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CAMBODIAN MINE ACTION CENTRE

Annual Report 2007

ISO 9001:2000

Saving Lives and Supporting Development for Cambodia

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GLOSSARY

ADA	Agriculture for Development Action
ADB	Asian Development Bank
ADMAC	Agricultural Development on Mine Areas in Cambodia
AP mine	Anti-personnel mine
AT mine	Anti-tank mine
CBMRR	Community-Based Mine Risk Reduction
CBURR	Community-Based UXO Risk Reduction
CBD	Community-Based Demining Team
CHO	Cambodia Hope Organization
CM	Close Marker
CMAA	Cambodian Mine Action and Victim Assistance Authority
CMAC	Cambodian Mine Action Centre
CMC	Community Mine Clearance
CMVIS	Cambodia Mine Victim Information System
CRC	Cambodian Red Cross
CRS	Catholic Relief Service
CVD	Cambodian Vision for Development
DANIDA	Denmark International for Development Agency
DDSP	Disability Development Services Pursat
DFP	District Focal Point
DH	Dog Handler
EDD	Explosive Detection Dog
EOD	Explosive Ordnance Disposal
ERO	Eastern EOD Regional Office
EU	European Union
FRA	Field Relief Agency
GTC	Global Training Centre
HI	Handicap International
ICRC	International Crescent and Red Cross
JMAS	Japan Mine Action Service
JSC	Jesuit Service Cambodia
L1S	Level One Survey (Impact Survey
LLD	Long Leash Dog
LUPU	Land Use Planning Unit

LWF	Lutheran World Federation
MAPU	Mine Action Planning Unit
MAT	Mine Awareness Team
MDD	Mine Detection Dog
MMT	Mine Marking Team
MoEYS	Ministry of Education, Youth and Sports
MRE	Mine/UXO Risk Education, or Mine/UXO Risk Education and Reduction (Team)
MRT (MRRT)	Mine/UXO Risk Reduction Team
NGO	Non-Governmental Organization
OEB	Opérations Enfants De Battambang
PMAC	Provincial Mine Action Committee
RACHA	Reproductive and Child Health Alliance
SEADO	Social Environment Agricultural Development Organization
SLD	Short Leash Dog
TC	Training Centre
TS(T)	Technical Survey (Team)
UNDP	United Nations Development Program
UXO	Unexploded Ordnance
WFP	World Food Program
WVC	World Vision - Cambodia

We highly pay our homage to the seven lost deminers who died in the tragic incident on the 19th January 2007, and deeply share our sympathy with their families, friends and local community.

Our utmost salute to those brave deminers who lost their lives or became permanently handicapped doing their duties.

Our utmost salute to those brave deminers, who are enduring the dangerous and painstaking demining work under extreme climate conditions.

Their courage and sacrifice, for the safety of others, will be eternally remembered.

ACKNOWLEDGEMENT

Our sincere acknowledgement goes to the Royal Government of Cambodia for the continued support and commitment, both political and financial, to CMAC in support of its endeavor to combat the landmines and ERW problems.

CMAC would like to gracefully extend its acknowledgements to all donor governments namely Australia, Canada, Germany, Japan, the Netherlands, Spain, United States for their continued support and valuable contributions to CMAC's mine action efforts. At the same time, our deep thanks go to Embassies and Consulates of friendly countries that have always been very active in mine action and supportive to CMAC's demining efforts.

Separately, CMAC also expresses its sincere appreciation to the Governments of ASEAN Countries and the Government of Japan in establishing ASEAN Integration Fund (JAIF) scheme to support mine action sector among ASEAN countries that have mine and UXO problem.

CMAC would also like to acknowledge the good and fruitful partnership with Austcare, BHP Billiton, DynCorp International, Golden West, GTC Bosnia, Japan Mine Action Service (JMAS), Liberty Mining International Co. Ltd, MAG Cambodia, Norwegian People Aid (NPA), Peace Boat, Rotary International District 2650, UNA-USA's Adopt-A-Minefield, UNICEF and UNDP.

CMAC also warmly acknowledges the advice and assistance provided by GICHD, JICS, ITEP and other specialized institutions, the Provincial Mine Action Committees (PMAC), Mine Action Planning Units (MAPU), the local authorities, AVI, CRC and HIB and fully thanked for their active roles and contributions to the mine action efforts in Cambodia.

Last, but not least, CMAC pays its kindest and most sincere tributes to its brave deminers and field staff, who endure the extreme working and living conditions, unpleasant Protective Equipment and constant mobility to remote areas, to accomplish the daunting and dangerous demining tasks in order to bring personal safety to millions of affected countrymen. Their families, including wives and children, who sacrifice their personal comfort and other social opportunities, are especially acknowledged and valued.

Without these contributions and sacrifices, CMAC would not be able to deliver its mission to save lives and supporting Cambodia's development.

FOREWORD

May I express, on behalf of all CMAC staff, my sincerest appreciation and gratitude to the Royal Government of Cambodia, local authorities, local communities, all donors, partners and friends, for their valuable and continual support to CMAC. Taking this opportunity, I am honored to present you CMAC Annual Report 2007.

In the period from January to December 2007, a total area of 27,666,058 m² was cleared and released to the communities in support of risk reduction and development. On top of that, 2,893,884 linear metres of mined affected areas was marked for subsequent clearance as well as to warn villagers from stepping into dangerous areas. Further, 19,062.94 hectares of area reduction was achieved by the technical survey teams during this reporting period. The clearance, marking and area reduction figures achieved in 2007 highlight significant increases compared to productivities for the same period in 2006, especially in area reduction, following the implementation of a new technical survey concept designed to speed up the technical survey process. In total, 32,245 anti-personnel mines, 587 anti-tank mines and 114,755 UXO were found and destroyed during this period. Direct and indirect beneficiaries from the clearance activities include 45,113 families and 21,467 students in 256 villages.

In regard to costing, the yearly financial statement indicates that the global cost per square meter is less than fifty cents before depreciation. However, this calculation is not only based on net cost of clearance alone, but it also includes other non-clearance activities such as: mine risk education, marking/survey, EOD activities, training and other costs associated with strengthening the community participation in mine action through the participatory approach such as building the volunteer network for Community-Based Mine Risk Reduction and Community-Based UXO Risk Reduction programs in 35 high landmine/UXO casualty districts.

CMAC has always placed considerable attention on research and development of new technologies for applications in mine action. In the past year, CMAC continued achieving efficiencies in many areas. One such area was the larger targets for brush cutters by using improved equipment and technology. Advances and continuing work with the MDD program continues to be one of the best and most productive programs in the demining community. CMAC smoothly and productively continued with the Explosive Harvesting Program co-managed with Golden West. This Program has already yielded outputs, which have been welcome and positively commented by demining operators including Halo Trust and MAG. The Project for Research and Development of Mine Clearance Related Equipment, financially supported by the Japanese Government, was successful implemented. Three demining machines and 4 GPR mine detectors were tested under this project. This Project contributed significantly to the R&D efforts in Cambodia and will likely have a global impact in other mine affected countries. In addition, CMAC also tested multi-tool sifters from US NVESD attached with CMAC's brush cutters.

On the management side, CMAC tirelessly seeks better ways and approaches to ensure the sustainability and efficiency of the organization. This effort could be noticed in the past year in the restructuring of the operation teams to provide multiple skills, improve

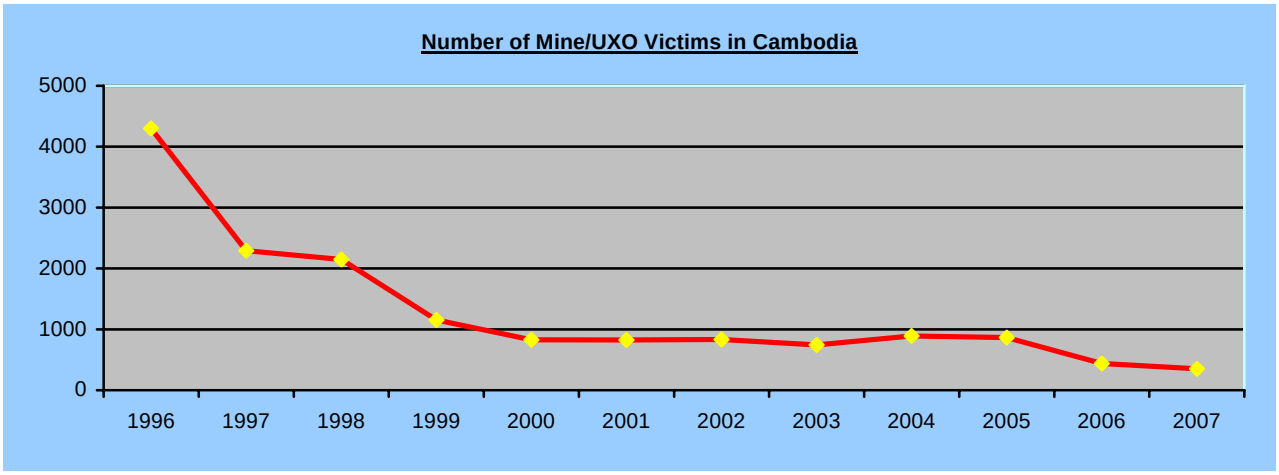
efficiency, and increase flexibility and response to the communities. CMAC is committed to employing best practices in mine action to cope and stay abreast of the changing environment in mine action. Institutionally, CMAC constantly works to achieve continual improvements in organizational culture and behaviors through encouraging employee participation, sound human resource management and capacity building. Audit reports also reflect many improvements, cost effectiveness and transparency in CMAC with satisfactory audit opinion on the overall CMAC management. CMAC also continued implementing ISO 9001:2000, which was awarded in February 2004.

Once again, may I express my sincere gratitude to the international community, governments, international and local partners for the continued support and commitment to help reduce the suffering and risks of the Cambodian people so that a safe environment for development can be restored in the country. This continued support is crucial for both the humanitarian and development causes. We appreciate that this important investment is the prerequisite to high economic returns, poverty reduction, and social/democratic improvement in the affected communities.

Khem Sophoan
Director General
CMAC

EXECUTIVE SUMMARY

Despites enormous efforts by all the demining operators in Cambodia in the last 14 years to combat the landmine and UXO problem, these killing tools still continue to maim and kill around 800 to 900 people per year between 2000 -2005. Based on the CMVIS report, the following casualty data have been recorded in the last 11 years.



Despite significant reductions in casualties in the past years from 2,157 casualties in 1998 to 352 in 2007, the number of casualties caused by landmines and UXO in Cambodia still remains extremely high if compared with other mine/UXO affected countries in the world and in particular in this region. The significant drop in 2006 (by around 50%) and the number of casualties in 2007 (to 352 cases) is a positive sign of impact delivered by mine action efforts and should be sincerely praised. However, due to the magnitude of the problem and the nature of contextual economic and demographic dynamics of Cambodia, it is probably premature to definitely make a firm conclusion from this drop, and more efforts need to be made to ensure the drop continues until Cambodia reaches the zero-victim state by the year 2012 as intended by the Royal Government of Cambodia.

In the past 14 years, CMAC made significant contributions to solving the landmine and UXO problem and contributed remarkably to the casualty reduction, community development and people's awareness of the risks associated with their daily activities in the affected areas. The following shows the result of CMAC's operational activities, in terms of clearance and mine/UXO destruction, from 1992 to December 2007:

- Number of minefields cleared: 3,565
- Cleared 199,714,947 m² of contaminated land
- Area reduction achieved: 41,299.07 ha
- Found and destroyed 378,980 anti-personnel mines
- Found and destroyed 7,160 anti-tank mines.
- Found and destroyed 1,255,927 UXO's,
- Found and destroyed 334 improvised mines,
- Found 38,242 kg of small calibers, and
- Unearthed 382,894,661 fragments.

In 2007, CMAC planned to clear a total area of 25,308,000 m². Of these approximately 251 sites would be cleared for large scale development. These included 26 sites for resettlement, 30 for resettlement and agriculture, 102 for agriculture, 61 sites for rural roads (equivalent to 108,260 m of road), and the remaining for water canals/irrigation, schools, water ponds, pagodas and others. This clearance activity was expected to benefit 168 villages which were located in the high casualty areas. In other words, this clearance effort would benefit 2,740 families directly, 16,828 families indirectly, and a total of 1,132 school children. Approximately 114,457 people were expected to benefit from CMAC demining operations in 2007. To survey and clear up to 672,000 m² of high impact areas in approximately 144 villages. In addition, marked at least 2,080,000 m of land and planned to collect and destroy approximately 117,900 UXO.

To achieve this work plan, CMAC deployed the following teams:

No.	Resources	Number of Teams Deployed in 2007											
		Jan	Feb	Mar	Apr	Mar	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Demining site	1	1	1	1	1	1	0	0	0	0	0	0
2	Normal Demining Platoon (NP)	3	3	3	3	3	3	0	0	0	0	0	0
3	Mobile Demining Platoon (MP)	36	36	34	33	33	33	36	36	36	36	36	36
4	Explosive Ordnance Disposal Team (EOD)	21	26	26	27	27	27	27	27	27	27	27	27
5	Technical Survey Team-Small (TST-small)	19	19	19	19	19	19	19	19	19	19	19	19
6	Community Mine Clearance Team (CMC)	13	14	14	14	14	14	14	14	14	16	16	16
7	Mine Risk Education and Reduction Team (MRE)	6	6	6	6	6	6	6	6	6	6	6	6
8	Community-Based Mine Risk Reduction (CBMRR)	23	23	23	23	23	23	23	23	23	23	23	23
9	Community-Based UXO Risk Reduction (CBURR)	16	16	16	16	32	32	32	32	32	36	36	36
10	Short Leash Mine Detection Dog Team (SLD)	10	10	10	10	10	10	10	10	10	10	10	10
11	Long Leash Mine Detection Dog (LLD)	4	4	4	4	4	4	4	4	4	4	4	4
12	Explosive Detection Dog (EDD)	2	2	2	2	2	2	2	2	2	4	4	4
13	Mechanical Brush Cutter (BC)	25	25	25	25	25	25	25	25	25	25	25	25
14	Technical Survey Team-Large (Large-TST)	4	4	4	4	4	4	4	4	4	4	4	4
15	Community-Based Demining Platoon (CBD)	5	5	5	5	5	5	5	5	5	5	5	5

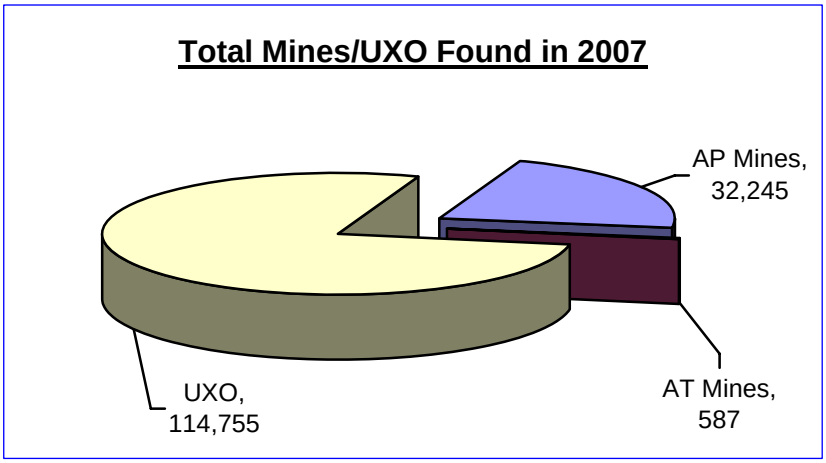
To support the total capacity deployed in field operations, CMAC received funding through two main channels: the UNDP's "Clearing for Results" Project and bilateral agreements, commonly called bilateral projects. The UNDP's "Clearance for Results" project was a multi-donor funding project supporting CMAC to clear landmines and ERW, conduct technical survey and area reduction, provide mine and ERW risk education and reduction, and conduct training in mine action. Specific focus was placed on the tangible outputs in terms of area cleared and the socio-economics of the clearance activities. Bilateral projects in 2007 were mostly continued projects from the previous years. The projects which have been implemented in 2007 were identified in the table below:

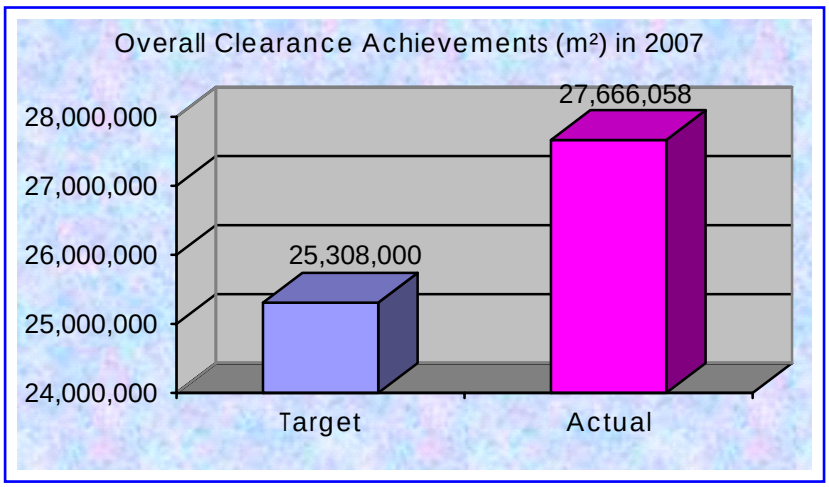
PROJECT TITLE	DONOR / PARTNER	PROJECT LOCATIONS
Clearing for Results	UNDP (Australia, Canada, AAM, Spain)	All DUs
The Integrated Demining and Development Program	Netherlands/NPA Cambodia	DU1, Banteay Meanchey
Integrated Mine Action and Development Program	Australia/Austcare	DU1, Banteay Menchey
The Project for Supporting Humanitarian Demining Activities in Battambang Province	Grassroots-Japan	DU2, Battambang
The Community-Based Demining (CBD)	Japan/JMAS	DU2-Battambang
Humanitarian Mine Action Project	USA	DU3, Pailin and Samlot (Battambang)
The Project for Supporting Humanitarian Demining Activities in the Provinces of Kampong Thom, Oddar Meanchey and Preah Vihear	Grassroots-Japan	DU4, Kompong Thom, Preah Vihear and Oddar Meanchey
Mine/UXO Clearance in Archeological Site of Koh Ker	Peace Boat, Japan	DU4, Preah Vihear
Humanitarian Demining in Siem Reap and Oddar Meanchey	Germany	DU6, Siem Reap & Oddor Meanchey
The Research and Development of Mine Clearance related to Equipment	Japan/JICS	Battambang
UXO Clearance Activities and CBURR Project	Japan/JMAS	Svay Rieng, Kandal, Kampong Speu, Kampong Cham
Explosive Harvesting Program (EHP)	USA/Golden West	CMAC Training Center (Kg. Chhnang)
Provision of MDD and Technical Assistance	NPA/GTC-Bosnia	CMAC Training Centre (Kg. Chhnang)
ERW Clearance in the EASTERN Province of Cambodia	Japan-ASEAN Integration Fund (JAIF)	Kampong Cham, Kratie, Steung Treng, Ratanak Kiri and Mondul Kiri
Mine Risk Education and CBMRR	UNICEF	All DUs
Post Clearance Development Project	GOOD EARTH JAPAN-HITACHI	DU2- Battambang
Post Clearance Development Project: "Building a Primary School on Land Cleared by CMAC"	Rotary International-District 2650	DU2 -Battambang
CONTRACTUAL SERVICE UNIT:		
PROJECT TITLE	**DONOR / PARTNER**	**PROJECT LOCATIONS**
One Mine Detection Dog (MDD) Contract	MAG	Battambang and MAG targeted zone
One Mine Detection Dog (MDD) Contract	MAG	Samlot, Ratanak Mondul, (Battambang) and Pailin
One Mine Detection Dog (MDD) Contract	MAG	Preah Vihear and MAG targeted zone
Mineral Exploration in Mondul Kiri	BHP Billiton	Mondul Kiri
Mineral Exploration in Ratanak Kiri and Banteay Meanchey	LMI	Ratanakiri and Banteay Mreanchey province
Path finding, surveying and surface clearance	HOLCIM Telecom.	Kampot, Kampong Speu, Kampong Cham and Kratie province
Mine and UXO Clearance in Samlot	Cambodia Mining Development Co. Ltd. (Action Group)	Battambang Province
Path finding, surveying and surface clearance on national road#1, 3, 4, 5, 6A & 7	CADCOMMS	Kampong Cham Province, Suong

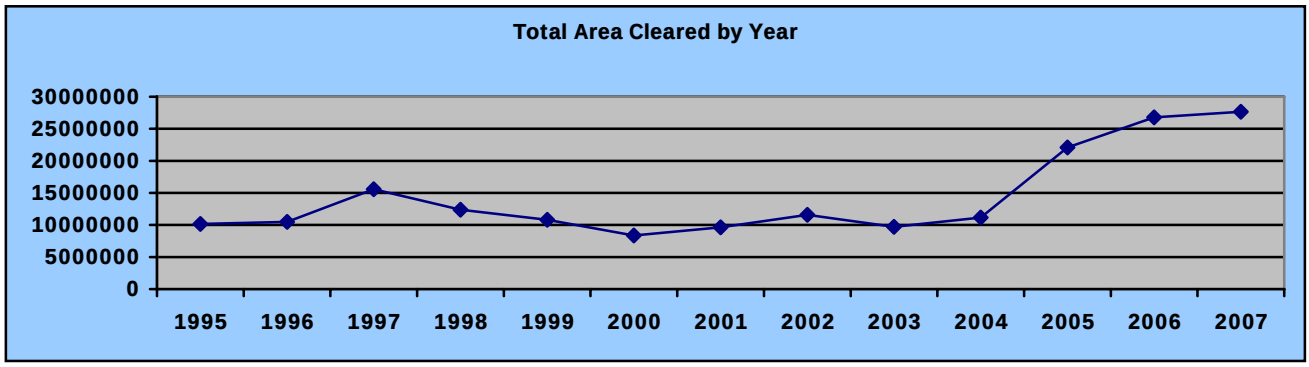
2007 provided a challenging and solid year with many solid operational achievements combined with many continuing initiatives in operational methods and technologies. As in previous years these positive improvements and changes were a result of CMAC's commitment to the policy of 'Safety, Quality and Productivity' to meet our own safety requirements and the donor and partners' requirements in a changing mine action environment.

In 2007 CMAC saw one of the most productive years ever. Although figures 'per team deployed' are very encouraging and area reduction continue to increase. On 19 January 2007, a tragic accident happened in Kamrieng District, Battambang Province where seven deminers were killed as the result of an AT Mines blast. Since this time, SOPs have been tightened to prevent any reoccurrence but demining is a hazardous occupation and there are always risks in such activities.

Description	2007 Achievement
Number of minefields cleared and handed over	570
Area cleared (m²)	27,666,058
Area Reduction (ha)	19,062.94
Area marked (m)	2,893,884
Anti-personnel mines	32,245
Anti-tank mines	587
UXO	114,755







Besides mine and UXO clearance, CMAC continued in 2007 to carry out other important mine action (non-clearance) activities such as mine risk education, survey, area reduction, training and community-based mine/UXO risk reduction program through a participatory approach whereby any affected community is empowered to carry out mine/UXO awareness education, risk assessment, prioritization of mine action tasks and establish community mapping about the scope of mines and UXO in their own community. Through 2007, CMAC's Mine Risk Education (MRE) teams, CBMRR and CBURR network conducted a total of 84,005 household visits, delivered 9,517 MRE sessions, reaching an audience of 340,09 people. During this reporting year, CMAC had 19 CBMRR's District Focal Point Officers, who were supervised, assisted and monitored by 4 Provincial Coordinators, and 434 volunteer networks working for the District Focal Points in 144 villages of 57 communes. In addition, there were also 26 CBURR District Focal Point Officers working closely with the UXO affected communities in 35 high casualty districts i in Kampong Cham, Kratie, Steung Treng, Ratanak Kiri, Mondul Kiri, Svay Rieng, Kandal, Prey Veng and Kampong Speu Provinces, covering a total of 84,005 households with total population of over 340,098 people. 75 CBURR volunteer networks were assisting the District Focal Points in information collection and risk education.

Activities	Achievement			
	MRE	CBMR	CBURR	Total
Number of villages reached	512	144	5,834	6,490
Number of sessions delivered	526	-	8,991	9,517
Households visited	15,195	32,781	36,029	84,005
Total number of people attending mine risk	62,747	138,319	139,032	340,098

It should be noted that in prioritizing the minefields for clearance, CMAC fully follows the MAPU/PMAC process. This incorporates the socio-economic assessment and land use management after clearance. The following table shows the beneficiaries from the land that CMAC cleared in 2007.

