ផ្តើម/Started date:		ថ្ងៃបញ្ចប់/Finished date: .....
ចំនួនថ្ងៃធ្វើការ/Number of working days:		លេខសំគាល់ក្រុម (Team ID) : .....
ទំហំផ្ទៃដីដែលបានកាត់បន្ថយ /Area released:	តាមផ្ទៃដីប្រតិបត្តិការ/Operational: ..... m² តាមផ្ទៃដី GIS Calculation: ..... m²	
ជម្រៅដីដែលបានបោសសំអាត/Required clearance depth: ..... cm		
ជម្រៅបោសសំអាតជាក់ស្តែង/Depth of clearance: ..... cm		
តើមានតំបន់ដែលត្រូវបានបោសសំអាតស្ថិតនៅខាងក្រៅ BLS ដែរឬទេ? (Is there administrative area cleared outside of BLS?)	☐ NO ☐ YES, If yes/ប្រសិនបើមាន ..... m²	
តើមានការបោសសំអាតបន្ថែមនៅខាងក្រៅ BLS ដែរឬទេ?/Is there any extra clearance outside the BLS area? ☐ NO ☐ YES: if yes,		

LAND RELEASE SKETCH BS/CMAA 10473
PHCHAV VILLAGE , TRENG COMMUNE



SCALE : 1/6000

1mm = 6 m . 1cm = 60 m
INDIAN 1960. UTM.ZONE 48N

Legend

- START POINT
- UXO FOUND
- MINE FOUND
- Access Road
- Bresching_Lane
- inspected Box
- Targeted inspection
- 20%_rice_field
- Sector1 : 9453 m²
- Sector2 : 25125 m²
- Sector3 : 22915 m²
- Sector4 : 4633 m²
- Sector5 : 77374 m²
- Sector6 : 136745 m²
- Sector7 : 6906 m²
- Sector8 : 14551 m²
- Sector9 : 29785 m²

SECTOR 9

SAMMARY

Geography: Bush
Tool:Platoon135
Total Area: 29785 m²
Operational Period: 8 days
Threat Level: NM3
Method: Systematic
Percentage: 35% = 10424 m²
Breaching Lane: 7698 m²
Box Clearance: 2726 m²

Date: : ...../...../.....

Prepare By :

Name : .....

Position : .....

SECTOR 1

SAMMARY

Geography: Bush
Tool: platoon 135
Total Area: 9453 m²
Operational Period: 6 days
Threat Level: PM1
Method:
Full Clearance 100%

SECTOR 2

SAMMARY

Geography: Bush
Tool:Platoon135
Total Area: 25125 m²
Operational Period: 11days
Threat Level: PM2
Method: Systematic
Percentage: 55% = 13818 m²
Breaching Lane: 8777 m²
Box Clearance: 5041 m²

SECTOR 3

SAMMARY

Geography: rice field
Tool: QA/QC Team
Total Area: 22915 m²
Operational Period:1days
Threat Level: NM1
Method:
1. Review Report
2. Field Monitering
3. QC

SECTOR 4

SAMMARY

Geography: Bush
Tool:Platoon135
Total Area: 4633 m²
Operational Period:2days
Threat Level: PM2
Method: Systematic
Percentage: 55% = 2547 m²
Breaching Lane: 1435 m²
Box Clearance: 1113 m²

SECTOR 5

SAMMARY

Geography: Bush
Tool: BC # 19
Total Area: 77374 m²
Operational Period: 19 days
Threat Level: PM1
Method:
Full Clearance 100%

SECTOR 6

SAMMARY

Geography: Bush
Tool: BC # 19
Total Area: 136745 m²
Operational Period:8 days
Threat Level: PM2
Method:Target Inspection
Percentage: 16% = 20619 m²

SECTOR 7

SAMMARY

Geography: Rice field
Tool: SLD Team 03
Total Area: 6906 m²
Operational Period: 8 days
Threat Level: PM2
Method:
Full Clearance 100 %

SECTOR 8

SAMMARY

Geography: Bush
Tool: BC # 19
Total Area: 14551 m²
Operational Period:1 days
Threat Level: PM2
Method: Target Inspection
Percentage: 8 % = 1200 m²

THANK YOU.