Type of Beneficiaries	TOTAL
Direct Beneficiaries (families)	3,913
Indirect Beneficiaries (families)	41,200
Students	21,467
Beneficiaries villages	256

It is worth pointing out that the attainment of such high standards in operational productivity was a result of a number of contributing factors. Improved methodologies and technologies, enhanced organization behavior, sound control and monitoring system and constant commitment to continual improvements in all areas of operations and management contributed to this achievement.

In response to the Royal Government's strategy for accelerated area reduction, and based on experience and practice on the ground, especially related to minefield information, CMAC realizes that technical survey is one of the appropriate answers to identifying the real problems and quickly releasing low-threat and no-threat land to the communities for productive use, especially when resources to physically clear every centimeter of the minefields are scarce. In order to speed up technical survey information collection, CMAC redefined its technical survey concept and process in 2007. This new concept of technical survey utilizes the community-based mine risk reduction network members as the moderator of information by using all existing sources of information within their community and by coordinating with key informants as well as the local authorities to ensure that the obtained information is verifiable and reliable. While the new concept of technical survey involves a lot of inputs from the local authorities and the CBMRR, its outputs (mine/UXO contamination maps) are distributed more widely to the village authorities, PMAC/MAPU and CMAA for planning and prioritization purposes. Land released through this process can also be removed from the contamination map in the national database.

The concept of technical survey was implemented in the last part of the 2006 and it produced a positive result. In 2007, the technical survey teams completed technical survey in 174 villages, achieved a total of 19,062.94 ha of area reduction, and also identified 14,005.33 ha of contamination area outside the Level One Survey records/map. In addition, they also cleared 150,434 m² of land and found and destroyed 24 mines and 21 UXO in the survey areas.

The explosive remnants of war scattered virtually through out the country after the three-decade long conflicts and heavy US bombing continue to pose fatal threats to millions of the vulnerable population. The evidence of the magnitude of the ERW problem lies with the high casualty rate that Cambodia suffers from. Furthermore, with the expanding economic and commercial activities in the eastern provinces as a result of new road links, mining exploration contracts, and tourism growth, the response to the ERW problem needs to be increased. Due to this emerging demand, CMAC has expanded its EOD capacity in the eastern provinces to respond to the growing economic and development activities in the areas.

In 2007, the recently established Eastern EOD Regional Office (ERO), located in Kampong Cham Province, established and deployed additional ERC and ERI teams in this region to meet UXO clearance demand. This office manages and supervises ERW activities in eastern provinces including: Kampong Cham, Prey Veng, Svay Rieng, Kratie, Stung Treng, Mondul Kiri and Ratanak Kiri to respond to the community requirements for response to explosive remnant of wars in these areas. As the economic and development activities are starting to take roots in these provinces, including mineral exploration, it is expected that the economic and demographic boom in the area will increase the level of threats posed by the presence of ERWs in the areas.

CMAC continues to focus on the areas of greatest need and aims to expand and strengthen its capacity in the field of ERW in the coming years. As part of this commitment, CMAC continues to develop the new concept of Unexploded Ordinance Detection Dog (EDD), which has become another essential tool for UXO clearance operations. Previously CMAC's EOD capacity has been focusing on collecting UXO on the ground, mostly reported by the police and the communities. However, today there is a greater demand for underground UXO clearance for subsequent use of these UXO affected areas for economic and rehabilitation activities. CMAC's EDD has been developed and trained with the dedicated support by the Norwegian People's Aid (NPA) and its MDD Training Centre in Bosnia (the GTC). In 2006, CMAC trained 4 explosive detection dogs (EDD) to further speed up the ERW clearance operations. In 2007, these teams were deployed and fully operational and significantly speed up clearance operations on the ground. This ordnance still poses a formidable threat to Cambodians mainly due to the massive number of UXO still scattered throughout the country.

CMAC is committed to remain a leading organization in terms of efficiency, productivity and safety. However, this task remains hard to achieve without the support of technology. CMAC continues its utmost to conduct research and development to improve demining technology to meet the field operation requirements. In 2007, CMAC carried out a number of research and development projects including the continued Explosive Harvesting program supported by the US Government, the Project for Research and Development of Mine Clearance Related Equipment supported by the Government of Japan, the Sifting Bucket Testing Project, the Magnet Test Project, etc. The Project for Research and Development of Mine Clearance Related Equipment was a major project conducted in the reporting period, bringing 3 demining machines, 3 GPR mine detectors and 1 buggy for detector mounting.

In addition, CMAC has also established high standard and quality test facilities in Siem Reap and Kampong Chhnang, which is able to conduct base line ' ***test and evaluation*** ' of mine and UXO detection equipment of various types at varying depths (up to 12 metres depth). The construction of these test facilities were supported by the Japanese and US Governments. These test facilities continue to conduct evaluations on all types of detection equipment. In addition to these facilities, CMAC also continues to upgrade the skills and experience of its staff; to plan, manage, and carry out quality test and evaluation of mine clearance related equipment.

CMAC has always been a very strong supporter of linking mine action with development. It is clear that land cleared can only benefit the people and will fully justify the cost if the land is properly used for optimum benefits. This is the reason why CMAC strictly follows the prioritization process of the PMAC/MAPU to ensure that, in addition to risk reduction, minefields selected to be cleared offer the most benefits to the communities and that these benefits are squeezed from every dollar spent on mine clearance.

CMAC also has long experience working with development partners such as Austcare, CARE International, NPA, Peace Boat, Rotary Club, and ZOA. In addition to clearance support, these organizations provide development support to the mined communities to enable re-establishment of local enterprise/agriculture, improve their living conditions,

enhance their social integration and raise self esteem and value. In addition, CMAC also provides development support to communities through its own development fund mobilized from donors. CMAC makes contributions to the communities by building schools, digging ponds, constructing access roads and water canals on the land it has cleared. These activities have contributed enormously to the Royal Government's effort of poverty reduction and eradication.

CMAC corporate management, with it commitment to sound management practices, made tireless efforts to strengthen CMAC and built up its capacity to meet the changing environment in mine action. Effective fund raising, project management, promotion of partnership and ownership, national and international coordination and relations, internal capacity building, in-house management issues, safety and quality of demining, financial management and effective deployment (to suit the resources available) – these were some of the critical tasks which consume a great deal of the management time. As a learning organization, CMAC management will constantly seek best practice from its staff by defining appropriated policies and work practices to ***"fit"*** the broader organisational strategies of cost reduction, quality enhancement and safety through innovation of new demining technologies and methodologies.

The organizational culture and behaviour changes has been linked to changes in mine action with the impact of globalization leading to the need for better service, cost effectiveness, flexibility, responsiveness and quality. With strong commitment to these qualities, it is not only having an impact on CMAC as an organization, but on the overall cost and productivity of demining operations. Despites some foreseen and unforeseen problems of financial shortfalls, CMAC was able to maintain cost minimization and maintain goals and outputs at an acceptable level. The changing environment, policies and funding mechanisms in mine action as well as internal good will and desire to achieve efficiency and cost effectiveness have made this possible.

2007 OVERVIEW

From January to December 2007, CMAC cleared up 27,666,058 m² of minefields, which represents 109.3% compared that in the Integrated Work Plan 2007 which targets up to 25,308,000m².

The total clearance target for this year, was set lower than the total clearance achievements in 2006 because of the reduction in the number of demining platoons, as 5 have been demobilized early in the year (from 41 in 2006 to 36 in 2007), as well as the loss of 2 brush cutters (BC) too old or broken to perform work anymore. The two-month gap in the Grassroots project in DU2 (Battambang and Pursat) is another factor which reduce the annual productivity.

However, CMAC carried on its efforts to improve its productivity in demining operation, and the operational target of demining tools has been increased: brush cutters target per months set at 17,500m² in 2006, is now 30,000m², due to the reform in the team structure, making the brush cutters more independent and efficient. MDD program continues to be one of the best and most productive programs in the mine action community.

Regarding the UXO clearance, 2,661,351m² of UXO fields have been cleared so far this year, which is a significant part of the expected clearance area for 2007 (according to the Integrated Work Plan, at least 1,746,000m² for 2007. This massive achievement was reached due to great efforts and innovations to expand the CMAC's UXO clearance capacity.

Indeed, the number of EOD teams has been increased in order to respond to the growing economic and development activities in the eastern provinces, as results of roads and mine explorations contracts; and their competency have been improved through training (chemical weapons, under water EOD operations, upgraded), on the job training, exchange of personal (within the Explosive Harvesting Program), and publication of EOD handbook.

CMC and MRE teams still perform UXO search and demolition activities, and are important tool to strengthen CMAC's efficiency and flexibility toward the UXO tasks requirement, nature and size.

In addition, CMAC established new tools to respond new needs. To face the new concept and objectives in terms of Explosive Remnant of War, 3 Community Mine Clearance Teams were mobilized as 4 Explosive Remnant of War Clearance Teams (ERC) and 6EOD teams were established into Explosive Remnant of War Intervention Teams (ERI). These ERC and ERI teams were deployed to work at the eastern provinces of Cambodia, especially in the Kampong Cham province.

CMAC established its 2 Explosive Detection Dog teams which are expected to become essential in the UXO clearance operations. Indeed, before, EOD capacity only focus on collecting UXO on the ground mostly reported by the police and the local communities, but this new tool will allow to respond to the growing demand for underground UXO clearance. After trials and training, the teams were deployed at the Eastern Regional Office (ERO), and will be expected to significantly contribute to speed up the effort to clear UXO.

Lastly, in terms of information, the new technical survey concept allowed to speed up the technical survey process by identifying through the CBMRR network members, the real threats and release non threats and low threat areas.

New concepts, tools and innovations recently introduced improved significantly the utilization and integration of demining toolboxes, and increased the efficiency of each toolbox.

The Research and Development conducted by CMAC with donors and partners allows finding innovative methods and technologies to improve the demining quality, safety, and efficiency. Within the Research & Development, the Explosive Harvesting Program is an important stake to extract explosive and make charges for mine and UXO demolition. CMAC is also carrying out a major research and development project to test demining machines and mine detectors manufactured in Japan, in Cambodia.

The high output of clearance has to be matched and balanced by effective quality assurance management. On the management side, CMAC has a continued strong commitment to maintaining good management practices which ensure cost-effectiveness, accountability and professionalism. In consequences CMAC is still certificated ISO 9001-2000 with regular surveillance audits from BM Trada.

1. CAMBODIA'S LANDMINE AND UXO PROBLEM

As a lethal legacy of various internal and external conflicts over a period of three decades lasting until late 1998, the Kingdom of Cambodia became one of the most heavily landmine/UXO-contaminated countries in the world. Even today, despite the enormous efforts of many demining operators over many countries and significant drops in the number of casualties in the past 11 years, landmines and UXO continue to kill and maim close to one thousand people every year (according to the CMVIS reports). Importantly, the mine/UXO problem poses a major threat and barrier to all rehabilitation and development activities in Cambodia. Rural civilian access to essential facilities such as water sources, roads, bridges, schools and agricultural land is still seriously restricted and hazardous in many parts of the country.

In its Article 7 report submitted to the United Nations on 15 April 2004, Cambodia reported that a Landmine Impact Survey was completed in April 2002. The Project surveyed the totality of the 13,908 Cambodian villages representing an estimated population of 11,460,661 persons (0.2 million households). The survey results show that there are 3,075 areas suspected of being contaminated by mines, unexploded ordnance (UXO) and cluster bombs. Those areas represent a surface of 4,466 km². A total of 46.2% of all Cambodian villages (6,421 villages) are suspected of being contaminated, with 23.7% of these villages being impacted very severely, 24.2% impacted severely and 52.1% less severely.

The impact of landmines on villages can be categorised as follows:

- 22% do not have enough agricultural land,
- 19% have high numbers of human casualties,

- 18% are affected in their gathering activities,
- 15% do not have enough housing land,
- 14% have experienced a loss of livestock, and
- 12% have a difficult water access.

A total of 7,487 villages (53.8% of all villages) did not report any contamination. The project estimates that 5.18 million Cambodians are at risk due to the presence of mines and UXO.

Although there are new claims that the real mine and UXO problem in Cambodia is less severe than the quoted figures and CMAA announces that only around 10% of the total problem can be considered high priority. There is no concrete and conclusive evidence or technical assessment to prove this theory. In fact, December 2007 figures show mines and UXO continue to kill and maim Cambodian civilians. Although there is a slight reduction in the number of deaths from previous years the numbers are still significant, especially if you are one of the family members of victims. It is vital to note that nearly 80% of the landmine incidents and nearly 60% of the UXO incidents occur in villages and farms as a result of everyday activities. Farming and personnel movement cause 66% of the landmine incidents while handling causes up to 50% of the UXO incidents. This indicates that the main threat to the population of Cambodia is from within the villages themselves and this is significant because people are forced to live in the minefields due to the lack of suitable safe land.

There are some suggestions that residual minefields, i.e. those minefields already cultivated by the people to reclaim land for farming and settlement purposes, pose no threats or very little threats to the villagers after 2 to 3 years of use. From CMAC's experience, mines and UXO continued to be found in these residual minefields and the evidence shows that more civilians are injured or killed in these minefields than by yet undefined mine or UXO fields. CMAC strongly supports the Royal Government's Area Reduction Policy to release the suspected areas so that scarce land can be returned to 'safe' productive use. The policy provides the guidelines detailing the correct way to address the issue; however, it is important to determine the appropriate method, technique and

practical approach to achieve this objective, and such techniques and practice should be standardised, systematic and reliable. Accordingly, CMAC has developed substantial experience with its technical survey, which is also mentioned in the Area Reduction Policy, which aims to identify and categorise different types and levels of landmine and UXO threats. Through this practice, sizeable areas of land formerly suspected of being contaminated have been released in a systematic and reliable way.

Recognizing that landmine/UXO problem is a serious challenge for the Royal Government of Cambodia, in terms of a physical and an economic contexts, the Royal Government is committed to addressing this high priority issue by setting an ambitious vision to achieve a zero-victim state by 2012 and zero impact from landmines and UXO by the year 2020. However, in practical term, based on over 11 years of experience, with the current resources, technology and methodology, the set vision is truly a serious challenge for the mine action operators. It is very important that Cambodia, as well as the international community who are obliged by the International Convention on Landmines, to work very hard, consistently and collectively to find innovative ways and provide sufficient resources to achieve the vision.

Today the mine action environment is changing as the ten year deadline of the Ottawa Convention is nearing for many countries and after many years of funds flowing into mine action worldwide. In Cambodia, particularly for CMAC, several emerging factors are having an impact on CMAC's planning and their business processes. Factors such as new funding arrangements (such as that through UNDP), the concept of result rather than process, changing policies and priorities of several key donors, latest developments of mine action in the region and around the world, advancement in technology, are impacting on CMAC's decisions and the way operations and future trends of the organisation are heading. Also the Royal Government's pressure to quickly reduce the landmines and UXOs are producing horizontal pressures. Be it internal or external pressure, CMAC management realise that they have to maintain their competitive advantages if they are to maintain donor confidence and sustainable level of funding.

Due to the changing environment in mine action, CMAC has to take bold steps and tough decisions to make reforms to its organisational structure, the operational team structure and missions, to redefine mine/UXO clearance techniques and methods, and introduce new initiatives in operations as opportunities emerge and the circumstances favor. While some measures are drastic and immediate and others modest and gradual, they all aim to

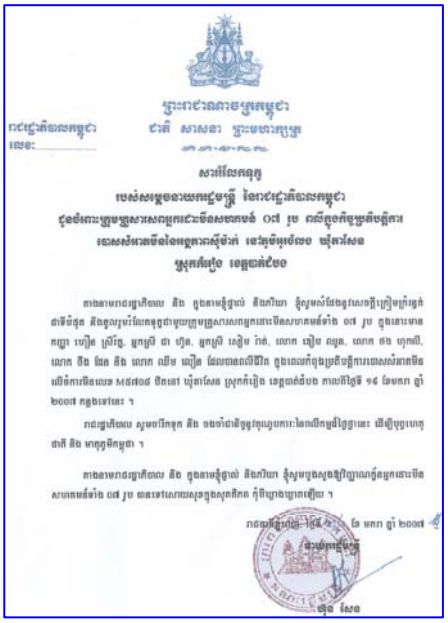
improve the overall management, quality, efficiency and productivity of the organisation without the compromise of safety.

2. 2007 OVERVIEW

2.1. Legal Status of CMAC

It is clearly stated in the Royal Decree on the Legal Status of Cambodia Mine Action Centre (CMAC) in August 2001 that CMAC is a national institution which is placed under the responsibilities of the Prime Minister of the Royal Government of Cambodia.

In early 2007, **Samdech Prime Minister Hun Sen** issued an official condolence letter on behalf of the Royal Government of Cambodia, himself and his family to share his deepest sympathies over the tragic death of seven CMAC deminers who lost their lives in Battambang on 19 January 2007. This revealed Samdech Prime Minister's sympathies and his commitment to CMAC deminers who work tirelessly to protect the ordinary people from the legacy of past.



Condolence letter of Samdech Prime Minister **Hun Sen**

2.2. Corporate Management

2007 was a second year to challenge substantial changes in UNDP funding which moved from a General Trust Fund arrangement to the 'Clearing for Results' Project or an output based project. Effectiveness, efficiency, safety and transparency were still the main features in demand in the project framework. However, CMAC management was ready to set up an optimal framework to meet this new challenging environment by strengthening its operations strategies and methodologies at the field level. Cost minimisation was also a key principle for change, thus CMAC management has been intently focusing on human resource management which CMAC calls resource-based human resource management, in which human resources are viewed as the basis of competitive advantage. This means that CMAC achievement is not only derived from the formal reorganisation and reshaping of work, but it is also powerfully derived from the workforce in terms of the training and expertise available to the organisation, the adaptability of employees which permits the organisation strategic flexibility, and the commitment of employees to the organisation's work plans and goals.

The organisational culture and behavior changes has been linked to changes in mine action with the impact of globalisation leading to the need for better service, cost effectiveness, flexibility, responsiveness and quality. With strong commitment to these qualities, it is not only having an impact on CMAC as an organisation, but on the overall cost and productivity of demining operations. Despites some foreseen and unforeseen problems of financial shortfalls, CMAC were able to maintain lower costs at a reasonable level of output. The changing environment, policies and funding mechanisms and levels in

mine action as well as internal drive to achieve efficiency and cost effectiveness have made this possible.

Strategically, the rolling Five-Year Strategic Plan which continues from the original Five Year Plan 2003–2007 has served a clear vision and provided an indicative direction in mine action for CMAC. Entering the last year of implementation, CMAC proved to be on the right track towards significantly contributing to the vision of landmine and UXO impact free, set by the Royal Government of Cambodia. The Integrated Work Plan 2007 forecast a funding shortfall of approximately USD 1,830,426 reflects CMAC's effort to adhere to the Strategic Plan. Based on the operational progress achieved in year report, it was reasonable to assume that the level of productivity must satisfactorily reach the set in the Five-Year Strategic Plan while the level of cost is significantly reduced.

As part of CMAC's commitment to good governance, transparency and cost effectiveness, a number of audits are conducted each year on different projects implemented by CMAC. CMAC's good governance, efficiency and transparency was reflected in several recent audits reports by several well-known audit firms, PricewaterhouseCoopers, KPMG and Ernst & Young, which have expressed satisfactory results on the overall management of CMAC but there is always room for procedures to be improved. The implementation of ISO 9001-2000 was another example of CMAC's strong commitment to quality management system, which is the backbone for a successful organisation.

An important continuing collaboration and partnership effort in mine action was the CMAC – MAG Cooperation Agreement. CMAC assigned three of its MDD teams to MAG in support of MAG's humanitarian demining effort. This cooperation agreement indicates not only the importance of MDD as a tool in mine action and the credibility of CMAC's MDD program but also the partnership, cooperation and coordination between demining operators in Cambodia, which is one of the prerequisites to mine action success in this highly contaminated country.

In term of contractual services, BHP Billiton has engaged CMAC services in the mining exploration in Mondul Kiri Province. Agreement between BHP and CMAC has been signed to employ 83 CMAC staff in 2007. At the same time, BHP has also trained CMAC staff who are in services with BHP to improve their capacity and knowledge for long time job with BHP. Other contractual services have been mad with Liberty Mining International (LMI) Pty., Ltd. to work in mining exploration in Ratanak Kiri Province, and other private companies as per requirement.

In strong efforts to improve demining technologies and methodologies, CMAC was committed to bringing in the most advanced technologies to be employed in mine action. Several test and research projects were carried from August 2006 till 2007 at CMAC Centre for Training and Research &Development in Mine Action and Explosives Remnants of War in Siem Reap, including test of different types of mine detectors (including new types of detectors), test of mechanical brush cutters (Komatsu and Hitachi), trial of new search drill, which are expected to help increase demining productivity and efficiency. Whereas the Explosive Harvesting Research Program at CMAC Training Centre in Kampong Chhnang Province was a successful project which was able to support 45% of TNT in 2007 over the total explosive consumption in CMAC.

In addition to the survey, marking, mine/UXO clearance, mine risk education and training in mine action achievements and Research and Development, the following achievements were made during the year:

- Two new more offices within the Department of Operations/Planning were established on June 22nd, 2007: the office of Project Management and MRE and the office of MDD management.

- Three-normal platoons (NP#33, 34, 36) in demining site#13 of DU6 were demobilized and converted to 3-mobile platoons (MP#145, 146 and147) on June 21st, 2007.

- Mine Action demonstration and Regional Mine Action Workshop on Mine Action Technology were conducted from 13 -15 March 2007 at CMAC TC and Phnom Penh, by cooperating with Explosive Harvesting Program (EHP), supported by the US Department of Defence Humanitarian Demining Directorate. MAG, Halo Trust and Engineering Armed Forces of the Royal Government of Cambodia participated to the mine action demonstration. 12 countries from the different regions in the world attended the workshop.

- The Contractual Service Unit (CSU) was established on January 15th, 2007 based in CMAC, HQ Phnom Penh in order to hold and cover of all types of commercial demining contracts. The CSU is placed under the responsibility of the deputy director of Operations and planning.

- The Field Regional Office for BHP Project was established on January 17th, 2007 in Mondul Kiri province. This project is partnership between CMAC and BHP Billiton, in order to support the mine exploration activities by providing mine/UXO survey and clearance for one year period.
- The QA Office moved from DU2 to TC on March 7th, 2007 and then to CMAC headquarters, Phnom Penh on June 1st, 2007.

- The Department of Training, Research and Development was established on January 15th, 2007, based in CMAC HQ, Phnom Penh.
- The Compensation Benefits was approved in Capital Sum USD 4,000 to USD 8,000 established on January 18th, 2007. This approval was effected and come into force from February 1st, 2007 and, so on.

- The restructuring of 3 CMC teams (9 staff per team) into 4 ERC teams (7 staff per team) have been completed in February 13th 2007, as well as the refresher training for one week at CMAC Training Center, Kampong Chhnang province. These teams were deployed to work under the command, control and support of ERO, on February 24th 2007. The purpose of these teams is to conduct the UXO clearance, in the eastern provinces of Cambodia. These teams are more flexible and suitable for quick responses to the community requests.

- The restructuring of existing EOD teams into 5 new EOD teams (or ERI) have been completed in February 13th 2007 as well as the refresher training for one week at CMAC Training Center, Kampong Chhnang province. These teams were deployed to work under the command, control and support of ERO, on February 24th 2007.

- Two EDD teams were established, and on successful trial from January 17th – April 25th, 2007 in Ok Nha Paang village, Long Vek commune, Kampong Tralach district, Kampong Chhnang province.

- Brush Cutters were restructured on January 2007 from 6 staff (1 team leader, 1 operator and 4 deminers) to 8 staff (1 team leader, 1 operator, 1 senior deminer and 5 deminers per team) in order to speed up the demining operations as paralleled to the BC's cutting speed.

- 5 mobile platoons, 4BC, 2EOD, 1MDD and 2 TSC were sent to TC to attend a demining refresher course from 22 January to 22 February 2007 for one month period during the gab of fund of Grass Roots project in the DU2.

- 3 CBD platoons under the JMAS project in DU2 were reformed on March 2007 in order to renovate on its capacity and technique through withdrawing of 15 CBD deminers from the platoons and were replaced by 15 regular deminers into the platoon, this means that the CBD is remained by 18 community deminers plus 15 CMAC regular deminers. These platoons were trained at TC for one week period in order to strengthen their capacity and demining techniques so that they can implement as well in the commune.

- The manual SOP was reviewed and distributed to the field, and the concerned staff was therefore trained.
- In January 2007, American observers visited the field, to monitor the technical issues of multi tool sifter attachment of BC in DU1 (O'Ampil village, Malai district, Banteay Meanchey) in order to find out any wrong issue and the gab of techniques for future improvement.

- The second restructuring of 6 CMC teams (9 staff per team) into 8 CMC teams (7 staff per team) have been completed in September 17th 2007, as well as the refresher training for nearly two week at CMAC Training Center, Kampong Chhnang province. These teams were deployed to work under the command, control and support of DU1, DU2, DU3, DU4 and HQ on September 29th 2007. The purpose of these teams is to conduct in both the mine and UXO clearance, in the eastern and northwestern provinces of Cambodia. These teams are more flexible and suitable for quick responses to the community requests.

- In the mid of 2007, BC section was approved continuing to conduct the trial on multi-tool-sifters in a real minefield, located in O' Ampil village, Malai district, Banteay Meanchey province in order to deeply study to improve, and to know on how to perform actually, its advantage and productivity as well as operation cost effective.

- All demining teams in DU3 (263 staff) in USA project were sent to TC to attend a demining refresher course from 20-31 August 2007. The aim of this refresher was to implement a one man-one lane drill and reform 9 demining platoons by increasing from 2 section commanders to 3 section commanders and reduced from 30 staff to 25 staff in each platoon, except the mobile teams were kept as before.

- 6 demining platoon (3 from DU2 and 3 from DU4) in UNDP and Grass Roots projects (177staff) were sent to TC to attend a demining refresher course from 24 December to 5 January 2008. The aim of this refresher was to implement a one man-one lane drill and reform those 6 demining platoons by increasing from 2 section commanders to 3 section commanders and reduced from 30 staff to 25 staff in each platoon.

- From October - December 2007, BC section cooperated with Research and Development Branch to conduct the trial on using of Battery charger pot which is connected to Brush Cutter machine while machine working in order to recharge an electric power of the mine detector's batteries for using in Brush Cutter team.

- At the end of 2007, CMAC operation branch conducted the trail on how to excavate the deep UXO and AT mine by Brush Cutter at the regular trial field in Siem Reap province. And the trial evaluation is success and recommended to implement in battlefield clearance (BAC) in the future at the eastern provinces of Cambodia. A trial report have been approved and recommended to draft the standard operation procedure (SOP), but this SOP have being developed and going on. In 2008, the SOP of UXO and AT Mine Excavation for the BC excavation and find a deep UXO and AT Mine underground will be forced and distribute to use at eastern provinces of Cambodia in order to assist speeding up the battlefield clearance as well as improving a safety, quality and productivity.

2.3. Financial Management

In general, financial situation in 2007 was stable. It was able to sustain the operational activities in the field even though budget flows of some of the projects were delayed. This made it difficult to manage the projects at times but delayed funding did not interrupt any of the field operations in the various projects. The budget of each the projects was carefully managed by its project manager utilising sunsystem software as enterprise resource planning tool.

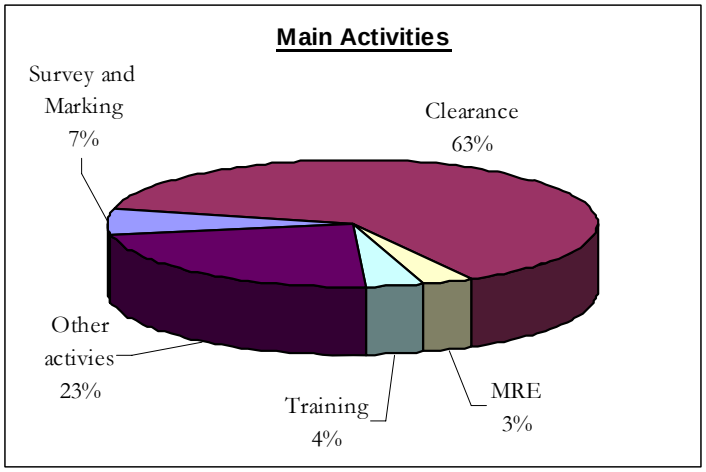
Financial Report
Period from 01 January to 31 December 2007

1. Presented by Donors' project:

No.	Project Title	Expenses
1	Asean Integration Fund-Asean Integration Fund*	369,301.32
2	Integrated Mine Action in Development Project-AustCare*	182,963.92
3	Integrated Mine Action in Development Project-AustCare*	8,129.32
4	Peace Boat Koh Ker Aug-Dec,06-Peace Boat	32,467.48
5	Peace Boat 1 Sept-15 Nov,07-Peace Boat	19,893.65
6	School Const & Pond contrsruction-Rotary International	28,480.40
7	EOD Clearance & CBURR project-JMAS*	1,510.36
8	EOD Clearance & CBURR project-JMAS*	86,571.85
9	EOD Clearance & CBURR project-JMAS*	58,614.06
10	Community Base Demining project-JMAS*	50,335.55
11	Community Base Demining project-JMAS*	124,600.92
12	Humanitarian Demining DU4 project-Grass Root*	866,615.51
13	Humanitarian Demining DU2 project-Grass Root*	707,314.26
14	Research & Development_Phase 1-JPN*	15,635.43
15	NPA Jan to 31 Aug 2007-NPA*	513,756.02
16	UXO/Mine Risk Education-UNICEF	59,038.17
17	Humanitarian Demining (Pailin)-USA*	978,519.08
18	Humanitarian Demining (Pailin)-USA*	485,192.26
19	Administrative Support project-RGC	219,855.01
20	Mine Clearance (Contract)-MAG	220,636.14
21	Mine Clearance (Contract)-BHP Billiton	659,316.65
22	Clearing for Result project-UNDP	3,687,460.87
23	Mine Clearance project (Contracts/Development)-Agencies	69,306.49
24	Asean Integration Fund-Asean Integration Fund*	369,301.32
25	Integrated Mine Action in Development Project-AustCare*	182,963.92
26	Integrated Mine Action in Development Project-AustCare*	8,129.32
27	Peace Boat Koh Ker Aug-Dec,06-Peace Boat	32,467.48
	Total	**9,446,361.59**

Note: ** crossing the year*

2. Presented by Main Activities:



2.4. Logistics and Human Resource Management

To run field operations smoothly, it is very important to focus and consider logistics and human resources management. The responsibilities of Logistics Section cover the areas of logistics support, maintenance and transportation, assets control and management, whereas human resources management focused on *health care and human resources development and management, etc.*

1- Logistics Section and Procurement

CMAC is an operation driven institution and operate based on stock. Logistics and Procurement Office needs to identify and purchase the quality materials and equipment, and timely re-supply to support operations on the ground. However, as a non-profit institution, CMAC have no reserve fund, only the budget allocated in certain projects that can be used to purchase materials to support their operation activities within the project. In this connection, CMAC needs also the equipment and materials support from donor communities and partners to enable CMAC to improve demining productivity with efficient, safety and quality manner.

Some of the key achievements of Logistics Section during the year can be illustrated, as follows:

- Conducted a 2-day workshop on Support Issues to discuss and identify the best way to improve support system and lesson leant. All participants raised and shared their success experiences, and actively involve in discussion on several issues including supply system/General Stock Management at Demining Units level, vehicle maintenance, fuel consumption, weaknesses found by internal and external auditors and plan to address with these finding. The Workshop received also valuable comments and advises from the top management of CMAC on support issues as well as strategic plan of CMAC in achieving the set target of the Royal Government of Cambodia "Mine and UXO Impact Free by 2015",
- Conducted and reconciled the first stock taking results for expendable store, prepared and sent the report to CMAC top management,
- conducted stock taking for fixed assets, and coordinated with all De-mining Units and concerned sections in conducting this stock take,
- Regularly updated the fixed assets movement, its status and users into SunSystem based on reports from Demining Units, Spot Check and Stock Take results,
- Regularly conducted fixed assets reconciliation with Finance Department. As results of this reconciliation, we corrected 6 assets description and added 28 assets serial number in SunSystem,
- Prepared concern documents on fixed assets suspected to be lost, submitted to Property Survey Board (PSB) and requested appropriate way and action on these assets. The PSB hold meetings to discuss this issue and as results, 34 items agreed to write-off, 14 recovered items agreed to re-register into Fixed Assets List, 6 items need further investigation, and agreed to penalize 17 staff/users for the loss of 15 assets at its present value,

- Coordinated with Finance Department to dispose the broken assets including 39 units of motorbike, 20 sets of Shelter, and write-off the broken/loss assets including 02 unit of mine detector F1A4, 02 unit of VHF handheld and 25 GMC Trucks and one mine detection dog from CMAC Fixed Assets Register List,
- With the approval from the Embassy of the United State of America (Office of Defense Cooperation), 109 Schiebel AN-19/2 and 12 GMC trucks were transferred to the Royal Cambodian Armed Forces (RCAF) for training purposes,
- CMAC received 2 broken GMC trucks from MAG and these trucks already registered into CMAC Fixed Assets List,
- Coordinated with Finance Department to register donated and purchased assets in 2007 including 21 mine detection dogs from NPA, 2 sets of LCD Projector and 19 sets of metal selves from UNICEF and 67 items purchased by Demining Unit 6 into CMAC Fixed Assets List (SunSystem),
- Strengthened the implementation of Re-supply system to Demining Units and to operation sites as well, and coordinated with concerns Department to equip for new establishment and re-structured teams,
- Coordinated with Finance Department to strengthen the implementation of General Stock and solve the problems occurred during this implementation,
- Provided mine detector maintenance services to all Demining Units. In 2007, Mine Detector Section repaired 1,288 sets of mine detector in which 1,256 sets are F1A4 mine detector, 30 sets are Ebinger UPEX 740M detector and 2 sets are F1A4-UXO detector,
- Coordinated with Explosive harvesting Program (EHP) in order to get recovered explosive to support CMAC operation on the ground. With this explosive, CMAC has saved a lot of money that so far spent for purchasing explosive. In 2007, CMAC issued explosives (TNT) from its stock amount to 3,696.85 kg, in which 1,652.2 kg or 44.7% received from this Explosive Harvesting Program. In addition, CMAC issued other explosives including 8,610 each of detonator non electric, 6,704 each of detonator electric, 32,345 meters of detonator cord, 6,533 meters of Safety fuse and 3,960 each of igniter time blasting M60 to support its operation on the ground,
- Conducted surprise check on the explosive used of the mobile teams and evaluated the requirement of explosive to support CMAC operation,
- Coordinated with TA Corporate Management to prepare follow up project to submit to JICA Cambodia in order to request brush cutter spare parts, mine detector spare parts and vehicle spare parts for equipment and machinery maintenance. The project was positively replied by JICA Cambodia, and these spare parts were delivered to CMAC and were further distributed to Central Workshop, Mine detector Office and Demining Units for maintenance activities,
- Conducted spot check on store custody, management and utilization at Demining Units,
- Coordinated on custom clearance for donated equipment and purchased equipment/materials including spare parts for mine detectors, vehicle and brush cutters, cutting tools, battery and tires, etc.
- Provided support services on fuel utilization contract with tax exemption, suppliers contracts and visa arrangement for technical advisors.

2- Maintenance and Transportation

Transportation is the biggest component of CMAC operation and as such constitutes the largest cost items in the inventory. The cost is cumulative in spare parts, fuel and maintenance costs.

The Maintenance and Transport Section has take its effort to manage the transport means to ensure the quality and reliability to support the operation on the ground. The remarkable achievement of this section can be presented, as follows:

- Upgraded 78 vehicles to replace the un-serviceable vehicles of the operational teams especially Brush Cutter, Mine Risk Education and Reduction teams, Community De-mining teams and new establishment teams (EDD, EOD) of the De-mining Units, Eastern Regional Office and Contractual Services Projects,
- Conducted vehicles maintenance to support and ensure the smooth run of CMAC's Headquarters operation,
- Conducted spot check on the used of vehicles of the Demining Units, Training Centre and projects,
- Provided training course on vehicle preventive and maintenance for drivers, platoons and teams leader,
- Joint and led in discussion on the vehicles management, maintenance and fuel consumption in the Support Workshop to identify the issues and find out the best solution to improve this section,

With the support facilities and tools from the people of Japan, Central Workshop (CWS), as a services provider in maintenance, has conducted 210 vehicle-repairs including upgraded 36 time-vehicles and Service "C" 174 time-vehicles from all Demining Units. CWS also conducted Services "A" and "B" types and other repairs for DU2 vehicles and other projects including service "A" 97 time-vehicles, Services "B" 60 time-vehicles and other repairs 412 time-vehicles.

For brush cutter, CWS has conducted 156 time-brush cutters checks/repairs in all Demining Units.

In addition, CWS has conducted vehicle condition survey in Demining Unit 1, 2, 3, 4 for 131 vehicles and 23 Brush Cutters, and found that 40 vehicles and 4 Brush Cutter machines need medium to heavy repairing.

In regards with training activities, CW cooperated with DynCorp International conducted 4 courses on management, quality control, Safety and its impact. Also, with cooperation with Training Centre and Department of Training, Research and Development conducted a training course on brush cutter basic maintenance for 22 trainees.

3- Medical Section

Medical staffs have used all their best effort to provide hygiene education and health promotion, consultation and treatment in order to improve CMAC staff health, especially the deminers who are working on the mine fields in the remote areas.

Anthelmintic for field staff

The disease statistics, suspicion of disease 80%, and mine and UXO accident can be summarized, as follows:

No.	Description	2005	2006	2007
1	Medical Consultations, cases	41,825	39,920	34,387
2	Hospitalized, case	272	210	211
3	Infirmary rest, case	328	305	289
4	Malaria, case	104	67	49
5	Mine/UXO accident	11	8	10

As mentioned in the table above, in 2007, the medical consultation and malaria was decreased by 13.86% and 26.66% respectively, if compared to 2006.

CMAC has deployed 54 medical staff with various education level including doctors, medical assistants and nurses. Health and safety promotion is one of the important activities of Medical Section. There are various activities were implemented in 2007 including:

- Physical check for new recruitment and re-deployment staff (158 persons) and field staff medical check to promote health care (1,771 staff) and hygiene education.


First Aid Kit Check and Refill

- Conducted the life saving training & health education courses at Training Center for 796 trainees for medic, deminers, platoon leaders, EOD staff, BC staff and mobile teams staff from different projects,
- Conducted 181 MEDEVAC exercises at mine/UXO field,
- Malarial prevention through spreading chemical solution at site accommodation weekly and treating mosquitoes net, and distributed insect skin repellent to all field staff,

Medevac Exercises

- Introduced and implemented Environmental friendly, living condition of the field staff as well as working environment,
- Monthly check and refill first aid kit for all platoons and teams, and
- Conducted the health care promotion by anthelmintic on field staff,

4- Human Resources Section

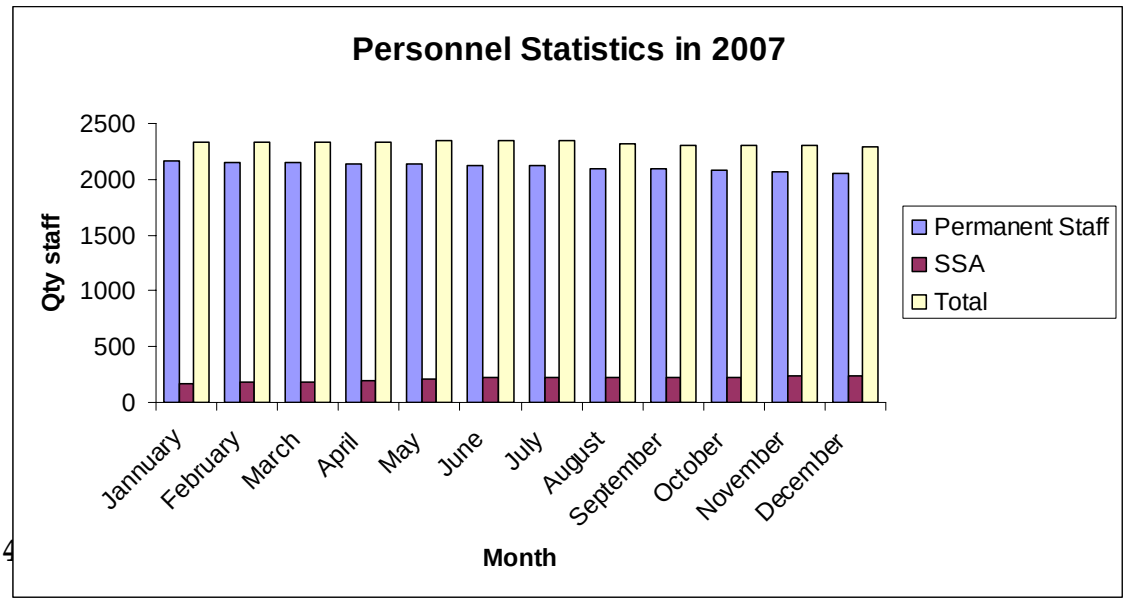
4.1 Staff Deployment

CMAC, by the end of 2007, deployed 2,292 staff including 2,057 is permanent staff and 235 SSA staff. These staff was deployed in various locations and can be summarized, as follows:

No.	Location/ Operation Site	Permanent Staff	SSA Staff	Total (Dec 07)
1	Headquarters-PNP*	107	28	135
2	Training Center	42	22	64
3	Demining Unit1	366	23	389
4	Demining Unit2**	552	38	590
5	Demining Unit3	297	25	322
6	Demining Unit4	298	20	318
7	Demining Unit6	243	19	262
8	Eastern Regional Office***	142	60	212
		2,057	235	2,292

Notes: ** included mobile teams (34 per.), ** included CW (19 per.)*
**** included BHPB (88 per.)*

The number of staff is slightly varied from month to month throughout the year. The maximum quantity was reached 2,351 in June and dropped to a minimum quantity 2,292 in December.



4.2. HR Policy and Procedures

In 2007, CMAC has reviewed and improved their HR policy and procedure, Occupational Health and Safety Policy, in order to motivate their staff performance as well as to promote and improve deminers' livelihood by amending the total capital sum of compensation fund from $4,000 to $8,000 and provide addition $1,000 for permanent disabled staff (loss both legs, both hands or both eyes etc.) injured in performance their official duty. Due to this policy amended, all compensation lines increased to double amount. For instance, the compensation amount for the death has increased from $1,200 to $2,400, and the maximum compensation amount for disability termination is $2,400.

In addition, CMAC has created and implemented a retirement package, provision fund, incentives for good performance staff, funeral cost and staff contribution policies, and pregnancy policy for field staff including deminers, close markers and dog handlers.

As results in implementing the policies mentioned above, in 2007, can be summarized, as follows:

- CMAC has compensated their staff amount to $93,497 including $6,745 paid for retirement (2 staff), $43,600 paid for the death (14 staff), $800 paid for traffic accident (1 staff), $5,712 paid for mine accident (4 staff) and $36,640 paid for disable and chronic illness (31 staff),
- 522 staff including 296 staff in US project, 139 staff in JMAS project and 87 staff in BHPB Project have received provision fund amount to 30$ per month,
- 94 staff including 85 staff (all project staff) in BHPB project and 9 truck drivers (7 staff in US project and 2 in Clearing for Results project) received incentive amount to $25 and $10 per month respectively,
- 16 pregnancy staff were temporary postpone their work,
- 30 staff was permitted to take leave without pay,
- 8 staff was permitted to take sick leave, and
- 5 staff was permitted to take maternity leave.

4.3 Staff and Teams Re-structure

In the first semester 2007, CMAC has re-structured their resources, staff, to fit with the requirement of demining environment in Cambodia. In the process of re-structure, fund availability and the effective and efficient used of those limited fund were taken into consideration in order to minimize the production cost. However, in the re-structure process, the Personnel Committee as well as CMAC's top management have do all efforts to ensure that there is no staff lost their job. The re-structured can be summarized, as follows:

Staff Participation in Restructuring Process

1- Restructured 9 mobile platoons of Demining Unit 3 from 30 persons per platoon to 25 persons per platoon in order to implement demining method i.e. one lane one man drill. In addition, the position of truck driver was amended to Assistant platoon/truck driver. The remaining staff were re-arranged to fill up the vacancy posts,
2- Demobilized one site and 3 normal platoons of Demining Unit 6, and re-arranged staff to establish 3 mobile platoons, and demobilized three mobile platoons of Demining Unit 2 to fill up the vacancies post of other mobile platoons and teams,
3- Established 4 EDD Teams and these teams are being deployed at Eastern Parts of Cambodia,
4- Established 5 Explosive Remnants of War Intervention Teams (ERI) and converted 3 Community Demining Teams (CMC) to 4 Explosive Remnants of War Clearance Teams (ERC) for Eastern Regional Office in order to support explosive remnants of war clearance activities at eastern part of Cambodia,
5- Restructured 2 EOD teams from 3 persons per team to 5 persons per team, established 1 EOD team with 5 persons, and converted CMC teams into Battle Clearance Team (BAC) with 10 persons per team for BHPB Project in Modulkiri province,
6- Reviewed the structure of Community-based Demining Team (CBD) for JMAS Project by integration staff/deminers from mobile platoon with community deminers, and re-arranged staff to fill up the new structure, which is agreed by CMAC's top management, JMAS as well as the Embassy of Japan to the Kingdom of Cambodia. The transportation mean (truck) and extra equipment were added to ensure the smooth run of this project,
7- Re-arranged staff of the Department of Operation and Planning to fill up the reviewed work structure of MDD and MRE Offices,
8- Established Department of Training, Research and Development, and recruited, re-arranged staff to fill up the positions of this department.

4.4 Staff Recruitment and Separation

4.4.1 Staff Recruitment

Internal recruitment

- 9 staff including 2 Officers, 4 Instructors, 2 Team Leaders and 1 assistant was recruited to support CMAC's activities,
- 404 staff were re-allocated their work station to support the operation activities on the ground.

External Recruitment

- 22 Community-based UXO Risk Reduction (CBURR) were recruited and employed in Kampong Cham, Kandal, Kratie, Stung Treng, Ratanak Kiri and Mondul Kiri provinces, trained and deploy one CBURR per district to support the operation of the J-AIF , JMAS and BHPB projects, and one Community-based Mine Risk Reduction (CBMRR) was recruited and employed in Battambang province,
- 18 Community-based deminers and 1 community medic were recruited and employed in JMAS, AusCARE and Grass-root project in Battambang, Banteay Meanchey and Preah Vihear provinces,
- 4 Dog handlers (EDD) were recruited and employed in Eastern Part of Cambodia,
- 10 Drivers and 2 Mechanics were recruited to support CMAC's activities,
- 3 Medics were recruited to fill up the vacancy post in 3 mobile platoons,
- 12 support staff including 2 Officers, 4 Assistants, 1 Communication operator, 2 interpreters, 1 clerk, 1cleaner and 1 security guard,
- 3 Information System staff, volunteer student-bachelor degree, was recruited, trained and employed in the position of Administration Assistant/IT in Demining Unit 2, 3, 4 to improve the communication and maintenance the IT equipment.

4.4.2 Staff Separation

From different reasons, there are 161 staff was terminated their contract with CMAC, as listed bellows:

- Abandon the post = 53 persons
- Dismissed (Disciplinary/Poor performance) = 05 persons
- Disable and chronic illness = 31 persons
- Seriously injured by mine accident = 01 person
- Resignation, and = 39 persons
- Temporary termination (Pregnancy) = 16 persons
- Retirement = 02 persons
- Death = 14 persons

4.5 Staff Training and Motivation

Staff Training

CMAC top management has defines that staff capacity building into multi-skill, more professionalism and discipline is a key success of CMAC as well as demining operation in Cambodia. In this connection, CMAC, in 2007, has internally conducted 58 courses with 1,783 trainees and 15 trainees were trained externally.

In term of multi-skill promotion, CMAC has trained, provided different skill to, their staff including 10 staff were added EDD skill and these staff have a potential for EDD team leaders, 25 staff were added demining techniques, 56 staff were added EOD skill, 19 staff /deminers were added Close Marker skill, 20 staff were added AutoCAD/GIS skill. CMAC has also upgraded capacity of 15 staff from EOD level one (Basic) to EOD level 2 (Advance).

In addition, in cooperate with BHP Company, 82 staff were trained in various subjects including shallow and deep search using CIA, FEREX and DGPS, technical survey, CBURR, refresher training in first aid, driver, communication, administration, finance, medical and logistics, and basic HSEC.

To improve community participation and network in mine action, CMAC has trained 40 local people on demining techniques (18 people) and community-based UXO risk reduction skill (22 people), and Most of these skilled people were employed by CMAC.

In term of knowledge and experiences sharing, CMAC has allowed 65 students to conduct their practices in various fields including Human Resources Management, Staff Motivation, Recruitment Process, and Logistics Management, Information System management, Mail Server Management, Networking, Account, Finance and administration affair. In addition, CMAC also allowed one foreign student, volunteer, to conduct their practices and share experience in Project Management and Proposal Writing.

Staff Motivation

In term of staff motivation, CMAC has provides an equal opportunity to all staff to get training (Detailed in point 4.4.1), promote to higher position, increase salary paid, change position, re-allocate work station that can be summarized, as follows:

- Promoted to higher position = 310 persons
- Increasing the salary paid = 49 persons
- Changed position = 42 persons
- Re-allocation work station = 60 persons
  (Near to their house/their home town)

5. Further Action Plan

- Strengthen the implementation of General Stock, re-supply system to support CMAC operation activities on the ground,
- Screen and determine the actual equipment requirement for platoons and teams, identify the surplus equipment and re-allocate to support platoons and teams that need these equipment, prepare 5 years equipment requirement and replacement plan for CMAC,
- Prepare list of broken assets and obtain approval from the Property Survey Board (PSB) in order to dispose/write-off these broken assets,
- Strengthen vehicles and heavy machines preventive maintenance, and conduct training on driving technique, and maintenance and transport policy and procedure for all drivers and team leaders,
- Cooperate with Japanese TA to strengthen the function of Central Workshop in vehicles and heavy machines maintenance,
- Coordinate with Departments, Training Centre to arrange courses and staff need to be trained in various subjects including EOD, BAC, Front Line Managers, Mapping and Navigation etc.,
- Coordinate with relevant sections to finish restructure mobile platoons from 30 persons per platoon to 25 persons per platoon in order to implement one lane one man drill,
- Prepare updated structures of headquarters, de-mining units, Regional Office, platoons and mobile teams and report to top management,
- Review HR policies including pregnancy and staff traffic accident etc.,
- Cooperate with Japanese TA to complete the HR Database System, and Fixed Assets Trucking System (FATS),
- Continue health care promotion of field staff through health care education, anthelmintic and other multi-vitamins plus minerals,
- Conduct blood check for CMAC staff for some critical diseases,
- Conduct preventive measure against opportunistic infection of HIV positive staff, and
- Disseminations health information through publication of health flashes "Prevention is the best".

2.5. Operational Overview

2.5.1 Integrated Work Plan 2007

In 2007, CMAC planned to clear a total area of 25,308,000 m² which is slightly lower than total clearance in 2006. This is because of the demobilisation of 4 mobile platoons and a two month gap in the Grassroots project in DU2 during January – February 2007.

From this, 251 sites would be cleared for development. These included 26 sites for resettlement, 30 for resettlement and agriculture, 102 for agriculture, 44 sites for rural roads (equivalent to 108,260m of road), and the remaining for water canals/irrigation, schools, water ponds, pagodas and others. This clearance activity was expected to benefit 168 villages which were located in

the high casualty areas. In other terms, this clearance effort would benefit 2,740 families directly, 16,828 families indirectly, and a total of 1,132 school children. Approximately 114,457 people were expected to benefit from CMAC demining operations in 2007. In addition to these, CMAC planned to release landmine/UXO threats through its risk reduction tasks carried out by small quick response teams. At the same time, CMAC will collect and destroy approximately 117,900 UXO. If the demolition of one UXO can save an average of five lives potentially saved from UXO accidents in 2007 and subsequent years would be approximately 589,500 people.

2.5.2 Clearance Progress

As a leading demining organisation in Cambodia, CMAC continues to make every effort to increase its demining productivity to release as much land as possible back to productive use by the communities. From 1992 to December 2007 CMAC achieved the following operation outputs:

- Number of minefields cleared: 3,565
- Cleared 199,714,947 m² of contaminated land
- Area reduction achieved: 41,299.07 ha
- Found and destroyed 378,980 anti-personnel mines
- Found and destroyed 7,160 anti-tank mines.
- Found and destroyed 1,255,927 UXO's,
- Found and destroyed 334 improvised mines,
- Found 38,242 kg of small calibers, and
- Unearthed 382,894,661 fragments.

In respect to the clearance in 2007 CMAC achieved as follows:

- Number of minefields cleared: 570
- Cleared 27,666,058 m² of contaminated land.
- Area reduction achieved: 19,062.94 ha.
- Found and destroyed 32,245 anti-personnel mines.
- Found and destroyed 587 anti-tank mines.
- Found and destroyed 114,755 UXOs,
- Found and destroyed 273 improvised mines,
- Found 6,706 kg of small calibers, and
- Unearthed 24,732,667 fragments.

It is important to note that in addition to the above progress in finding tangible objects and clearing land, CMAC also made major advances and

produced significant results in intangible areas such as mine risk education, minefield information/survey, training and research and development in mine action.

Mine/UXO Risk Education Activities:

Activities	Achievement			
	MRE	CBMRR	CBURR	Total
Number of villages reached	512	144	5,834	6,490
Number of sessions delivered	526	-	8,991	9,517
Households visited	15,195	32,781	36,029	84,005
Total number of people attending mine risk education	62,747	138,319	139,032	340,09

It is worthwhile to note that in 2007 there was a slight increase in the area cleared to the previous two years (2005: 22 km², 2006: 26.7 km²) with the total area cleared at 27.6 km².

However, with respect to any increase or decreases in the clearance targets, it is very important to note that the actual achievements of the set targets on ground clearance can be influenced by a variety of factors; such as, weather conditions, terrain, operator experience, etc.

2.5.3 Establishment of ERO

On 10 January 2006, a new Eastern EOD Regional Office (ERO) was established to be a central point of UXO clearance and risk education activities in Kampong Cham province. This Office was established to manage and supervise ERW activities in eastern provinces such as Kampong Cham, Prey Veng, Svay Rieng, Kratie, Stung Treng, Mondul Kiri and Ratanak Kiri to respond to the community requirements for response to explosive remnant of wars in these areas. As the economic and development activities are starting to take roots in these provinces, including mineral exploration, it is expected that the economic and demographic boom in the area will increase the level of threats posed by the presence of ERWs in the areas.

2.5.4 Establishment of MRER and CMC Teams

Another aspect worth mentioning is the conversion of the former mine awareness teams, which delivered pure mine awareness education, to be mine/UXO risk education and reduction (MRE) teams. The MRE team is a multi-skill team which carries out risk education as well as risk reduction by disposing of UXO as they collect from the communities they visit. CMAC's partners, including UNICEF, HIB, Austcare and NPA, have contributed a great support to this effort. The key principles behind establishing these MRE teams are flexibility, responsiveness and reliability. This means that these teams do not only talk (provide awareness education), but they also do the action (collect and destroy UXO).

In an effort to increase the efficiency and effectiveness to provide quick response to the requests for risk reduction and small scale development by the affected communities, in 2005 CMAC took a bold initiative to reform its operational teams by conducting trial of a new team structure called Community Mine Clearance (CMC) Team. The purpose was to design an appropriate and reasonable team structure to replace the Community Mine Marking Teams (CMT) and Mine Risk Reduction Teams (MRT), taking into account past experience, nature of problems and tasks, mobility, appropriateness of team structure, and other factors. The trial proved that the new concept was appropriate, more efficient and more responsive, and therefore recommended the establishment of the CMC teams to replace the CMT and MRT teams.

A CMC Team consists of 9 people: 1 Team Leader, 1 Senior Member and 7 Members. The task of the CMC team is to conduct small scale clearance of land up to one hectare (10,000 m²) to provide risk reduction and support development. These Teams clear minefields identified, prioritised and selected by PMAC/MAPU, put up long term marking, as well as respond to the risk reduction tasks requested by the communities on an emergency basis.

Through one year of opeartions on the ground, CMAC realises that the CMC concept is very effective and efficient in terms of deployment and flexibility response. The CMC teams are also trained in UXO search and demoliton and are equipped with UXO detectors. So, in addtion to clearing minefieds, these teams are also capable of clearning UXO fields. In additon to the multi-skills, the CMC team structure allows great flexbitlity and efficiency in small scale and rapid deployment, therefore they are very much appreciated by donors and partners for their quick response.

2.5.5 ERW Risk Reduction

The explosives remnants of wars scattered virtually everywhere in the country after the three-decade long conflicts and heavy US bombing continue to pose fatal threats to millions of civilian population. The evidence of the magnitude of the ERW problem lies with the high casualty rate that Cambodia suffers from. The attrctive shape and scrap metal trade for scarce cash makes these ERW one of the most dangerous killers in post-war Cambodia. Furthermore, with the expanding economic and commercial activities as a result of road links and mining

contracts in the eastern provinces, it is expected that the response to the ERW problem needs to be increased.

Due to this emerging demand, CMAC planned to expand its EOD capacity in the eastern provinces to respond to the growing economic and development activities in the areas. EOD skill is yet another challenge since this is a very highly technical field compared to landmine clearance and disposal. With this challenge in mind, CMAC has made every effort to strengthen its EOD capacity through training, on-the-job training, exchange of experience and publication of EOD Handbook.

Similarly, the recent ERW Study conducted by CMAA and NPA with the financial support by the US State Department stresses the importance of the increased EOD response and the important role of CMAC in the long term EOD operations, in conjunction with other key players such as the National Police and the Armed Forces. This study has become the basis for the National EOD Strategic Plan, which recognizes CMAC as a long term key player in EOD operations. The Plan also calls for the establishment of the Centre of Excellence for EOD, and the existing CMAC's Training Centre is expected to be utilised for this purpose.

Today, as CMAC strives very hard to take every effective measure to respond to the UXO problem, EOD tasks no longer solely belong to the EOD teams. Even though the EOD teams still play the main role in the EOD response, other teams such as CMC and MRE teams also play a very important role in this field of operations. Following a series of reforms and improvements, the CMC and MRE teams have been equipped with skills and EOD gears to perform UXO search and demolition activities. Their multi-skills and tasks have significantly strengthened CMAC's capability and flexibility to respond to different EOD task nature, requirements and size. CMAC also trained 4 explosive detection dogs (EDD) in 2006. The training shows very positive results and big operational potential for the EDD, and they were deployed in real

UXO fields in 2007. In addition to these teams, the local UXO network, known as Community-Based UXO Risk Reduction (CBURR), also plays a very important role as the local network to facilitate information flow and UXO risk education. The CBURR networks have played a very important role in ensuring that the communities have a strong residual capacity to collect and pass on mine/UXO information, provide UXO risk education, and support UXO risk reduction and community development planning. Strengthening the local police to be the UXO focal point is also an effective strategy to involve the local communities and authorities to tackle the UXO problem. In this respect, CMAC has provided training to hundreds of police officers from high impact and high casualty districts identified through the CMVIS casualty reports.

2.5.6 Technical Survey


Members of TST 10

The primary aim of CMAC's technical survey is to collect and verify landmine and UXO contamination information to quickly and reliably identify and classify the contaminated areas, level of risks and to enable the clearance requirements to be more clearly defined. CMAC has been implementing technical survey since 2002, and the concept of CMAC's technical survey has evolved ever since. Through experience and practice in the field, and to respond to the national strategy of accelerated area reduction, CMAC has sought different measures to improve its technical survey capability and efficiency in order to identify the real threats and release non threat and low threat areas.


Members of TST 5

In order to speed up technical survey information collection, CMAC redefined its technical survey concept and process in late 2006. In this new concept, technical survey utilises the community-based mine risk reduction network members as the moderator of information by using all existing sources of information within their community and by coordinating with key informants as well as the local authorities to ensure that the obtained information is verifiable and reliable.

While the new concept of technical survey involves a lot of inputs from the local authorities and the CBMRR, its outputs (mine/UXO contamination maps) are distributed more widely to the village authorities, PMAC/MAPU and CMAA for planning and prioritisation purposes. Land released through this process can also be removed from the contamination map in the national database.

CMAC technical survey is designed to produce three main outputs. Firstly, it aims to provide a sustainable mine action information tool at the community level by providing appropriate training to the Community-Based Mine Risk Reduction (CBMRR) members and their volunteers on how to regularly and systematically update the landmine and UXO problem within their community on a provided map. A similar training is also provided to the Provincial Mine Action Committee (PMAC) members for the same purpose - updating and using the map for the planning and prioritisation purpose. This effort can naturally strengthen the communication and cooperation between the affected community (CBMRR) and local authority (PMAC) for both prioritisation and planning processes. Secondly, the technical survey defines a new road map for the affected community by identifying the real threat of landmines and UXO and classifying the level of threats and technical requirements for subsequent clearance operations. Thirdly, this effort frequently reduces a significant size of suspected landmine and UXO areas previously identified by the Impact Survey. The released areas, through the process called area reduction, can be recorded and mapped in a systematic and professional manner.

In 2007, CMAC's technical survey teams achieved a total of 19,062.94 ha of area reduction from the Level One Survey records of suspected areas. In addition, they found a contaminated area of 14,005.33 ha outside the Level One Survey.

2.5.7 The Mine and Explosive Detection Dogs (MDD and EDD)

Mine Detection Dog has become one of the most important and effective demining tools in the recent years, and many demining organisations are becoming more and more confident in utilising dogs to support demining activities. CMAC has established and sustained an effective operational MDD program, and has extended this service to support MAG's demining operations in Cambodia.

Mine Detection Dog in operations

In 2006, CMAC increased, by two, the number of MDD teams available for operational use to raise the teams to four. In 2007, CMAC had 10 short leash and 4 long leash teams being utilised by Demining Units 1, 2, 3 and 4 this has greatly increased the ability for teams to respond to different types of terrain and minefield conditions.


Explosive Detection Dog Training Activities

CMAC has a clear vision to expand and strengthen its capacity in the field of ERW in the coming years. As part of this commitment, CMAC has recently initiated to develop the new concept of Unexploded Ordinance Detection Dog (EDD), which will become another essential tool for UXO clearance operations. The current CMAC EOD capacity has been focusing on collecting UXO on the ground mostly reported by the police and the communities. However, today there is a greater demand for underground UXO clearance for subsequent use of these UXO affected areas for economic and rehabilitation activities. CMAC's EDD has been developed and trained with the dedicated support by the Norwegian People's Aid (NPA) and its MDD Training Centre in Bosnia (the GTC). In 2006, CMAC started to train 4 explosive detection dogs (EDD) to further speed up the ERW clearance operations. In 2006, CMAC trained 4 explosive detection dogs (EDD) to further speed up the ERW clearance operations. In 2007 these teams were deployed and fully operational and significantly speed up clearance operations on the ground. This ordnance still poses a formidable threat to Cambodians mainly due to the massive number of UXO still scattered throughout the country.


Explosive Detection Dog Training Activities

2.5.8 Linking Mine Action and Development

CMAC's long experience and simple business model make it ideal for linking mine action and development. CMAC does this by placing great attention on the post-clearance development of areas which have been cleared. This is processed, managed and monitored through its Socio-Economics Branch and Sections, and socio-economic impacts and beneficiaries are considered in CMAC's Integrated Work Plans.

In 1999, CMAC introduced the concept of the Land Use Planning Unit (LUPU) and established the Socio-Economics Sections at the Demining Units and the Headquarters. The purpose was to decentralise minefield selection to the local and provincial authorities to empower them as well as development organisations and partners to secure a fair and transparent mine clearance planning process to ensure the proper use of land cleared for humanitarian and development purposes. The LUPU was an ad hoc provincial body created by a provincial sub-decree and placed under the authority of the Provincial Rural Development Committee (PSC) and the provincial sub-committee on the use of land in mine areas. In September 2000, a sub-decree of the Royal Government of Cambodia (RGC) established Cambodian Mine Action and Victim Assistance Authority (CMAA), and the LUPU mechanism was revised to become the Provincial Mine Action Committee (PMAC), and the Land Use Planning Unit (LUPU) became the Mine Action Planning Unit (MAPU). Today, CMAC strictly follows the PMAC/MAPU process in minefield prioritisation and selection for clearance. Through this process, collaborative decisions can be made and land to be cleared is targeted for subsequent development.

CMAC also has long experience working with development partners such as Austcare, CARE International, NPA, Peace Boat, Rotary Club, and ZOA. In addition to clearance support, these organisations provide development support to the mined communities to re-activate their livelihood, improve their living conditions, enhance their social integration and raise their esteem and value. These activities have contributed enormously to the Royal Government's effort to poverty reduction and eradication.

2.5.9 Research and Development Activities

The challenges in mine action in Cambodia and worldwide require CMAC to maintain competitive advantages (do more with less) through improved technology and methodology. As highlighted in the section on how technology can assist in mine action, CMAC has long experience with using machines to assist demining activities. In this respect, CMAC recognises the importance to acquire and maintain a residual mechanical demining capacity through quality training and research and development activities. Today in the changing and competitive mine action environment, CMAC regards research and development as a very important component in its mine action.

Deep Search Testing Activities

In 2007, CMAC carried out a number of research and development projects including the continued Explosive Harvesting program supported by the US Government, the Project for Research and Development of Mine Clearance Related Equipment supported by the Government of Japan, the Sifting Bucket Testing Project, the Magnet Test Project, etc. The Project for Research and Development of Mine Clearance Related Equipment was a major project conducted in the reporting period, bringing 3 demining machines, 3 GPR mine detectors and 1 buggy for detector mounting.

Deep Search Testing Activities

Sifting Bucket Testing Activities with US experts

In addition, CMAC has also established high standard and quality test facilities in Siem Reap and in Kampong Chhnang, able to house test and evaluation of mines and UXO detectors of various types and depths (up to 12 metres deep). The construction of these test facilities were supported by the Japanese and US Government. These test facilities will be able to house and accommodate any types of tests. In addition to the facilities, CMAC also upgraded the skills and experience of its staff to plan, manage, and carry out quality test and evaluation of mine clearance related equipment.

2.5.10 Center for Training and Research & Development in Mine Action and Explosive Remnants of War

This newly constructed centre lies on the twelve-hectare plot of land about 20 km from Siem Reap town on the National Road 6. This centre houses the regional demining unit headquarters, training, research and development

facilities, and a landmine and ERW showroom, which will eventually become the landmine and ERW museum in the future.


CMAC Research Development Centre in Siem Reap

This facility was opened on 12 December 2006 and is now fully operational. This centre will become the hub of mine action in Cambodia: headquarters for demining operations, training and R&D centre, and landmine and ERW showroom to promote landmine and ERW awareness and risk education. It is also expected that by opening this showroom to the public, especially foreign tourists, the centre will enhance their awareness of the landmines and ERW problem in Cambodia, thus making contributions to the efforts of addressing this problem.

As for the R&D facilities, CMAC will use this centre to promote the research and development of all landmine/UXO clearance related equipment. This will be realised through the conduct of test and evaluation of mine/ERW clearance related equipment. CMAC constructed very professional test lanes for mine detectors, both handheld and vehicular, which have already been used to test mine detectors developed and manufactured by Japanese companies and research institutions. CMAC will open this test facility to other research and development organisations which want to test and evaluate their equipment.

OPERATIONAL ACHIEVEMENT

OPERATIONAL DEPLOYMENT

In 2007, CMAC had signaled an important change in the CMAC's resources and deployment in order to strengthen its operational demining capacity in terms of to gain more safety, efficiency, effectiveness and productivity in responding and intervention to the large scale of clearance and urgent tasks timely to the community needs as required. First, demining platoons were reduced from 41 (6 Normal and 35 Mobile) by the end of 2006, to 39 (3 Normal and 36 Mobile) in January and February 2007, and then from 39 to 37 (3 Normal and 34 Mobile) in March 2007, then reduced from 37 to 36 (3 Normal and 33 Mobile) in April 2007. 3 normal platoons were converted into 3 new mobile platoons (145, 146 and 147) in DU6 by the end of June 2007, in totally 36 mobile platoons are remained to continue its operations till December 2007. At the same reporting period, CMAC increased its number of EOD teams (from 21 to 27) as well as the Community Mine Clearance (CMC) Teams were reformed from 9 staff to 7 staff and increased 2 more CMC teams and Mine Detection Dogs teams (from 14 to 18 teams) due to the establishment of the 4 Explosive Detection Dog teams. The 2 Explosive Detection Dog teams were established and trained since the end of 2006 and were formed as a regular team in early of January 2007, and then conducted the trial from January to April 2007 in the real UXO field in Ok Nha Paang village, Long Vek commune, Kampong Tralach district, Kampong Chhnang. However, after trial these teams were sent back to continue their training at the CMAC's TC from May to 20th July 2007, before being

deployed in the Eastern regional Office, Kampong Cham province, while 2 more EDD teams were established in September 2007 and deployed by early of October 2007 in the Eastern regional Office, too.

As part of these, 4 new CBURR District Focal Points (DFP) were established in Kampong Cham province by providing the fund support from the Japan Mine Action Service (JMAS) in October 2007, after 4 old CBURR District Focal Points in 4 districts of Prey Veng province were phased out. The following table shows the number of teams deployed throughout the reporting year.

No.	Resources	Number of Teams Deployed in 2007											
		Ja	Fe	M	Ap	M	Ju	Jul	Au	Se	Oc	No	De
1	Demining site	1	1	1	1	1	1	0	0	0	0	0	0
2	Normal Demining Platoon (NP)	3	3	3	3	3	3	0	0	0	0	0	0
3	Mobile Demining Platoon (MP)	36	36	34	33	33	33	36	36	36	36	36	36
4	Explosive Ordnance Disposal	21	26	26	27	27	27	27	27	27	27	27	27
5	Technical Survey Team-Small	19	19	19	19	19	19	19	19	19	19	19	19
6	Community Mine Clearance	13	14	14	14	14	14	14	14	14	16	16	16
7	Mine Risk Education and	6	6	6	6	6	6	6	6	6	6	6	6
8	Community-Based Mine Risk	23	23	23	23	23	23	23	23	23	23	23	23
9	Community-Based UXO Risk	16	16	16	16	32	32	32	32	32	36	36	36
10	Short Leash Mine Detection Dog	10	10	10	10	10	10	10	10	10	10	10	10
11	Long Leash Mine Detection Dog	4	4	4	4	4	4	4	4	4	4	4	4
12	Explosive Detection Dog (EDD)	2	2	2	2	2	2	2	2	2	4	4	4
13	Mechanical Brush Cutter (BC)	25	25	25	25	25	25	25	25	25	25	25	25
14	Technical Survey Team-Large	4	4	4	4	4	4	4	4	4	4	4	4
15	Community-Based Demining	5	5	5	5	5	5	5	5	5	5	5	5

PROJECT MANAGEMENT

For many years since 1994 to date, the smooth running of mine action in Cambodia is depended on the fund support from the donors, NGOs, as well as the Royal Government of Cambodia and private sectors in order to hold CMAC's operations stably. The fund is broken down separately by each donor's project base on the nature and the requirement of the project. Through this CMAC's management of mine action activities have to take the form of the projects due to the nature of funding, timeframe and specific activities the funding is earmarked for. This means that project management has become the

core emphasis, safety and cost efficiency has been the centre of the talk.

As described above, CMAC normally received three types of funding channeled: multi-donor funding through the UNDP to support the Project "Clearing for Results", the direct single-donor funding to CMAC through Bilateral Projects for humanitarian demining, and direct contracts with private companies through the Contractual Service Unit. All funding (through all channels) to CMAC is earmarked for the agreed specific activities within a specific timeframe. It is therefore very important to manage the projects effectively considering the differences in reporting formats and requirements, audits, human resources and logistics. The following projects were implemented in 2007:

PROJECT TITLE	DONOR / PARTNER	PROJECT LOCATIONS
Clearing for Results	UNDP (Australia, Canada, AAM, Spain)	All DUs
The Integrated Demining and Development Program	Netherlands/NPA Cambodia	DU1, Banteay Meanchey
Integrated Mine Action and Development Program	Australia/Austcare	DU1, Banteay Menchey
The Project for Supporting Humanitarian Demining Activities in Battambang Province	Grassroots-Japan	DU2, Battambang
The Community-Based Demining (CBD)	Japan/JMAS	DU2-Battambang
Humanitarian Mine Action Project	USA	DU3, Pailin and Samlot (Battambang)
The Project for Supporting Humanitarian Demining Activities in the Provinces of Kampong Thom, Oddar Meanchey and Preah Vihear	Grassroots-Japan	DU4, Kompong Thom, Preah Vihear and Oddar Meanchey
Mine/UXO Clearance in Archeological Site of Koh Ker	Peace Boat, Japan	DU4, Preah Vihear
Humanitarian Demining in Siem Reap and Oddar Meanchey	Germany	DU6, Siem Reap & Oddor Meanchey
The Research and Development of Mine Clearance related to Equipment	Japan/JICS	Battambang
UXO Clearance Activities and CBURR Project	Japan/JMAS	Svay Rieng, Kandal, Kampong Speu, Kampong Cham
Explosive Harvesting Program (EHP)	USA/Golden West	CMAC Training Center (Kg. Chhnang)
Provision of MDD and Technical Assistance	NPA/GTC-Bosnia	CMAC Training Centre (Kg.

		Chhnang)
ERW Clearance in the EASTERN Province of Cambodia	Japan-ASEAN Integration Fund (JAIF)	Kampong Cham, Kratie, Steung Treng, Ratanak Kiri and Mondul Kiri
Mine Risk Education and CBMRR	UNICEF	All DUs
Post Clearance Development Project	GOOD EARTH JAPAN-HITACHI	DU2- Battambang
Post Clearance Development Project: "Building a Primary School on Land Cleared by CMAC"	Rotary International-District 2650	DU2 -Battambang
CONTRACTUAL SERVICE UNIT:		
PROJECT TITLE	**DONOR / PARTNER**	**PROJECT LOCATIONS**
One Mine Detection Dog (MDD) Contract	MAG	Battambang and MAG targeted zone
One Mine Detection Dog (MDD) Contract	MAG	Samlot, Ratanak Mondul, (Battambang) and Pailin
One Mine Detection Dog (MDD) Contract	MAG	Preah Vihear and MAG targeted zone
Mineral Exploration in Mondul Kiri	BHP Billiton	Mondul Kiri
Mineral Exploration in Ratanak Kiri and Banteay Meanchey	LMI	Ratanakiri and Banteay Mreanchey province
Path finding, surveying and surface clearance	HOLCIM Telecom.	Kampot, Kampong Speu, Kampong Cham and Kratie province
Mine and UXO Clearance in Samlot	Cambodia Mining Development Co. Ltd. (Action Group)	Battambang Province
Path finding, surveying and surface clearance on national road#1, 3, 4, 5, 6A & 7	CADCOMMS	Kampong Cham Province, Suong

It could be noted that UNDP through the Clearance for Results is one of those whom is greater flexibility in supporting different elements of its operations in addition to clearance. It was moved from the Trust Fund on 31st December 2005. In 2007, UNDP the through Clearance for Results is the 2nd phase of implementation and its support and commitment to CMAC for continuing the work towards fulfilling the mandate set by the Government of Cambodia to achieve the ninth goal of the Millennium Development Goals. UNDP is the largest source of funding. In 2007, UNDP supported CMAC with a total amount of 4,120.00 USD, the fund coming from major donors such as Australia, Canada, Spain and UNA-USA's Adopt-A-Minefield. UNDP funding is a mechanism which was addressed its strong support for many years since era the UNTAC and is still the on-going forwards. However, a financial

contributions channeled to CMAC through the UNDP Trust Fund was decreased considerably than era of UNTAC, approximately 5 to 6 million dollars per year.

Other bilateral funding, in the form of bilateral projects, continues to play a vital role in supporting CMAC's demining program and has contributed a significant portion to the total funding to CMAC. Bilateral projects are implemented and managed by CMAC directly with the donors. External audits are conducted at the end of each project, which usually last for 12 months. However, the timeframe of each project may vary from each other depending on the donor's fiscal year and project completion.

ALLOCATION OF MINE ACTION TEAMS

In accordance with the high priorities determined by the Royal Government of Cambodia through the MAPU/PMAC process and urgent requests from local authorities without MAPU/PMAC employing, and to support the community development activities implemented by development agencies, CMAC has been concentrating its mine action efforts in the high priority areas to conduct full clearance of landmine areas in order to reduce potential mine/UXO casualties and support development efforts. In response to the high casualty rate and active economic and development activities in the areas, most of CMAC's operational clearance teams as well as Intervention teams were deployed 50% in the north-western provinces where mine clearance is most needed and 17.28% in the Northern provinces. In addition, intervention teams for Explosive Remnant of War, especially the CMC (ERC) and EOD, were deployed 33.18% in eastern provinces where UXO still remains and causes a severe impact on the people. The table below illustrates the team deployment as of December 2007.

Demining Unit (DU) /Locations	Mine Action Teams												
	MP	EOD/ERT	TST-Small	CMC/ERC	TST-Large	MDD-SL	MDD-LL	MDD-EDD	BC	CBD	MRE	CBMRR	CBURR
DU#1(Banteay Meanchey)	8	2	3	2		1	2		4	1		5	
DU#2(Battambang and Pursat)	9	2	5	2	2	4	2		11	3	1	11	
DU#3 (Pailin and Samlot district)	7	2	4	1	1	3			3			5	
DU#4 (Kg. Thom, Preah Vihear, Oddar Meanchey)	6	2	2	2		2			3	1	1		
DU#6 (Siem Reap & Oddar Meanchey)	6	2	2	1	1				2		1	3	
CMAC HQ (Phnom Penh)		5	2	1									8
Eastern EOD Regional Office (ERO)		8	1	4				4			2		22
BHP BILLITON (Mondulkiri)		3		3							1		6
CMAC Training Centre (Kampong Chhnang)		1											
Total teams deployed in 2007	**36**	**27**	**19**	**16**	**4**	**10**	**4**	**4**	**23**	**5**	**6**	**24**	**36**

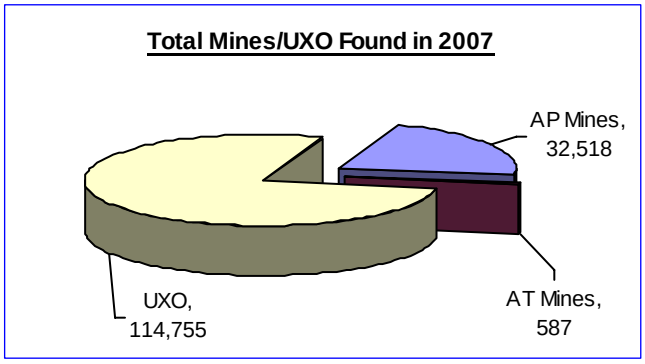
SUMMARY OF THE OPERATIONAL ACHIEVEMENTS

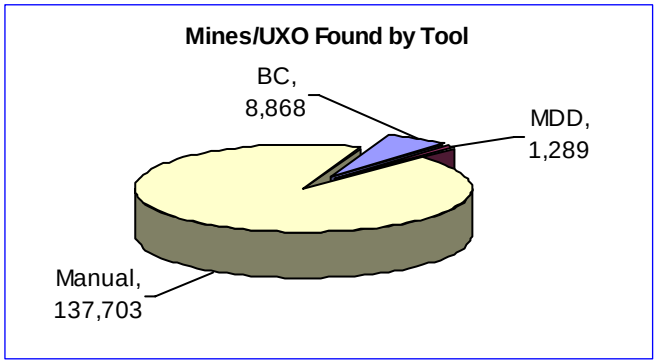
To reply to the zero-mine victim vision in year 2012 as well as to achieve the ninth goal of the millennium development plan as set by the Royal Government of Cambodia, CMAC had committed to continue its dangerous and complicated efforts effectively with a safety, high productivity and efficiency as like as the previous year and so on. However, in 2007 is the best year for CMAC which made a remarkable progress in its demining operations. The following tables illustrate a summary of the mine/UXO clearance outputs for the reporting year.

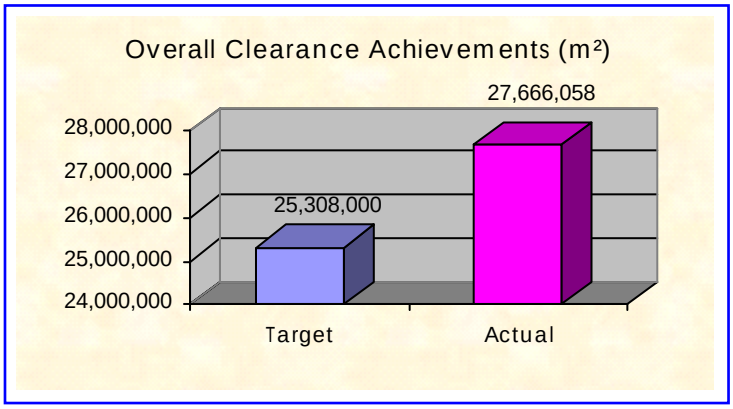
Overall Demining Achievements

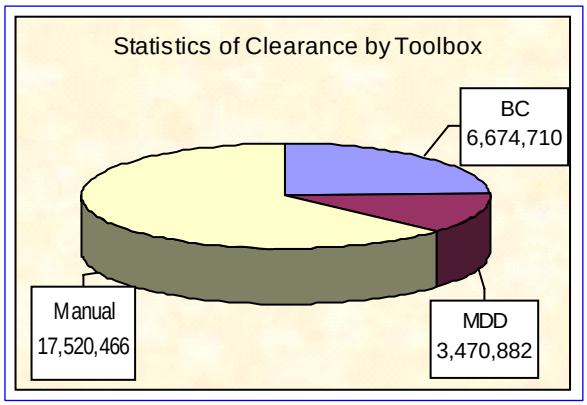
Description	Actual 2007	IWP Target in 2007	Percentage (%)
Clearance and Marking:			
Total area cleared – m²	27,666,058	25,308,000	109.32
Total number of minefields cleared	570		
Minefields marked in linear meters – m	2,893,884	2,080,000	139.13
Vegetation clearance by brush cutters – m²	8,048,382	10,220,000	78.75
Excavation of the beam soil by brush cutters – m³	178,817		
Found and destroyed: - AP mines	32,518		
- AT mines	587		
- UXO	114,755		
- Small Calibers – kgs	6,706		
Fragments unearthed (pieces)	24,732,667		
Number of tasks responded by EOD & MRE teams	9,334		
Technical Survey:			
Number of villages surveyed	174		
Total area of 445-MF in Level One Survey (L1S) – ha	25,232.28		
Total area reduction from L1S – ha	19,062.94		
Contaminated area in L1S identified/marked – ha	6,169.34		
Confirmed minefields – ha	3,218.76 or 179.MF		
Suspected minefields – ha	2,202.67 or 154.MF		
Residual minefields – ha	747.91 or 119.MF		
Contaminated area found outside L1S – ha	14,005.33		
Confirmed minefields – ha	5,881.20 or 219.MF		
Suspected minefields – ha	7,051.95 or 203.MF		
Residual minefields – ha	1,072.17 or 164.MF		

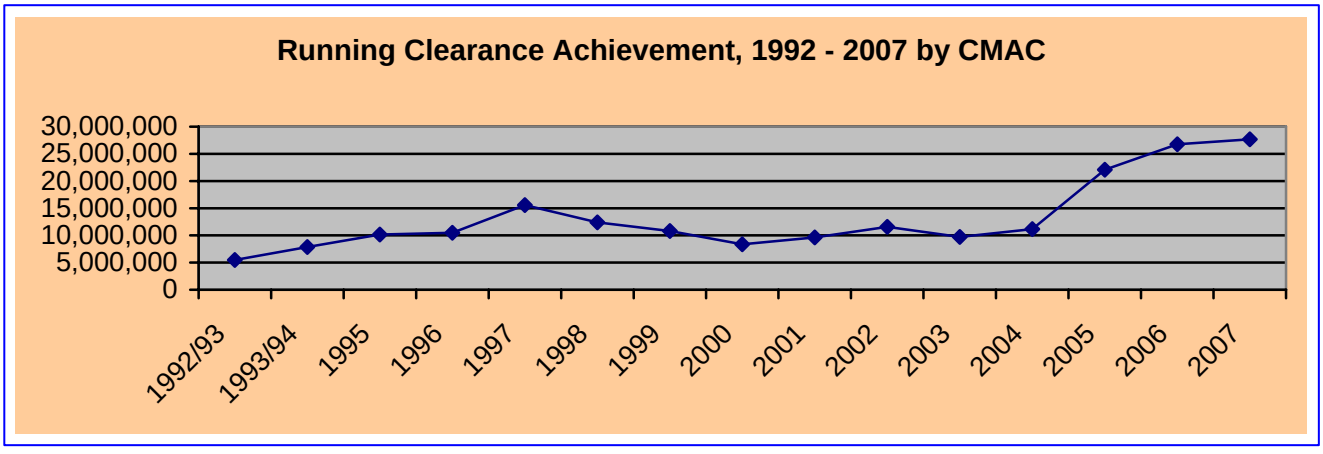
Charts of Overall Demining Achievements











Comparison between the Overall Demining Achievements of 2007 Vs 2006

Description	Actual 2007	Actual 2006	Variance (%) In (+) & (-)
Clearance and Marking:			
Total area cleared – m²	27,666,058	26,772,625	+3.34%
Total number of minefields cleared	570	585	
Minefields marked in linear meters – m	2,893,884	2,032,983	+42.35%
Vegetation clearance by brush cutters – m²	8,048,382	8,409,575	-4.30%
Excavation of the beam soil by brush cutters – m³	178,817	119,563	+49.56%
Found and destroyed: - AP mines	32,518	35,806	-9.18%
- AT mines	587	1,000	-41.30%
- UXO	114,755	113,296	+1.29%
- Small Calibers – kgs	6,706	5,236	+28.07%
Fragments unearthed (pieces)	24,732,667	26,109,554	-5.27%
Number of tasks responded by EOD &MRE teams	9,334	9,379	-0.48%
Technical Survey:			
Number of villages surveyed	174	59	+194.92%
Total area in Level One Survey (L1S) – ha	25,232.28	22,005.44	+14.66%
Total area reduction from L1S – ha	19,062.94	16,944.85	+12.37%
Contaminated area found outside L1S – ha	14,005.33	9,097.11	+53.95%
Total contaminated area after TS – ha	20,174.66	14,138.57	+42.69%
Confirmed minefields – ha	9,099.96	10,740.70	-15.28%
Suspected minefields – ha	9,254.62	1,368.50	+576.26%
Residual minefields – ha	1,820.08	2,048.60	-11.15%

Overall Indicator Analysis

As a result illustrated above, it could be noted that the achievement of the overall clearance is 9.32% over the target plan set in 2007, and it is also 3.39% over the achievement of year 2006, and if this achievement is compared to the set target (22,347,500m²) in year 2006, it is 23.80% over this set target, which is a signal of correspondence of second year highest increasingly achievement of CMAC's operations that have never reached since the last 13-year, and this is showing us the effectiveness and efficiency of a good planning and coordination as well as a good leadership of frontline management key staff and DU level. Apart from these, the prioritization and minefield management were oriented better during the implementation year in order to achieve this result. On the other hand, the reforms of 18 mobile platoons (DU3:9mp, DU: 6, DU4:3) were equipped and oriented to

implement the One man – One lane Drill since August 2007, which is showing us the increasing the achievement better than the one lane – Two men Drill methods, and it is also noted that 4 Explosive Detection Dog (EDD) were deployed during the reporting period in order to clear in the UXO clearance in Eastern Regional Office (ERO) in Kampong Cham province. Besides the clearance achievement, other results are showing us a ratio of variances, which are stated in the table above.

Marking Achievements

Status of Minefield	Achievement in 2007			
	Completion	Long Term Marking	Short Term Marking	No marking
Total number of minefields cleared	570			
Minefields verified and marked by small and large TST				
• Confirmed Minefields		20	480	202
• Residual Minefields		10	232	130
• Suspected Minefields		4	341	92

Overall Operational Achievements by Project

The below table is the achievements are stated in period from January 2007 to December 2007:

Project Name	ACHIEVEMENT											
	Full Clearance -Area Cleared (m^2)	Vegetation Cutting (m^2)	Excavated (m^3)	Marked (m)	Area Reduction (ha) in L1S	Contaminated Area Found Outside L1S (ha)	AP Mines	AT Mines	UXO	Small Calibers (Kgs)	EOD Tasks	Fragment
UNDP	9,663,681	3,001,098	36,798	1,654,542	10,101.13	5,657.43	9,861	197	23,886	360	1,387	6,414,060
NPA	1,387,325	418,746	19,723	106,113	-	-	5,357	70	6,197	1,957	504	1,468,440
GRT-DU2	2,254,848	1,319,160	6,867	111,164	-	-	2,403	103	12,942	2,508	635	2,397,639
USA-DU3	5,339,059	1,155,662	36,336	738,107	8,961.68	8,347.77	7,483	80	7,270	1,148	1,134	7,582,243
GRT-DU4	3,488,874	1,104,281	1,294	62,255	-	-	1,614	13	6,969	127	551	3,377,950
JPN-JMAS	449,663	-	-	-	-	-	1,113	49	30,870	342	2,966	1,257,166
GMN-DU6	2,831,567	1,024,455	677	30,625			3,141	37	7,911	178	679	1,385,856
AUSTCARE	809,494	10,000	73,450	45,625	-	-	495	-	123	-	-	465,016
Peace Boat	345,419	-	-	1,704	-	-	27	-	66	-	-	198,865
UNICEF	-	-	-	-	-	-	-	-	-	-	-	-
BHP-BILLITON	176,744	-	-	44,812	-	-	26	-	639	-	25	8,843
J-IAF	743,827	-	-	46,597	-	-	998	38	17,882	87	1,453	143,048
Private (LMI+ Action Group)	175,557	14,980	3,672	52,340	-	-	-	-	-	-	-	33,541
TOTAL:	**27,666,058**	**8,048,382**	**178,817**	**2,893,884**	**19,062.94**	**14,005.33**	**32,518**	**587**	**114,755**	**6,706**	**9,334**	**24,732,667**

Mine Risk Education and Community Based Orientation Achievements

Activities	Achievement			
	MRE	CBMRR	CBURR	Total
Number of villages reached	512	143	5,834	6,489
Number of sessions delivered	526	-	8,991	9,517
Households visited	15,195	32,781	36,029	84,005
Total number of people attending mine risk education	62,747	138,319	139,032	340,098

ACHIEVEMENTS BY CORE ACTIVITIES

I. MINE/UXO RISK EDUCATION AND REDUCTION

MRE is one of core four functions of CMAC major demining activities. At the beginning of establishing, the Mine Risk Education (MRE) was initially designed to teach resettling, vulnerable and migratory populations about the presence at risk and dangers of landmines and UXO. Since 1994 up to date, MRE has been played an important roles within the mine action in order to stimulate and forestall from the mine /UXO incidents for the communities. In general, MRE had provided the mine risk education to the village population in the right ways so that the communities have become more stable and less transitory. However, today many rural Cambodians are aware of the presence and dangers of landmines and UXO, but economic pressures often force them to undertake high-risk activities, indeed, those population are not afraid to the danger of mine/UXO, but they have always instilled neglectfully to those risk behaviour and scatterbrained activities as well as to trespass marked by CMAC Technical Survey Teams, and continue to endanger themselves and their families. In any event, MRE is still strengthening its capacity to replace the methodologies of old

style mine awareness teams from educational function to be multi-skills which carry out risk education as well as risk reduction by disposing of UXO they collect from the community they visited.

The conversion of the former mine awareness teams, which delivered pure mine awareness education, to be mine/UXO risk education and reduction (MRE) teams has yielded very positive results. CMAC's partners, including USA, UNICEF, HIB, Austcare and NPA, have contributed a great support to this effort. The key principles behind establishing these MRE teams are flexibility, responsiveness and reliability. This means that these teams do not only talk (provide awareness education) and alibi as well as overstating for its activity, but they also do the action (collect and destroy UXO) in place where reported by those community people and involvement.

Through this, CMAC realizes that an effective MRE is based upon careful and ongoing assessment of the needs of the affected communities with involvement of existing community structures and local authorities in prioritizing tasks for mine action programs. The planning of MRE should be linked to demining, victim assistance and community development program planning. Based on this guiding principle, CMAC long-term strategy for mine/UXO risk education is to gradually transfer skills and knowledge to the local communities.

The CBMRR and CBURR programs are proof of translating this concept into practice, whereby the affected communities are empowered to recognize, manage and address the mine/UXO problem on their own terms, through task identification and prioritization, with the support from the demining operators and development partners through the PMAC/MAPU process.

In this respect, CMAC has always encouraged and provided capacity building to the communities to be more active in addressing their community issues related to the landmines and UXO so that this exercise will eventually be taken over by the communities themselves. This proactive effort

requires expanded community roles, commitment and experience, and this can be achieved through strengthening their capacity in both technical knowledge and means of communication with mine action operators and development partners. Through such an exercise, a sustainable residual mine and UXO risk reduction capacity can be established, which becomes the backbone resource to realize the Royal Government's vision of zero victims and zero impact.

In year 2006, the number of mine/UXO was 450 casualties and in 2007, is 352 casualties. It could be noted that, in year 2007 the significant drop (by 21.77%) in the number of casualties is a positive sign of impact delivered by mine action efforts and deserves praise. There are several factors which can explain this phenomenon. In a larger context, law enforcement by the authorities, for instance on scrap metal business and land grabbing, is the legal factor which has delivered a positive result. Good coordination and effective control mechanism at the provincial and grassroots levels also help. Mine/UXO action response and clearance capacity delivered by all operators is another contributing factor. In general, collective efforts and combined factors have contributed to the sharp drop in casualties. On CMAC's part in a narrower context, a multi-tool approach to mine/UXO risk education and reduction has been applied. It is undeniable that the MRE teams (once mine awareness teams), CMBRR and CBURR are making a positive impact on the communities in terms of risk reduction, risk education, community integrated planning, and internal capacity of the communities to address landmines and UXO threats. However, from the multi-tool perspective, CMAC no longer sees the above MRE tools as the only applicable risk education and reduction tools. Though the MRE teams, CBMRR and CBURR still remain the principal players in mine/UXO risk education and reduction, CMAC also utilizes other tools such as EOD and CMC in the risk reduction efforts. These teams have been trained, equipped and tasked to perform risk reduction duties including quick responses, interventions, and delivery of awareness education to the affected communities. In addition, the local authorities, such as village chiefs and the police, also play an indispensable role in this area.

In respect to the UXO issue, CMAC's CBURR networks have played a very important role in ensuring that the communities have a strong residual capacity to collect and pass on mine/UXO information, provide UXO risk education, and support UXO risk reduction and community development planning. Strengthening the local police to be the UXO focal point is also an effective strategy to involve the local communities and authorities to tackle

the UXO problem. In this respect, CMAC has provided training to hundreds of police officers from high impact and high casualty districts identified through the CMVIS casualty reports.

As part of the above activities, the scrap metal trade is quite a profitable business and is widespread in Cambodia. Attractive scrap metal prices attract many poor Cambodians to put themselves into a dangerous, sometimes fatal business venture. Many scrap metal dealers do not know about or pay much attention to the danger caused by the UXO they buy and sell without any controlling and or afraid to the national legal law of Cambodia. Abundant UXO scattered across the country and their sensitive conditions worsen the situation and make the people extremely vulnerable to risks. As a result, the UXO that people collect for a small income as they sell the metal have taken many lives or put people on the verge of death or injury. Yet, it is not easy to stop this activity. Recognizing this deadly phenomenon, CMAC with the expected support from UNICEF, will launch a pilot project called "UXO Risk Reduction through Scrap Metal Dealers (URSMD)" which aims to educate the villagers and scrap metal dealers about the dangers of the metal they collect and how they can cooperate with CMAC or other operators and authorities to avoid fatal accidents caused by this business.

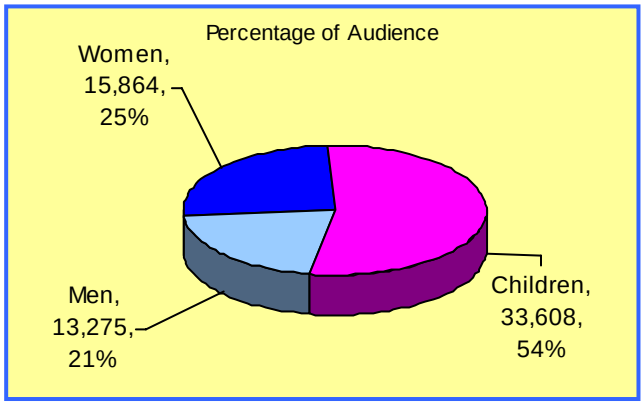
5.1.1 Mine Risk Education and Reduction Teams (MRE)

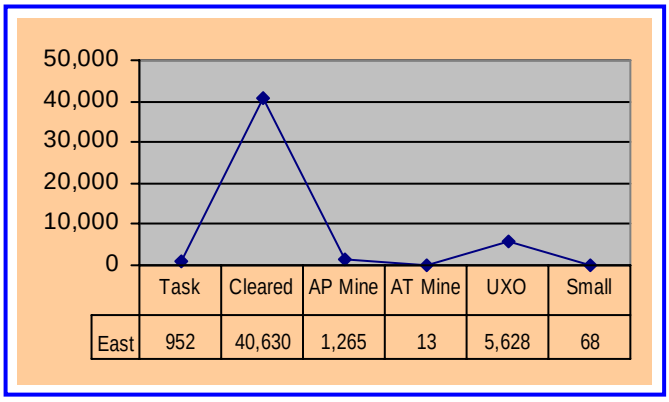
A. Mine Risk Education Deployment:

During the reporting period, CMAC deployed 6 MRE teams to conduct mine/UXO risk education, limited clearance and collect and destroy the mine/UXO as follow.

Team	Male	Female	Total	Province	Donors
MRE#01	3	1	4	Banteay Meanchey and Oddar Meanchey (DU1 & DU6)	NPA, UNDP & UNICEF
MRE#02	3	1	4	Battambang Pursat (DU2)	UNDP & UNICEF
MRE#03	3	1	4	Pailin and Rattanakiri (DU# & ERO)	UNDP & UNICEF
MRE#04	3	1	4	Kampong Cham (ERO)	UNDP & UNICEF
MRE#05	3	1	4	Mondul Kiri (BHP)	BHP BILLITON Project
MRE#06	3	1	4	Kg. Thom and Preah Vihear (DU4)	UNDP & UNICEF
Grand Total	**18**	**6**	**24**	**10 Provinces**	

To respond to the community requirements for both mine/UXO risk education and risk reduction in their communities, CMAC deployed 6 mobile mine/UXO risk education and





reduction teams (MRE) to provide mine and UXO risk education to villagers as well as collect and destroy UXO as per request by the community they visited. Structurally, one MRE team consists of 4 persons, including 2 mine risk education experts (1 female) and 2 EOD experts. In general, one of their primary duties is to deliver mine risk education messages to people living in high risk areas and villages. The delivery of mine risk education messages is conducted through day and night presentations, household and field visits, video spots shows, face to face discussions, specific larger target group concentration education, posters and flyers in target areas, distribution of mine/UXO leaflets, story books to the people in all target provinces, including distribution the VCD, Video tapes and Audio tapes of MRE spots to a private video room for showing the people. The MRER teams' achievements in terms of awareness from January to December 2007 are reported below.

During the reporting period, the MRE teams achieved 150.59% of the target villages and 152.46% of the target sessions for the period. Another primary duty is to collect and destroy UXO reported by the communities they visit. In addition, they also conduct limited clearance of mine/UXO suspected areas for risk reduction and to provide safe access to resources and facilities, such water sources, schools, pagodas, health centers,… etc. The table and charts enclosed briefly illustrate the achievements made by MRE teams during the reporting period. It should be noted from

the table below that within the reporting period, a significant number of mines and UXO were collected and destroyed, in addition to the tens of thousands of villagers who received mine/UXO risk education. With such important significance, the MRE teams have increasing role in the risk education.

Risk Education Achievement		Tasks Intervention For Risk Reduction	
• Village Reached	512	• Tasks Responded	952
• Session Reached	526	• Cleared (m²)	40,630
• Household Visited	15,195	• Found & Destroyed	
• Total Village Population	310,540	- AP and improvised mines	1,265
• Audience	62,747	- AT mines	13
- Men	13,275	- UXO	5,628
- Women	15,864	• Small Calibers (kgs)	68
- Children	33,608	• Unearth fragment	6,235

B. Mine Risk Education Materials were used in Presentation:

The below materials had been used during the reporting period for their mine risk education.

- Big T-shirt : 1,594
- Small T-shirt : 1,254
- Note book : 9,580
- Poster : 14,088
- Flyer : 100
- Leaflet: 9,909
- Story book: 180
- VCD (MRE spot): 13 copies(3 types)
- Audio & Video tape: 11 (3 types)

C. Comparison between the Achievement of Year 2007 and 2006:

The below table is compared the achievement on different year:

Type of Achievement	Achievement Comparison		Variance % (+) and (-)
	2007	2006	
• Village Reached	512	507	+0.99%
• Session Reached	526	520	+1.15%
• Household Visited	15,195	13,398	+13.41%
•Total Village Population	310,540	297,364	+4.43%
• Audience	62,747	66,640	-5.84%
- Men	13,275	16,010	-17.08%
- Women	15,864	19,241	-17.55%
- Children	33,608	31,389	+7.07%
• Tasks Responded	952	1,008	-5.56%
• Cleared (m²)	40,630	49,853	-18.50%
• Found & Destroyed			
- AP and Improvised mines	1,265	1,640	-22.87%
- AT mines	13	13	+0.00%
- UXO	5,628	6,159	-8.62%
• Small Calibers (kgs)	68	721	-90.57%
• Unearth fragment	6,235		

5.1.2 Community-Based Mine Risk Reduction (CBMRR)

In 2007, CMAC's 19 CBMRR District Focal Points (DFP) worked in 18 highly affected districts in the provinces of Battambang, Pursat, Pailin, Banteay Meanchey, and Oddar Meanchey. 434 CBMRR networks have been established in 144 villages, in 57 communes of the 18 target districts. The work of the CBMRR is fully recognized by the government and the international community, and in the future this tool is expected to provide service to other demining and development operators and a closer link will be established between CBMRR and MAPU/PMAC. The following is the CBMRR resources.

Total CBMRR Resources:

Community-Based Mine Risk Reduction Program:

- 04 Provincial Coordinators (4 personnel)
- 19 District Focal Points including 1 Assistant (19 personnel)
- 434 Mine/UXO committee representatives or volunteer networks (434 persons)

5.1.2.1 Resources & Deployment

During this progress reporting period, from 01 January to December, 2007, the CBMRR's deployment was the following:

A. CBMRR-Provincial Coordinators

Category	Target Province				Total	Donors
	BMC (DU1)	BTB & PST (DU2)	PLN (DU3)	OMC (DU6)		
Provincial Coordinators	1	1	1	1	4	UNDP,UNICEF, NPA & USA
Grand Total	**1**	**1**	**1**	**1**	**4**	

B. CBMRR-District Focal Points

Target Districts	Target Provinces								Donors
	BMC (DU1)		BTB & PST (DU2)		Pailin (DU3)		OMC (DU6)		
	Male	Female	Male	Female	Male	Female	Male	Female	
Pailin					1				USA
Samlout						1			USA
Salakrao & Asst					2				USA & UNICEF
Kamrieng			1						UNDP & UNICEF
Phnom Proek			1						UNDP & UNICEF

Sampovl Loun			1						UNDP & UNICEF
Bavel			1						UNDP & UNICEF
Moung Russei			1						UNDP & UNICEF
Kas Krolor				1					UNDP & UNICEF
Ratanak Mondul			1						UNDP & UNICEF
Veal Veng			1						UNDP & UNICEF
Phnom Krovinh			1						UNDP & UNICEF
Samrong							1		UNDP & UNICEF
Banteay Ampil							1		UNDP & UNICEF
Ou Chrov	1								NPA
Svay Chek	1								NPA
Thmar Pouk	1								NPA
Malai	1								NPA
Grand Total	**4**		**8**	**1**	**3**	**1**	**2**		

C. CBMRR-Mine/UXO Committee Representatives (Volunteer Networks)

DU	Target Districts	Mine/UXO Volunteer Networks								TOTAL
		District Level		Commune Level			Village Level			
		M	F	No. of Com.	M	F	No. of Vil.	M	F	
DU1	Ou Chrov	2		3	6		7	13	1	22
	Thmar Puok	2		2	4		8	16		22
	Svay Chek	2		2	4		6	11	1	18
	Malai	2		3	5	1	8	13	3	24
DU2	Kamrieng	2		5	7	3	8	13	3	28
	Phnom Proek	2		5	7	3	9	16	2	30
	Sampov Loun	2		4	4	4	7	10	2	22
	Bovel	2		2	4		8	14	2	22
	Moung Reusei	2		3	6		7	14		22
	Rattanak Mondul	1	1	3	5	1	8	9	7	24
	Kas Kralor	1	1	4	5	3	6	9	3	22
	Veal Veng	2		3	5	1	8	8	8	24
	Phnom Kravanh	2		3	6		8	7	9	24
DU3	Pailin	2		3	6		5	8	2	18
	Salakrau	2		4	8		17	25	9	44
	Samlout	2		2	2	2	8	11	5	22
DU6	Samrong	2		2	3	1	8	8	8	22
	Banteay Ampil	2		3	3	3	8	8	8	24
	Grand Total: 18	**34**	**02**	**56**	**90**	**22**	**144**	**213**	**73**	**434**

5.1.2.2 Progress Achievements and Key Activities against Objectives

CBMRR is a community oriented project established in order to relay the community needs in terms of mine action, victim assistance program and the community development services.

During the reporting period, the CBMRR resources performed successfully the following activities:

***Results - Objective One*: To establish an effective and sustainable community-based mine risk reduction network at district, commune and village levels.**

- 434 Mine/UXO Committee representatives (Volunteer Networks) attended refresher courses during the reporting month periods. Each MUC level and each area have shared their skills and knowledge and learnt from each other. The MUC refresher course has been successful, facilitated and coordinated by the CBMRR-DFP and PC, supported by Unicef fund.

- Village impact assessment was conducted in 52 of the 144 current CBMRR targeted villages through Participatory Learning Action "PLA" by the CBMRR-MUC and 76 villages are being continued to complete in 2008. The PLA conducted by the MUC is more realistic than the PRA one. The overall aspects of the villages i.e. identify more detail social/resource picture of the village, village problem analysis through problem tree, identify family economic status, and also rank people according to the risk they face. The PLA results (46 Books) are then compiled in a data book record and each book will be copied in four: one will be stored at the village, one kept in commune office, one kept by the DFP and another one at the CBMRR-PC office.

  PLA book's data are very useful for the both government and non governmental agencies as they constitute an important information source on the situation and socio economic impact of the CBMRR implementation

- 9 of 144 old target villages were phased out such as Deysor Thmey, Dey Sa Ith, Phnom Kuy villages in Khan Salakrao, and 6 villages in Kamrieng, Phnom Peruk and Sampov Loun districts of Battambang province.

- 8 new high prioritized target villages were selected to replace the phased-out villages such as Koh Keo, Tomnob, Phnom Krinh, in Khan Salakrao (Pailin), and Dang Rek, Prasat

Tbeng village in Thmor Puok district (Banteay Meanchey) and 2 villages in Battambang province through the PLA processes.

- 105 target village maps were updated, taking account of all main information sources in the PRA village profiles. The updated information was introduced back to the villagers and 39 villages are being continued to complete in 2008.

- 45 new Mine/UXO Committee representatives were selected in the new prioritized villages, and already attended the community skill as well as the mine risk messages, while 32 local authorities were also invited to attend this training, which organized by District Focal Points based in each target district under supervision and observation by the CBMRR's Provincial Coordinators.

- 348 old Mine/UXO Committee representatives received a refresher training courses in each target district once a year, which was organized by District Focal Points based in each target district under supervision and observation by the CBMRR's Provincial Coordinators.

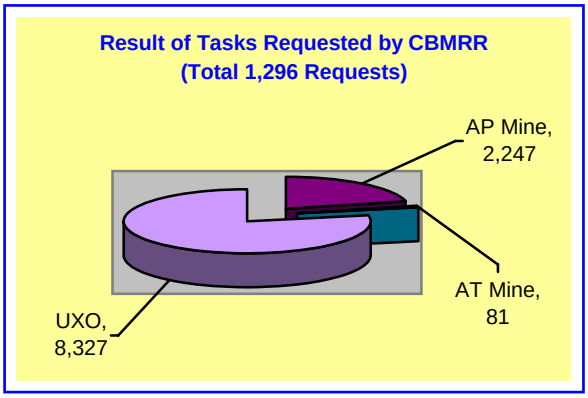
- 226 new MUC signboards were updated and 35 signboards were build in the target villages in all districts of Banteay Meanchey, Battambang, Pailin and Oddar Meanchey.

Results - Objective Two: ***To facilitate the access of mine/UXO affected communities to appropriate mine action activities, victim assistance and community development responses.***

A. Link with mine action intervention services

1. Mine/UXO Reporting

- In total, 1,296 requests of Mine & UXO action interventions were sent by CBMRR network to the mine action intervention teams. These requests led to the collection and destruction of 2,247 AP mines, 81 AT mines and 8,327 UXO. The requests for interventions were responded by small intervention teams such as MRE, EOD and CMC as well as conventional platoons, CBD platoons, MDD and Brush Cutters teams. Some requests for interventions were also responded by Halo Trust (3 requests"1AP, 7AT, 11UXO") and MAG (40 requests, 38AP, 114UXO) and RCAF (1 request, 1AP, 10UXO), which indicates a wide use of CBMRR's services and good coordination and cooperation on the ground between the CBMRR and different mine action operators.



2. Mine Clearance Responses

During the reporting period, all levels of the effective CBMRR mine/UXO committee representative cooperated with DFP to access and facilitated for the affected community in mine action response. In respect, more than hundred of requests for mine clearance intervention were raised and submitted throughout MUC process and then sent for approval from each target village chief and commune and district, which were generated the following socio-economic outputs: 213 areas cleared, 8,110,928m², AP: 18,696, AT: 14, UXO: 1,847 and 13,417 families, 1,057 students in 138 villages in Banteay Meanchey, Battambang, Pursat, Pailin and Oddar Meanchey provinces. The below outputs are in detail:

1. 65 areas of agriculture: 3,240,679m², with AP: 12,029, AT: 4, UXO: 710 in 34 villages and beneficiaries: 813 families.
    - CMAC: 19 areas (1,287,105m², AP:625, AT:2, UXO:151, family: 10, village: 10)
    - MAG: 3 areas (29,551m², AP:183, UXO:22, family: 3, village: 3)
    - Halo Trust: 30 areas (1,065,496m²; AP:10,734, AT: 2, UXO:408, family: 337, village: 17)

2. 16 areas of resettlement: 725,868m², with AP: 307, AT: 2, UXO: 289 in 11villages and beneficiaries: 272 families.
    - CMAC: 15 areas (651,133m², AP:275, AT:2, UXO:274, family: 232, village: 10)
    - MAG: 1 area (74,735m²; AP:32, UXO:15, family: 40, village: 1)

3. 10 areas of agriculture & resettlement: 580,456m², with AP: 621, AT: 2, UXO: 77 in 10 villages and beneficiaries: 480 families.
    - CMAC: 7 areas (407,022m², AP:214, AT:0, UXO:62, family: 428, village: 7)
    - MAG: 1 area (93,541m², AP:2, AT: 2, UXO:0 , family: 44, village: 1)
    - Halo Trust: 2 areas (79,893m²; AP: 0, UXO: 15, family: 8, village: 2)
4. 75 areas of agriculture & reduction: 2,909,834m², with AP: 5,364, AT: 4, UXO: 223 in 30 villages and beneficiaries: 2,621 families.
    - CMAC: 62 areas (2,196,454m², with AP: 203, AT: 4, UXO: 165, family: 106, village: 22)
    - Halo Trust: 13 areas (713,380m²; AP: 5,161, UXO: 58, family:2,515, village: 8)

5. 22 areas of Road construction: 771,066m², with AP: 147, AT: 0, UXO: 288 in 21 villages and beneficiaries: 6,493 families.
    - CMAC: 21 areas (658,536m², AP:140, UXO:178, family: 6,244, village: 20)
    - MAG: 1 area (112,530m², AP:7, UXO:50 , family: 249, village: 1)

6. 6 areas of Pagoda: 16,035m², with UXO: 186 in 6 villages and beneficiaries: 202 families, which responded by CMAC.

7. 5 areas of Pound: 34,211m², with AP: 12, UXO: 12 in 5 villages and beneficiaries: 505 families, which responded by CMAC.

8. 10 areas of school: 120,105m², with AP: 78, UXO: 102 in 8 villages and beneficiaries: 1,057 students and 300 families, which responded by CMAC.

9. 2 areas of irrigation and canal: 89,506m², with AP: 25, UXO: 5 in 2 villages and beneficiaries: 123 families, which responded by CMAC.

10. 1 area of health center: 4,370m², with UXO: 13 in 1 village and beneficiaries: 732 families, which responded by CMAC.

11. 1 area of bridge: 1,280m², with UXO: 1 in 1 village and beneficiaries: 515families, which responded by CMAC.

12. 12 areas of Risk Reduction: 466,595m², with AP: 600, AT: 2, UXO: 130 in 12 villages and beneficiaries: 333 families.
    - CMAC: 9 areas (279,681m², AP:235, AT: 2, UXO:108, family: 275, village: 9)
    - MAG: 3 areas (186,914m², AP:365, UXO:22 , family: 58, village: 3)

13. 1 area of water source: 9,450m² in 1 village and beneficiaries: 120families, which responded by CMAC.

B. Link with victim assistance services

- The CBMRR staff assisted with the evacuation of 12 landmine victims in the districts Malai, Svay Chek, Thmar Puok, O Chrove, Phnom Proeuk, Sampov Loun and Kamrieng to the local hospitals and the Emergency Hospital in Battambang by CMAC and KAMA.

- 39 of weapons (all types) were found in the target villages in Khan Pailin, coordinated by CBMRR-MUC and handed over to JSAC in February 2007.

- 441 existing artificial limbs for 441 Disable Persons in 39 CBMRR target areas in Pailin, Battambang, Banteay Meanchey provinces were facilitated to receive repairing at the ICRC center.

- 155 old and 18 new wheel chairs were repaired and provided by ICRC to the amputees in all target districts of Pailin, Battambang, Banteay Meanchey provinces.

- 17 new artificial limbs were provided by ICRC to the amputees in Kamrieng, Phnom Preuk, Sampov Lune, Samlot, Pailin and Salakroa districts.

- 176 pairs of new crutches and 2 old were provided and repaired by ICRC to the amputees in 18 target districts.

- 121 Amputees from 36 villages in CBMRR target were facilitated to receive a vocational training at ICRC center.

- 300 Amputees from 30 villages in CBMRR target were facilitated to receive health check by JSC and ICRC in 3 different places.

- 9 people from 5 villages in CBMRR target (Banteay Meanchey and Pailin) were facilitated to evacuate to the hospital by district health and MAMA.

C. Link with community development services

- 10 primary schools (47 rooms) for 292 students and 388 families in 5 villages in Malai, Kamrieng, Rattanak Mondul and Svay Chek Districts were built by JMAS, JSAC, CHRD, CHO and SAMRITA.
- 31 portions of laterite roads (90,335m) and 8 track road (6,634m) located in 19 villages in Svay Check, Malai, O Chrov and Samlot Districts, were constructed and repaired by SEILA, Village Community, WFP, Austcare, WFP, NPA, CHRD, Angkar Krursaa Thmey and RCAF Engineering, which benefits for 1,159 families .
- 9 plots of concreted pipe were repaired in 4 villages for 488 families in village of Banteay Mean Rith, Laver (Thmar Puok), Kanhchriep and Chaa (Oddar Meanchey).
- 2 canals (7,367m) were constructed by Japan's grand aid and CEDO in 2 different villages of Kanhchriep (Koukmorn, Oddar Meanchey) and Phnomkuy (Khan Salakrao).
- 6 community ponds and 44 family ponds were constructed by Austcare, CEFADA, World and Vision-Cambodia for 756 families in 16 villages such as Beung Sokram, Taamang, Kdib Thmar, O Kam Bot, Banteay Mean Rith, Banteay Ti 1, Banteay Ti 2, Khla Ngab, Kbal Tomnob, Labeuk Svay, Khvav Lich, Chamkarkor, Damnak Karkoh and 3 villages in Battambang.
- 414 latrines were provided by LWS and CRS for school students, poorest villagers and disabled families in Phnom Proek, Sampov Loun, and Kamrieng Districts.
- 106 new pump wells and 3 old were constructed and repaired by CABITA, CPP, KRURSAR THMEY, Village Community, JMAS, JSAC and World Vision-Cambodia for 202students and 310 families in 7 villages in Kamrieng, Rattanak Mondul, Sampovlune, Bavel, Svay Chek, Thma Puok, O Chrove and Malai Districts.

- 5 well for 313 families in Raksmey Samaki and Prey Kob villages, O Chrove district were constructed by CHO and local authorities.
- 60 plots of concrete pipes and 5 others for 61 families in Raksmey Samaki, Prey Kob villages(O Chrove), and Beung Sokram, Taamang, Kdib Thmar, O Kam Bot, Banteay Meanrith, (Thmar Pouk) districts, and Labeuk Svay, Khvav Lich, Chamkarkor, Damnak Karkoh (Svay Check), were constructed and repaired by CHO and local authorities
- 2 metal bridges (15m x 4m) were provided and constructed by JSAC in Tatok commune, Samlot district, Battamabang for 9 CBMRR target villages.
- 59 biological water filter containers were provided by CEFEDA and Ponleu Komar to 289 families in Krachab, O Sampor2, Banteay Ti 2 (Malai) district.
- 889 meter of plastic pipes and 3 pumps were provided by KBA to 96 families for building pump-well in Beung Tasrey and Tamaang villages, Thmar Pouk district.
- 36 set of agricultural tools were provided by ADA to 36 families in O bey Chann village, O Chrov district.
- 400 kgs of fertilizers were donated by CARE to 4 poorest families in Phnom Spong village, Salakrao, Pailin.
- 3,750kgs of labor food (rice) were provided by JSC, WFP and Government to 76 amputees, 58 students and 68 poorest families in Preykob and Damnak Kokoh for track road construction (600m).
- 224 cans of milk were provided by Krursar Thmey to 14 babies for 8-month period in Raksmey Samaki, Preykob and Tuol Prasat villages (O Chrov).
- 1,700 packages of noodle, 34kgs of seasoning and 68 Sarong were provided by government through provincial social affair to 68 families in 9 CBMRR target areas in Tatok commune, Samlot district, Battambang province.
- 4,450 kgs of rotation-crop (soy bean) were provided by CHRD, PSP and CSDA for 218 poorest/disabled families in Banteay Ti 1, Santi Pheap and Khla Ngab, Malai district.
- 3,668 kgs of rotation-crop (maize and sesame) were provided by CARE, World Vision-Cambodia, ADMAC, CARE and Chief of Commune for 186 poorest/disabled families in 8 villages such as in Beung Pralit, Suon Ampov Keut, Bos Sa Am, Phsar Prum, Thnalbat, Phnom Spong villages, Khan Salakrao and Pailin Municipality.
- 5,801,999 Riel and 350$ and 1,718,550 Bath were loaded by CABDICO, Agricultural Bank, PSP, Border Community, ACLEDA, CBO, KMK, Village Bank, ADMAC, WVC and CBIRD for 514 poorest and disabled people in 28 different villages for doing agriculture, fishery and cow raising in their own villages in Pailin, Salakrao and Thmar Pouk, Svay Chek, O Chrov and Malai districts.
- 50 cows were provided by CEFADA, CHRD, MJP and OEB for 60 poorest/disabled families in Dey Krahorm, Barhuy Tboung (Pailin) and Banteay Ti 1, Banteay Ti 2, Kbal Tumnob, Santipheap, Khla Ngab(Malai district).
- 18 pig banks and 199 chickens and duck raisings were provided by OEC, CEDO, ADESS and CHRD for 59 poorest/ disabled families in Kanh Chreap village (Oddar Meanchey), Banteay Ti 1, Santipheap, Khla Ngab(Malai district) and Battambang Province.

- 22 bicycles were provided by Austcare to 22 MUC in 4 CBMRR target villages such as Labeuk Svay, Khvav Lich, Chamkar Kor and Damnak Korkoh (Svay Chek district).
- 71 mosquito nets were distributed by CSDA AND CHRD for 71 families at Banteay Ti 1, Santipheap, Khla Ngab Villages in Malai district district, Banteay Meanchey province.
- 152 bed net treated were dipped for prevention a malaria, which were distributed by provincial health to 117 families, who are in 7 CBMRR target villages in Tatok commune, Samlot district, Battambang.
- 15 T-shirts were distributed by Africa Organization to 15 students in Santipheap village in Malai district district, Banteay Meanchey province.
- 750 heads of fishery were distributed by the village community to 384 students for raising in school pond in Prey Kob village, O Chrov district, Banteay Meanchey province.
- On 31st October 2007, ADMAC provided the started up fund with amount of U$ 50 and together with several kinds of fruit trees for 35 families who are the poorest and landmine vulnerable people in Soun Ampov Keuth villager, of Pailin.
- On 12 November 2007, CARE organization provided 60 fingerlings, mushroom inoculants for 3 poorest families in Borhouy Tborng village, Boryakha commune of Krong Pailin.
- On 5th April 2007, CRC Pailin provides household kit contained within 60kg of rice, 1 blue plastic for the 17 poorest families who are the natural disaster vulnerability in Phnom Koy village, Sala Krau commune of krong Pailin
- On 19th May 2007, CVD organization provided food security emergency for 10 poorest families in Ouro-Eil village, Stoeng kach commune, Sala Krau district of Pailin.
- On 18 October 2007, former king Norodom Sihanouk donated charity gift (in each gift contain of 150 kg of rice, 1 scarf, 1 sarong, 1 trouser, 3 shirts, and cash 10,000 Riel) for 3 poor of the poorest families in Bosa-Am village, Ou Andong commune of Pailin.
- On 24 October 2007, CARE organization provided 420 pieces of mushroom inoculants for 9 poorest families in Phnom Sapong, Thnal Bot, and Kon Damrey villages, Sala Krau district of Krong Pailin.
- On 29th June 2007, CRC based in Samlot district provided emergency household kit for 2 landmine victim in Ta Tok village, Takok commune, Salot district of Battambang province.
- On 22nd January 2007, the USA oversea provided charity gift that is a total of 2,825 kg or rice, 116 mosquito-nets, 116 scarves, 107 sarongs, and 21,700 Bath of Thailand cash for 113 poorest of disabled people are situated in 6 villages of Dei Sor, Preai Saterah, Bosa-Am, Phnom Kouy, Thnal Keng, and Ou Andong villages of Krong Pailin.

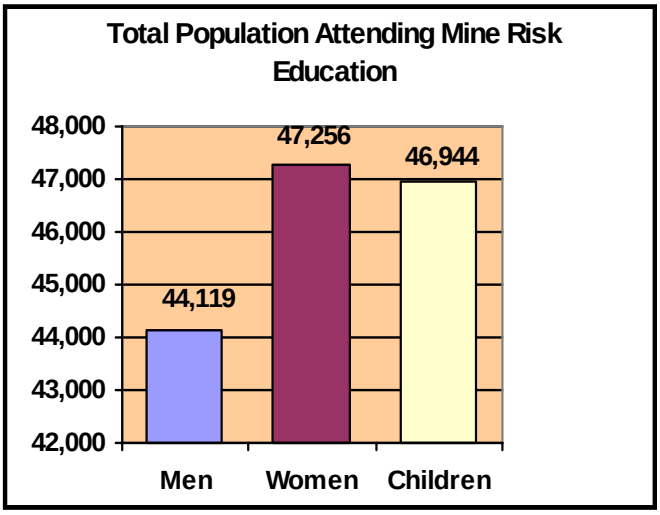
Result-Objective Three: ***To maintain and improve the public information campaign to raise awareness among the mine/UXO affected communities.***

The CBMRR Mine/UXO Committee Representatives (volunteer networks) have an important role of making their community safer through providing the education on

mine/UXO risks to the specific groups in their targeted locations. Throughout the year, they produced the following accomplishment

A. Mine Risk Education by CBMRR Networks

Donors	Target				Achievement					
	Number of Target District	Number of Target Commune	Number of Target Village	Number of Networks	Number of Village visited	House hold visited	Participants			
							Men	Women	Children	Total
UNDP+ UNICEF	11	37	85	265	85	23,539	30,989	32,820	31,921	95,730
NPA	4	10	29	86	29	3,696	5,104	5,445	6,193	16,742
USA	3	9	30	84	30	5,546	8,026	8,991	8,830	25,847
TOTAL	**18**	**56**	**144**	**434**	**144**	**32,781**	**44,119**	**47,256**	**46,944**	**138,319**



B. Mine Risk Education by Showing Spots in the Video House by CBMRR Networks

Apart from the above mentioned, CBMRR networks conducted its activities by showing the MRE spots in the Video house in their own target villages as the following:

No. of Video House	No. of Video showing (Time)	Attendants to MRE Spot Showing			
		Men	Women	Children	Total
38	369	3,488	4,624	5,239	13,351

C. Mass Media Campaign

The Mass Media Campaign is a part of MRE section in CMAC. During the reporting period, this section played an important role within the public advertising and the media broadcasting systems to help reach the people in areas where CMAC's mobile teams are not available to deliver mine/UXO risk education directly. Educational TV spots are especially attractive to all-aged population as they involve popular actors, portray real daily life of the people, and educate people in a very simple but eye-catching way. For the education story,

men and children are usually targeted as they are the most vulnerable people in the communities.

D. Television and Radio Spot Production

- 2 new MRE TV and Radio spots (new master production) were designed and developed for production by cooperation with TVK expert who is a long term partnership with CMAC. These new TV and Radio spot, titled "role and responsibility of CBMRR networks" was produced, targeting to CBMRR's target communities and network's activities which assist to deliver risk education to their own communities and facilitated the request of mine clearance for intervention.

- In addition, a TV spot and a radio spot were updated to incorporate new messages to make the spots more adaptive and appropriate in the current environment.

1. TV Broadcasts (number of broadcasts)

TVK-PNP	TV Bayon	TVK Battambang	TVK Pursat	TOTAL
70	70	80	80	**300**

2. Radio Broadcasts (number of air times)

National Radio-PNP	Battambang	Pursat	Pailin	Banteay Meanchey	TOTAL
110	110	110	110	90	**530**

3. Billboard Production and Campaign

- 10 new billboards were produced and another 2 old billboards were updated and erected in Siem Reap, Oddar Meanchey, Preah Vihear, Pursat, Battambang, Banteay Meanchey,Pailin and Kampong Thom Provinces. They contain education messages such as: "Ban landmines", "Consequences caused by improvised metal detectors", "Do not collect mines/UXO for selling", "Do not damage mine warning signs", and "Do not collect woods in mined areas", How to report mine and UXO to CMAC Intervention Teams for destruction…etc.

4. MRE Material Re-Production and Compilation

- 100 VCD, 20 Video tapes and 50 Audio tapes were re-copied for delivery to MRE and CBMRR
- 05 types of printed risk education materials were produced such as:
  1. Large T-shirts : 15,228
  2. Small T-shirts : 7,800
  3. Notebook : 44,492
  4. Poster(size A2) : 53,800
  5. Leaflet : 73,792

  This is noted that a financial support was distributed by UNICEF.

D. NGO Campaign

The NGO campaign aims are to provide mine/UXO risk education to the local and expatriate staff who work in development NGO's, which are usually involved working in mine/UXO risk areas and some of them worked as a partnership with International mine action in Cambodia, so that they are aware of the mine/UXO problems, know how to avoid risks and dangers, have the confidence in approaching a mine/UXO affected community, and can disseminate the risk education messages to others who are exposed to similar risks. The new staff of these NGO's are usually briefed by CMAC's MRE Office at CMAC Headquarter in Phnom Penh before they are dispatched to the risk areas. During the reporting period, a total of 59 staff (46 males, 13 females) from CADCOMMS, United Nation Assistance to the Khmer Rouge Trials (UNAKR) and University (CIST) received mine/UXO risk education.

E. Field Monitoring

- All PC and DFP in the target provinces and districts conducted at least 3-4 times of their field monitoring visit in order to strengthen the MUC activities in each district. The aim of this visit is to advise and lead MUC to do PLA, update village map, write-down the daily record, and information collection and facilitation on development services for their target villages in Banteay Meanchey, Battambang, Pailin, Pursat and Oddar Meanchey provinces.

F. Other Activities

- On 24 February 2007, CBMRR staff cooperated with one CMC team and 40 mine/UXO networks in Pailin municipality were invited to celebrate the National Mine Awareness Day, which was organized by Angkar Sma Rakdei Neiy Nak Kila and participated by HIB, CRC, CMAC, MAG, Educational Office of Youth and Sport of Pailin Municipality. Similarly, MRE staff in Banteay Meanchey also conducted mine risk education in the National Mine Awareness Day, which was organized by JSC in Beung Snao village, Slor

Kram commune, Svay Check district, Banteay Meanchey Province, attended 233 village population (men: 49, women:59, children:125). In the ceremony, DFP and MUC had hanged 8 MRE banners in two different districts in village and commune directorate. It could be noted that, every year Cambodia celebrates the National Mine Awareness Day on 24 February to bring up the level of awareness of the mine and UXO problem and also to discuss strategies to reduce and eliminate casualties caused by landmines and UXO.

- PC in Pailin conducted a mine risk education to the owner of scrap metal shop and scrap metal dealers, which was coordinated by HIB on 28th March 2007 in the police station of Pailin.

- On 26 June 2007, all PC and DFP were invited to join in a workshop in Banteay Meanchey province with a topic "Mine Risk Education Achievement and new strategy", which organized by CMAA.

5.1.3 UXO Reduction through Scrap Metal Dealer (URSMD)

URSMD is a 6-month pilot project, which started in January 2007. The project is designed to strengthen the law on the management of Weapons, Explosive and Ammunition tampering.

It should also be noted that in October, a new project concept called "UXO Risk Reduction through Scrap Metal Dealers, (URSMD)" was developed by CMAC MRE section supported by UNICEF in partnership. It aims to strengthen the enforcement of the "Ban Landmines" and "Law on the Management of Weapons, Explosives and Ammunition" by providing mine/UXO awareness education to villagers through the scrap metal dealers about the dangers of the metal they collect and how they can cooperate with CMAC or other operators and authorities to avoid fatal accidents caused by this business as well as to obtain timely reports on UXO from the scrap metal dealers. This project has been piloted for six months (January to June 2007) by selecting 2 affected districts in two different provinces. During the pilot phase, the project has targeted 8 scrap metal shops located in 2 provinces: 4 in Chhbamorn district, Kampong Speu province and 4 in Angsnoul district, Kamdal province.

In March 2007, the 154 selected scrap metal dealers (62 person Angsnoul district and 92 from Chhba Morn district) and the 8 selected scrap metal shop owners were invited to attend one day MRE training. The following table is the total resources of URSMD in 8 Scrap Metal Stores in the target provinces:

Store Code.	Shop Owner		Scrap Metal Dealers		Total	Other
	Name	Sex	Men	Women		
SMD-001	Thai Thong	F	21		21	Chbar Morn
SMD-002	Iev Sok Keang	M	24	7	31	Chbar Morn
SMD-003	Dieng Phann	M	14	3	17	Chbar Morn
SMD-004	Yeom Sokhorn	M	23		23	Chbar Morn
SMD-005	Khun Long	M	26		26	Kandal

SMD-006	Kim Lean	F	19		19	Kandal
SMD-007	Meas Pich	M	9		9	Kandal
SMD-008	Bey Sophy	M	8		8	Kandal
TOTAL	**8 persons**		**144**	**10**	**154**	

The MRE objective was to focus on the danger of the explosive remnants of war, on the reporting system, and the law on management of weapon ammunition and tampering explosive. MRE materials as well as snack, food cost & travel cost, were provided for each participant, in addition, scrap metal shop owner was provided US$10 each for the cell phones cost per month.

Each targeting scrap metal shop received a box-file of report forms in order to record the number of UXO reported by scrap metal dealers and the number of incentive material including pen, soap and mosquito net given for their reward.

According the field assessment conducted in June, each scrap metal shop owners takes a high responsibility in recording report in and report out to the EOD intervention team based in the target province. Even the period of pilot project was limited for 6-month from January – June 2007, and the activities were started from March and so on, but up-to-date this project seems stably and is ongoing sustainable their activities through the target Scrap Metal Dealers who directly assisted from the CBURR District Focal Points and EOD. The following table is an URSMD Productivity from March to December 2007.

Information		Mine/UXO reported and Intervened by EOD			MRE Materials				Incentive Materials		
Code	No. of Request	AP	AT	UXO	Large T-Shirt	Note Book	Poster	Leaflet	Soap	Mosquito net	Scarf
SMD-001	52	4	0	558	140	340	180	400	193	190	195
SMD-002	44	2	0	205	140	340	180	400	184	186	188
SMD-003	36	0	0	140	140	340	180	400	152	163	165
SMD-004	35	3	0	299	140	340	180	400	172	177	180
SMD-005	53	1	0	163	160	340	180	350	171	155	178
SMD-006	31	0	0	100	140	260	180	350	178	181	183
SMD-007	36	0	0	161	138	260	180	350	171	166	178
SMD-008	29	0	0	160	150	280	180	350	177	180	183
TOTAL	**316**	**10**	**0**	**1,786**	**1,148**	**2,500**	**1,440**	**3,000**	**1,398**	**1,398**	**1,450**

5.1.4 Community-Based UXO Risk Reduction (CBURR)

From January to April 2007, CMAC has a total of 16 CBURR District Focal Points (DFP) worked in high UXO casualty Districts in Kampong Speu, Kandal, Prey Veng and Svay Rieng. From May to September 2007, 16 more CBURR DFP were recruited and appointed to work in Kratie, Steung Treng, Rattanak Kiri and Mondul Kiri provinces. It could be noted that during the reporting period, 4 DFP funded by Japan Mine Action Service (JMAS) were phased out in Prey Veng province and to extend in Kampong Cham province. These 4 DFP were converted to use the UNDP fund (Clearing For Results). In September 2007, 4 more

DFP funded by JMAS were recruited and appointed to work in new high UXO casualty districts in Kampong Cham, in total 36 DFP. The identification of the districts where the CBURR DFP's operate is based on an assessment process mutually conducted by donors and CMAC and the deployment targets districts where the number of casualties is consistently high and where individual behaviors pose great concern and are prone to risks.

5.1.4.1 Resources & Deployment:

Table: Deployment of CBURR DFP's and Volunteer Networks

Provinces	Districts	DFP	Donors	Number of CBURR Volunteer Networks		
				Commune Level	Village Level	Total
Kampong Speu	Chbar Morn	1	JMAS	3	22	25
	O Dung	1	JMAS			
	Phnom Srouch	1	JMAS			
	Samroang Tong	1	JMAS			
Kandal	And Snoul	1	JMAS	5	45	50
	Kandal Steung	1	JMAS			
	Ksach Kandal	1	JMAS			
	La Vea Em	1	JMAS			
Prey Veng	Kampong Leav	1	UNDP			
	Ba Phnom	1	UNDP			
	Kampong Trabek	1	UNDP			
	Preah Sdech	1	UNDP			
Svay Rieng	Svay Chrum	1	JMAS			
	Kampong Ro	1	JMAS			
	Svay Teap	1	JMAS			
	Romdoul	1	JMAS			
Kampong Cham	TboungKhmom	1	JAIF			
	Dam Bé	1	J-AIF			
	Ponher Prek	1	J-AIF			
	Memot	1	J-AIF			
	Cheung Prey	1	JMAS			
	Chamkar Leu	1	JMAS			
	Kg. Siem	1	JMAS			
	Prey Chhor	1	JMAS			
Mondulkiri	Sen Monorom	2	BHP Billiton			
	Ou Reang	1	BHP Billiton			
	Picheada	1	BHP Billiton			
	Keo Sei Ma	1	BHP Billiton			
	Koh Nhek	1	BHP Billiton			
Kratie	Snoul	1	JAIF			
	Prey Prasob	1	JAIF			
Rattanakiri	Ban Lung	1	JAIF			
	Ou Ya Dav	1	JAIF			
Steung Treng	Steung Treng	1	JAIF			
	Talabarivat	1	JAIF			
Total	**35 Districts**	**36 DFP (1PC)**		**8**	**67**	**75**

5.1.1.1 Target Areas and Population

During the reporting period, these CMAC's 36 CBURR District Focal Points (DFP) worked in 35 highly affected districts in the provinces of Kampong Speu, Kandal, Prey Veng, Svay Rieng, Kampong Cham, Kratie, Steung Treng, Rattanak Kiri and Mondul Kiri. Through this, 75 CBURR networks have been established in Chbamorn and Ang Snoul districts in order to assist to CBURR District Focal Points in the target areas in close coordination and cooperation to provide services to other demining intervention teams and development operators, as the following targets.

Table: Population in CBURR Target Areas:

Provinces	Districts	Population in Target Areas			
		Commune	Village	Population	Households
Kampong Speu	Chbar Morn	5	251	117,396	20,568
	O Dung	15	56	43,313	8,051
	Phnom Srouch	12	126	90,392	15,886
	Samroang Tong	15	286	133,983	24,850
Kandal	AnG Snoul	16	307	110,158	19,086
	Kandal Steung	23	154	92,855	16,951
	Ksach Kandal	18	93	122,283	24,211
	La Vea Em	15	43	70,792	14,134
Prey Veng	Kampong Leav	8	44	58,804	12,284
	Ba Phnom	9	108	85,714	18,045
	Kampong Trabek	13	122	122,613	24,904
	Preah Sdech	11	145	121,190	23,888
Svay Rieng	Svay Chrum	17	168	150,282	29,206
	Kampong Ro	12	87	67,467	13,808
	Svay Teap	11	86	66,570	13,386
	Romdoul	10	78	53,138	11,040
Kampong Cham	TboungKhmom	16	235	213,674	41,352
	Dam Bé	7	63	51,594	9,793
	Ponher Prek	8	150	123,675	24,344
	Memot	14	177	110,693	21,510
	Cheung Prey	10	74	87877	19004
	Chamkar Leu	8	83	115,711	22846
	Kg. Siem	15	111	110,028	2368
	Prey Chhor	15	176	139,902l	31665
Mondulkiri	Sen Monorom	4	14	6,996	1,261
	Ou Reang	2	8	2,473	390
	Picheada	4	20	5,368	819
	Keo Sei Ma	5	29	7,296	1,320
	Koh Nhek	6	28	8,910	1,571
Kratie	Snoul	5	44	38,471	7,594
	Prey Prasob	8	45	56,563	10,565
Rattanakiri	Ban Lung	3	16	16,959	3,118
	Ou Ya Dav	7	35	10,867	1,946
Steung Treng	Steung Treng	4	17	25,360	4,648
	Talabarivat	11	46	21,963	3,892
Total	**35 Districts**	**362**	**3,525**	**2,521,428**	**500,304**

5.1.1.2 CBURR Achievements

UXO Risk Education

36 CBURR District Focal Points (DFP) worked closely with the 75 CBURR volunteer networks and the local authorities, where volunteer networks to deliver UXO risk education to vulnerable groups and individual villagers by collecting village population to attend in a small group concentration and by visiting households to assess their needs for UXO action as well collecting information about the risks and UXO contamination, and identify EOD tasks to be reported to the intervention teams for appropriate action to address the UXO threats in their communities. These CBURR DPF and volunteer networks closely work with CMAC intervention teams such as EOD, MRE and CMC for quick response and interventions. During the reporting period, the CBURR made the following outputs:

Donors	Achievement						
	Number of Village visited	Session Delivered	Household visited	Participants			
				Men	Women	Children	Total
UNDP	272	664	1,297	1,803	1,894	2,759	6,456
JMAS	4,237	4,737	22,573	28,089	23,041	34,477	85,607
JAIF	1,248	3,590	11,280	18,396	13,042	12,993	44,431
BHP BILLITON	77		879	1,103	921	514	2,538
TOTAL	**5,834**	**8,991**	**36,029**	**49,391**	**38,898**	**50,743**	**139,032**

Linkage with Mine Action

It could be noted that, even CBURR DFP and networks cannot respond themselves the villagers' report the presence of an UXO and UXO contaminated areas, but they worked very closely with EOD teams as well as CMC and MRE teams to respond to those villagers' requests as well through delivering the report to CMAC Intervention teams for appropriated action in both the presence of an UXO and UXO contaminated areas to be cleared for a safe from the threat of them.

Hereby, the presence of CBURR in the former battle field at eastern provinces of Cambodia is a signal of remarkably increasing the UXO risk awareness among the local people as well as the number of calls to collect UXO found in their vicinity. The following table show the number of mine/UXO found by District Focal Points (DFP) and CBURR Networks reported to EOD and MRE teams for destruction:

Donors	Achievement									
	Request Sent by DFP and Networks and intervened by EOD and MRE				Sources of Request					
	Requests Reached	AP Mines	AT Mines	UXO	People	Student	Police	Military	NGO	Authorities
UNDP	111	5		709	41	17	35	1	1	16

JMAS	2,460	458		21,172	1,129	487	394	82	116	357
JAIF	466	59		4,509	260	37	78	5	70	25
BHP BILLITON	24	1		324	21		2			1
TOTAL	**3,061**	**523**		**26,714**	**1,451**	**541**	**509**	**88**	**187**	**399**

Physical Impact and Social Economic Analysis

It should be positively noted that the casualty rates in the provinces of Svay Rieng, Kandal and Prey Veng, where 12 CBURR networks operate, dropped over 50% in year 2006 compared after the deployment of the CBURR in those high casualty districts. In 2007, base on the casualty rates reported by CMVIS showed that the general trend of the casualty rates is dropped by 24.56% compared each other to year 2006 for the provinces of Kampong Speu, Svay Rieng, Kandal, Prey Veng, Kampong Cham, Kratie, Steung Treng, Rattanakiri and Mondul Kiri. The reasons of the decrease in casualties can be roughly explained as follows:

- The presence of CBURR DFP and networks is expanded in their UXO affected communities and directly delivered UXO risk education activities and messages to the isolated areas.
- Obstructed and deprived the dangerous activities involved to collecting and keeping of UXO for scrap metal business.
- Improving the status of socio-economic growth in the areas after UXO clearance that benefits the people in their farming business. Therefore, fewer people take risks to go into the scrap metal business.
- Quick response by CMAC Intervention teams to the UXO tasks requested by CBURR and the local authorities.
- The local police, through training by CMAC and coordination with CBURR, are more involved in enforcing the laws on scrap metal business.

II. SURVEY, MARKING AND AREA REDUCTION

Minefield and related information is very important of the demining part to reach the demining activities in Cambodia. If there is neither real information about mine and UXO, nor the demining activity will be not conducted. Since an era of civil war had been started in Cambodia 1979, there were no records of where the mines are, and nobody knows clearly about that, even if the opposition parties themselves did not also know and

recorded where the mines were laid. At a first day of demining operations in Cambodia during the UNTAC era, a Mine Marking Teams (MMT) collected mine information by interviewing villagers and former soldiers and by gathering data on casualties and marked those hazardous areas so that the demining teams can access to clear for safe in emergency saving life for the refugee and IDP.

This is noted that, over the past 14 years, approaches to mine action have evolved and changed. In the early phases of mine action, focus was placed on clearing large scale of area for emergency and risk reduction purposes. As mine action methodology and technology improve, resources become scarce, and priorities change, mine action today is conducted in a slightly different way from the first day of demining operations. Today, information, obtained through (technical) survey, plays a crucial role in determining where to clear, how to clear and when to clear. Each clearance site is limited the purpose of utilizing after the land was already cleared. This is particularly essential in the Cambodian context where abundant landmines were laid by all warring parties and factions (no records or reports) and availability of resources to clear these landmines remains a persistent and critical challenge.

As stated above, since there are no records of where the mines were laid, information on their locations has to be gathered by interviewing villagers and former soldiers and by gathering data on casualties. Very often it is more appropriate to conduct a technical survey when there is no immediate need to clear all the land. The objective in such circumstance is to accurately identifies, record, mark and fence the outer edge of the hazardous area, and by doing so release some land for productive use. The process through which the initial area indicated as contaminated (during the general mine action assessment) is reduced to a smaller area is known as area reduction.

CMAC alike has developed an effective technical survey capacity and has been implementing it since 2002. The primary aim of CMAC's technical survey is to collect and verify landmine and UXO contamination information to quickly and reliably identify and classify the contaminated areas, level of risks and to enable the clearance requirements to be more clearly defined. In order to speed up technical survey information collection, CMAC redefined its technical survey concept and process in late 2006. In this new concept, technical survey utilizes the community-based mine risk reduction network members as the moderator of information by using all existing sources of information within their community and by coordinating with key informants as well as the local authorities to ensure that the obtained information is verifiable and reliable. While the new concept of technical survey involves a lot of inputs from the local authorities and the CBMRR, its outputs (mine/UXO contamination maps) are distributed more widely to the village authorities, PMAC/MAPU and CMAA for planning and prioritization purposes. Land released through this process can also be removed from the contamination map in the national database.

CMAC technical survey is designed to produce three main outputs. Firstly, it aims to provide a sustainable mine action information tool at the community level by providing appropriate training to the Community-Based Mine Risk Reduction (CBMRR) members and their volunteers on how to regularly and systematically update the landmine and UXO problem within their own community on a provided map. A similar training is also provided to the Provincial Mine Action Committee (PMAC) members for the same purpose - updating and using the map for the planning and prioritization purpose. This effort can naturally strengthen the communication and cooperation between the affected community (CBMRR) and local authority (PMAC) for both prioritization and planning processes. Secondly, the technical survey defines a new road map for the affected community by identifying the real threat of landmines and UXO and classifying the level of threats and technical requirements for subsequent clearance operations. Thirdly, this effort frequently reduces a significant size of suspected landmine and UXO areas previously identified by the Impact Survey. The released areas, through the process called area reduction, can be recorded and mapped in a systematic and professional manner. In response to the Royal Government's policy of accelerated area reduction, technical survey plays even a more crucial role in determining which area can be released to productive use based on a systematic and professional

technical assessment. In addition, through the technical survey process, minefields or contaminated areas not previously recorded in the Impact Survey (Level One Survey) are also identified. This indicates the level of accuracy and depth of the technical survey, which fully and systematically collects, records and analyzes mine contamination problem in a given village.

i. Deployment

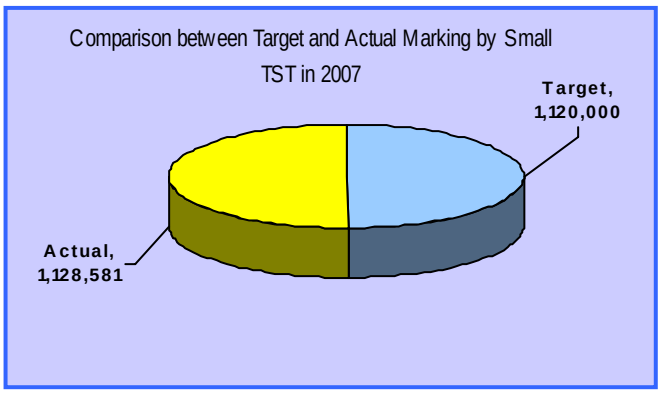
During the reporting period, CMAC deployed a total of 23 technical survey teams. 19 Technical Survey small teams, which is a team consists of 5 members and 4 Technical Survey large teams which a team consists of 10 members. The deployment of the small TS teams is spread out in all demining units to map and conduct minefield pre-clearance survey, marking and limited clearance for risk reduction. The deployment of the four large technical survey teams was concentrated on high casualty provinces such as Battambang, Pailin and Oddar Meanchey. In general, Battambang and Pailin has been known having the highest casualty rates of all provinces in Cambodia, therefore the technical survey strength has been particularly focused on these two areas.

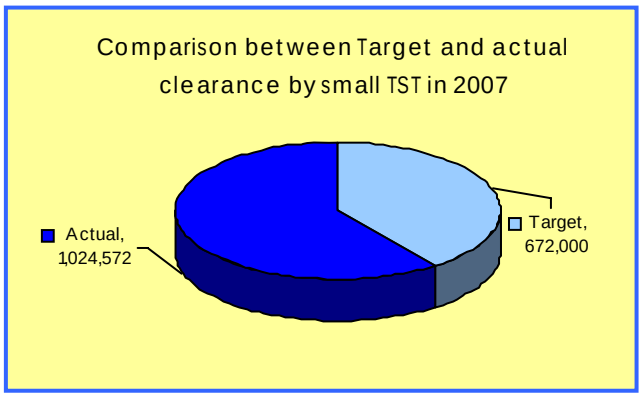
i. Achievements

1. Small Technical Survey Teams

During the reporting period, CMAC deployed 19 small TST teams throughout the 6 demining units (DU) such as DU1, DU2, DU3, DU4, ERO and DU6. The major tasks of these teams are to survey, mark, and map the minefields in preparation for clearance by other toolboxes. In addition, they also conduct limited clearance for risk reduction, development sites or other specific purposes.

Beside the major tasks stated above, in 2007, some small TST teams were contracted to work for the private companies. A small TST#01 was sent to work for Liberty Mining International (LMI) in Rattanakiri and Oddar Meanchey provinces. This contracted was started for 3-month period from June-August 2007 in phase#01 (First contract), and from October- December 2007 (second contract) in province of Rattanakiri and Oddar Meanchey in order to conduct a path finding, survey and surface clearance in mine exploration, while TST#10 was added in this second contract in order to speed up its activities. It is indeed the TSC#08 was contracted to work for Action Group for 3-month from April – June 2007 in mine exploration activity in Samlot district, Battambang province. It should also be noted that during the reporting period, TST#10 was either contracted to work for LMI, or contracted for CADCOMMS to conduct a path finding, survey and surface clearance for Telecom cable networks on national raod#01, 03, 04, 05, 06 (A) and national road#06 from Kampong Cham to Suong district. In total 139 spots had been checked and verified as stated in the contract. In comparison, the clearance achievement during the reporting period is 1,128,581m which is a 0.76% over the set target (1,120,000m). In addition, the actual clearance is 52.47% over the set target for 12-month period, which shows the success of these teams in terms of accurate deployment and flexibility responses. The following table is its achievement during the reporting period.



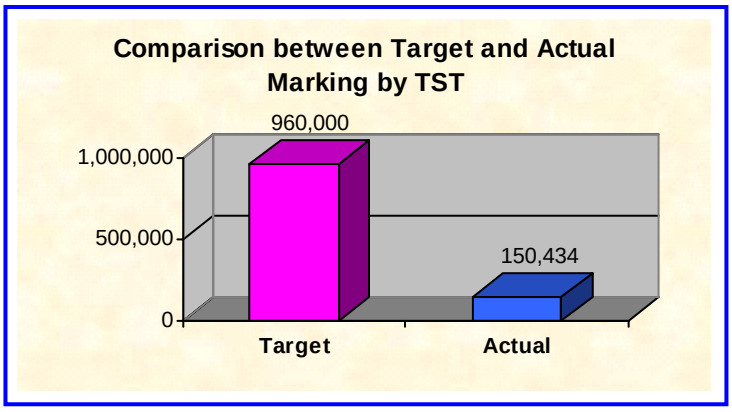


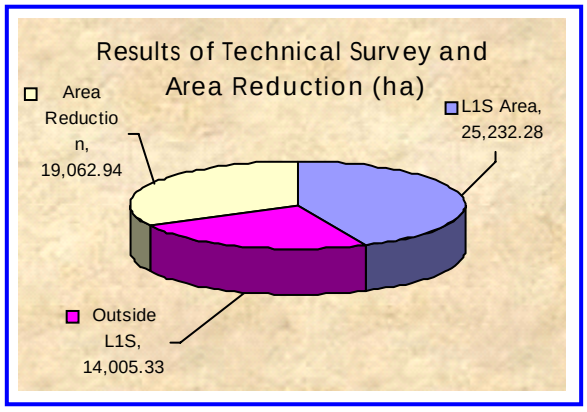
Type of Achievement	2007	2006	Variance (+) and (-) In 2007 & 2006
⊙ Total Area cleared (m²)	1,024,572	820,664	+24.85%
• Survey and spot check (m²)	822,826	-	
• Areas cleared in UXO field (m²)	201,746	-	
⊙ AP & Improvised mines found & destroyed	158	166	-4.82%
⊙ AT mines found & destroyed	2	3	-33.33%
⊙ UXO found & destroyed	150	167	-10.18%
⊙ Linear meter marked (m)	1,128,581	1,136,863	-0.73%
⊙ Number of minefields surveyed and marked	577	203	+184.24%
⊙ Fragments unearthed	300,102	277,263	+8.24%

2. Large Technical Survey Teams

During this reporting period, 2 teams were deployed in DU2 (Battambang) and the other 2 in DU3 Pailin. In September 2007, one large TST from DU3 was initially deployed in Siem Reap due to the requirement of DU6 in order to conduct the technical survey in highest affected target district in the province, especially in Srey Snom district, Siem Reap province. According to CMAC's new concept of technical survey, it is targeted that technical survey will be thoroughly and fully conducted in each province (starting from most heavily contaminated and highest casualty provinces such a Pailin, Battambang, Oddar Meanchey and Banteay Meanchey) to map out the total mine and UXO problem in the those provinces for area reduction and subsequent planning and prioritization. The major tasks of the large technical survey teams include collection, verification and analysis of information obtained from the key informants as well as from the local authorities, communities and CMAC's CBMRR where they exist in the survey villages to identify contaminated areas from non-threat areas.

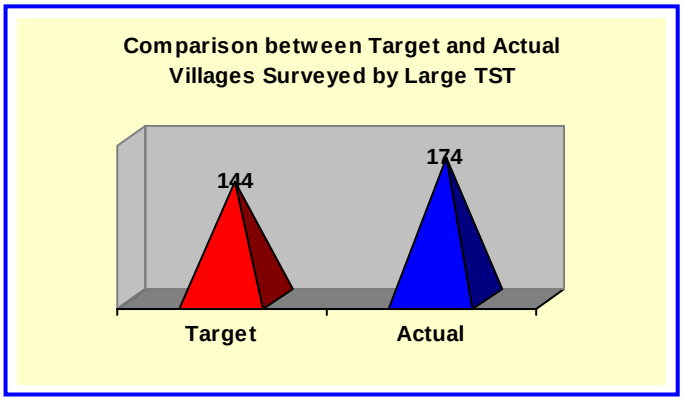
The outputs of the technical survey will be mapped under the categories of confirmed minefields, residual minefields and suspected minefields. Non-threat areas initially identified as contaminated or suspected areas in the Impact Survey (Level One Survey) will be reduced from the contamination map and this is referred to as area reduction. Results of the technical survey are distributed to the village, CMAC's demining unit, PMAC/MAPU and CMAA for subsequent applications (planning and prioritization) and follow-up. Minefields identified through the technical survey process are also marked with permanent marking as information to the villagers and for subsequent identification and action.

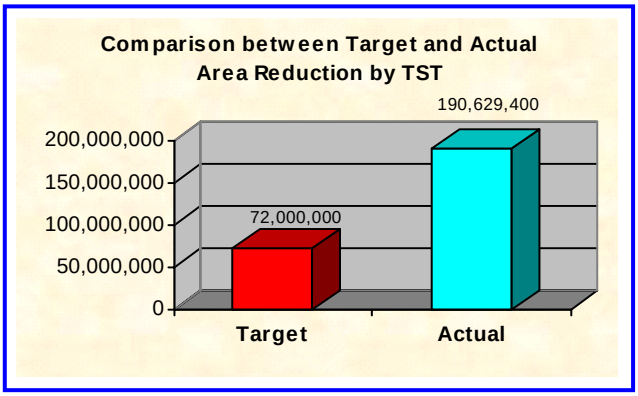




One very important note about the technical survey activities in 2007 is the significant area reduction they achieved through the technical survey process in Pailin and Battambang. In total they surveyed 25,232.28 ha of area reported as contaminated in the Impact Survey (Level One Survey). Of this, they reduced a total area of 19,062.94 ha from the Level One Survey (area reduction), which means that this 19,062.94ha is free from or of very low threat and can be returned to productive use. Without this technical process, this 19,062.94ha would be otherwise fully cleared, squeezing on the already- scarce resources. This is indeed in line with the Royal Government's strategy of area reduction to return land to normal use. In addition, through the technical survey process, 14,005.33ha of contaminated area was identified outside the Level One Survey records. This emphasizes the level of accuracy and depth of technical survey as well as its importance and applications in mine action. It also highlights the important characteristics and practicality of CMAC's technical survey as a key tool contributing to mine action.

Type of Achievement	Achievement		Variance (+) & (-)
	2007	2006	
Number of villages surveyed	174	59	+194.92%
Total Area in Level One Survey (before TS) – ha	25,232.28	22,005.44	+14.66%
Area reduction from L1S (after TS) – ha	19,062.94	16,944.85	+12.50%
Total contaminated area found outside L1S (after TS) -	14,005.33	9,097.11	+53.95%
Total contaminated area after TS (in L1S & outside	20,174.67	14,157.70	+42.50%
Confirmed minefields – ha	9,099.96	10,740.70	-15.28%
Residual minefields – ha	1,820.08	2,048.50	-11.15%
Suspected minefields – ha	9,254.62	1,368.60	+576.21%
Area cleared by TS - m² (including admin area, etc)	150,434	151,739	-0.86%
AP & Improvised mines found & destroyed	22	335	-93.43%
AT mines found & destroyed	2	26	-92.31%
UXO found & destroyed	21	146	-85.62%
Small caliber found & destroyed (kg)	5	0	
Linear meters marked – m	1,637,271	811,170	+101.84%
Fragments unearthed	57,732	66,359	-13%





Indicator Analysis:

It could be noted that the achievement of the area reduction is 180.20% over the target plan set in 2007, and this is a signal of highest achievement, which is 42.50% over the achievement in year 2006. Beside, the achievement of the villages surveyed is 20.83% over the target plan set in 2007.

III. LANDMINE AND UXO CLEARANCE

1. Demining Platoon (Normal and Mobile)

The demining platoon is a mainly manual demining component in CMAC. The primary task of the demining platoons is to conduct full and large scale clearance of mine/UXO areas, both low-density, high density contamination minefields, high affected vegetation and dense forest, to provide risk reduction

and support resettlement, agriculture, community livelihood and development activities. The minefields cleared by the platoons are selected annually through the MAPU process, approved by the PMAC and integrated in CMAC's Annual Work Plan. Minefields selected through this process are classified under two categories to meet the climate conditions of Cambodia: wet season minefields and dry season minefields. Spare minefields are also selected through this process to ensure smooth demining operations throughout the year.

Deployment

From January to August of the reporting period, CMAC deployed 41 demining platoons; 03 nromal platoons and 39 mobile, and from September to December, CMAC had only 39 demining platoons deployed as 4 platoons were demobilized due to internal reform and to meet funding situation. These platoons were deployed in all Demining Units, with 69% of the platoons deployed in 4 provinces of Battambang, Pursat, Pailin and Banteay Meanchey (western part of Cambodia along the Thai-Cambodia Border). The remaining resources were deployed in the provinces of Kompong Thom, Preah Vihear, Siem Reap and Oddor Meanchey.

Demining platoons are either deployed alone or integrated with other toolboxes such as Brush Cutter teams and Mine Detection Dog teams in order to speed up clearance activities. The integration of toolboxes aims to make mine clearance more effective and efficient, as different minefield terrains are suitable for different toolboxes. For instance, if a minefield is covered with heavy vegetation, a brush cutter is needed to assist the platoon to remove the vegetation. A brush cutter is also needed in a complicated minefield contaminated with sensitive AP mines, especially Type 72. If, for instance, part of a minefield is contaminated heavily with fragments, an MDD team is useful. *The integration helps CMAC select the*

right task for the right tool. It is also very important to manage the integration properly to avoid overlapping roles or downtime due to poor field management.

In addition, the demining platoons are also assisted by hand-held grass cutting machines, which play a very important role to remove light to medium vegetation in the minefields. These grass cutting machines are light and flexible, and they are suitable for most minefields. These hand-held grass cutting machines are also used with other teams such as MDD, CMC, etc.

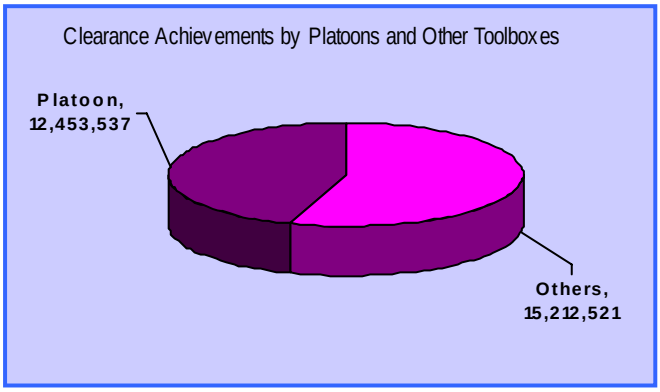
Achievement

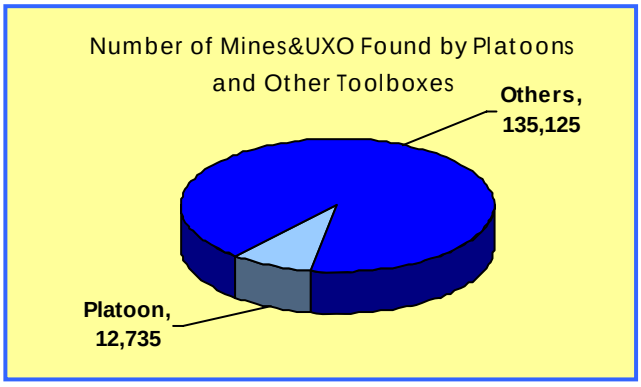
Throughout the year, all demining platoons achieved their results as the following:

Type of Achievement	2007	2006	Variance (+) & (-)
• Area cleared (m²)	**12,453,537**	**15,432,421**	**-19.30%**
• Total target for Clearance (m²)	**8,284,000**	**8,610,000**	**-3.79%**
• Number of minefields cleared	**349**	**330**	**+5.76%**
• AP & Improvised mines found & destroyed	**9,131**	**11,747**	**-22.27%**
• AT mines found & destroyed	**129**	**298**	**-56.71%**
• UXO found & destroyed	**3,475**	**6,392**	**-45.64%**
• Fragments unearthed	**19,618,729**	**21,639,217**	**-9.34%**
• Small calibers (kgs)	**36**	**2**	**+1700.00%**

Indicator Analysis:

The demining platoons remain the workhorse of CMAC and produce the largest portion of clearance compared to other toolboxes. In 2007, the platoons alone cleared a total of 12,453,537 m² of area, which is about 45% of CMAC's overall total productivity of the year. It could say that this is dropped down 19.30% less than the year 2006 due to 5 demining platoons were demobilized from 41 to 36 platoons in this reporting period. However, in 2007, the clearance achievement in total of 12,453,537 m² is 50.33% over the set target of 2007, which is success of these mobile platoons which produced a higher productivity during the reporting period.





2. Community Mine Clearance Teams (CMC)

CMC was converted from former Community Mine Marking Team (CMMT) and Mine Risk reduction (MRT) in the early of year 2006, and during the time, a CMC Team consists of 9 people: 1 Team Leader, 1 Senior Member and 7 Members. The aim of CMC is to provide quick response to the requests for risk reduction and small scale development in the affected communities so that reconstruction and development of the public infrastructures such as schools, wells, health centers, offices, access to water, safe paths and roads to the farms for the community living in high risk areas can take place, in order

- To provide the target communities with safe access to resources to facilitate their socio-economic development. In this context, the local communities will set the priorities in line with their local development requirements.

- To support NGOs' efforts to carry out development activities in the target areas.

After one year of operations on the ground in 2006, the CMC concept appears to be very effective and efficient, in addition to the multi-skills, the CMC team structure allows great flexibility and efficiency in small scale and rapid deployment; therefore they are very much

appreciated by donors and partners for their quick response and are in high demand for their deployment. It is indeed, the CMC teams are also trained in UXO search and demolition and are equipped with UXO detectors. So, in addition to clearing minefields, these teams are also capable of clearing UXO fields.

Although an achievement is showed a positive accomplishment and remarkable with effectively and efficiently, but the Team met some problems due to a narrow of vehicle and transportation and then these teams were restructured from 9 staff (1 Team Leader, 1 Senior Member and 7 Members) to 7 staff (1 Team Leader, 1 Senior Member and 5 Members) in mid of February 2007 into ERC and in September 2007. After restructure, the team is increased from 14 to 16 teams.

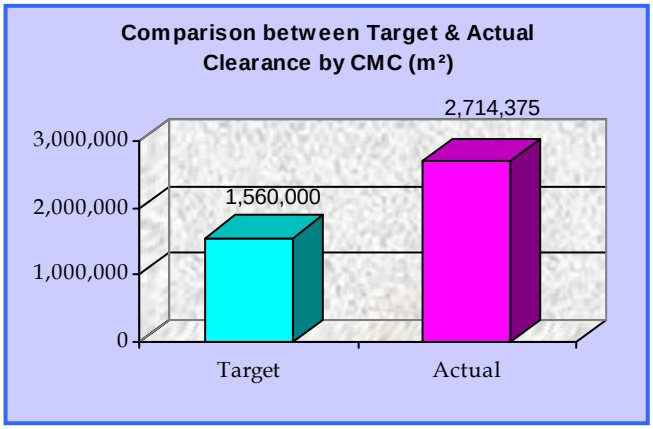
Deployment

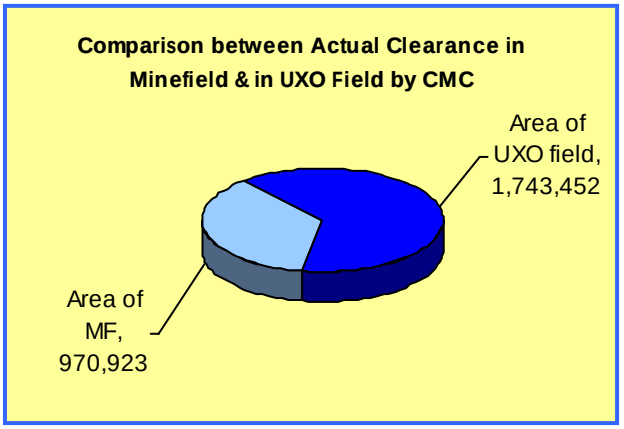
As earlier mentioned, these 16 CMC teams were deployed in DU1 (2 teams), DU2 (2 teams), DU3 (1 team), DU4 (2 teams), DU6 (1 team), ERO (4 teams), Headquarter (1 team) and another 3 teams in Contractual Service Units (BHP billiton project).

Achievement

During the reporting period, their achievements are showed in the following table:

Type of Achievement	2007	2006	Variance (+) & (-)
- Total area cleared (m²)	**2,714,375**	**2,053,456**	**+32.19%**
• Area of minefields (m²)	**970,923**	**1,697,470**	**-42.80%**
• Area of UXO fields (m²)	**1,743,452**	**355,986**	**+389.75%**
- Total target (m²)	**1,560,000**	**1,248,000**	**+25.00%**
- AP & Improvised mines found & destroyed	**730**	**1,012**	**-27.87%**
- AT mines found & destroyed	**9**	**5**	**+80.00%**
- UXO found & destroyed	**2,426**	**2,048**	**+18.46%**
- Linear meter marked (m)	**128,032**	**84,950**	**+50.71%**
- Fragments unearthed	**876,077**	**1,387,261**	**-36.85%**
- Small Calibers (kgs)	**23**	**290**	**-92.07%**





Indicator Analysis:

The clearance achievement during the reporting period is 2,714,375m², which is a 73.99% over the set target in 2007. In addition, the actual clearance in 2007 is 32.19% over the set target compared to year 2006, which shows the success of these teams in terms of accurate deployment and flexibility responses. But in this connection, it is showed that the area cleared in minefield is dropped (-24.80%) compared to the same period in year 2006 as well as the area cleared in the UXO fields which is optimistically increased 389.75% over the actual clearance in 2006, which accentuated an effective and efficient of accurate deployment and this is consistent of status and characteristics of work of CMC teams with their high achievement every year.

3. Mechanical Clearance Machines- Brush Cutters

The Brush Cutter was first introduced as a new Mechanical Mine Clearance tool into CMAC Operations Branch since 2000. The Brush Cutters were originally designed to cut and remove vegetation in the minefield to support other demining teams such as manual demining teams, MDD teams, Mobile teams and EOD teams.

Since the introduction in 2000 till today, Brush Cutter helped speed up the demining process and have changed the demining way, referring to the trial CMAC reviewed the BC SOP and started to use the Brush Cutters for three function, those are vegetation cutting, clear beam of soil in minefield and ground engaging activities to make them even more effective and efficient, 4 deminers are attached to each brush cutter. With the use of these machines, coupled with better field management and training, CMAC was able to double its productivity in 2006 and continues to deliver very high productivity in 2007. It could also be noted that, in 2007, 6 deminers are attached to each brush cutter.

With the added function and structure, the brush cutters have become a very important and effective toolbox. They are useful in several ways. First, they assist with vegetation removal, which significantly speeds up

Lesson learnt:

In 2006, a brush cutter detonated an anti tank mine in Samlot area during operations. The accident caused only minor damages to the attachment and the machine was back to operations only after a few hours of repair. The operator in the cabin was completely safe, physically and mentally. This brush cutter is sent back to operate in DU3 since 2006 and in 2007.

demining activities. Some minefields in Cambodia are twenty to thirty years old, so they are heavily covered by vegetation. Without the brush cutters, it is simply disastrous for the deminers to work manually. Second, in addition to the cutting attachment, the brush cutters are also attached with grapple hands, which enable uprooting and lifting heavy objects from the minefields. Third, they actually clear minefields through the ground penetration function. This assists deminers significantly in complicated minefields such as those contaminated with sensitive AP mines Type 72. Fourth, they can also assist development activities such as digging water canals and ponds and paving roads, etc, to help the communities. Fifth, brush cutters can be used to excavate soil mounds in suspected minefields and hard-soil minefield. The Hitachi brush cutters can also be attached with the multi-tool sifters from US Night Vision to sift soil and clear AP mines in certain minefield conditions. And last, but not least, their self-recovery capability is incredible. The brush cutters, considering their weight, are designed to work all year round. When stuck, they use their long arm to help recover themselves. In summary, the brush cutters are every effective machines. They are used both as a stand-alone tool or integrated with other toolboxes, such as manual platoons, MDD, etc. It should be highlighted that since the introduction of the brush cutters, together with improvements of SOP's and field management, CMAC has been able to double its annual productivity from around 10 to 12 km² until 2004 to 22 km² in 2005 and 26 km² in 2006.

Deployment

During the reporting period, CMAC deployed 25 Brush Cutter donated by the government of Japan in all DUs in the provinces of Banteay Meanchey, Battambang, Pursat, Pailin, Siem Reap, Oddar Meanchey, Kompong Thom and Pheah Vihear. This is also noted that, in 2007, CMAC deployed only 21 -22 brush cutters for the first 2 months (January-February) due to 4 BC teams (Hitachi in DU2-Grass Root project) were gabbed for 2-month and those teams were sent to attend in the demining refresher course at the CMAC Training Center, Kampong Chhnang. In March, after the approval on the agreement of Japan Embassy in Cambodia for supporting to DU2 (Grass Root project), these teams were deployed n the target areas in DU2. Thus, 25 BC were operating on the group from March – July 2007, and then 2 BC from UNDP were

moved to keep in CMAC Training Center Kampong Chhnang, and another one brought to keep in CMAC's Central Workshop in Battambang in order to reserve for development activities and to assist the Research and Development Project when requested. This means in total CMAC deployed 23-24 BC in average as stated in the following table:

Resources Allocation	January –December 2007											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BC DU1	6	6	6	6	6	6	6	4	4	4	4	4
BC DU2	6	7	10	10	10	10	10	10	11	11	11	11
BC DU3	4	4	4	4	4	4	4	4	3	3	3	3
BC DU4	3	3	3	3	3	3	3	3	3	3	3	3
BC DU6	2	2	2	2	2	2	2	2	2	2	2	2
Total	**21**	**22**	**25**	**25**	**25**	**25**	**25**	**23**	**23**	**23**	**23**	**23**

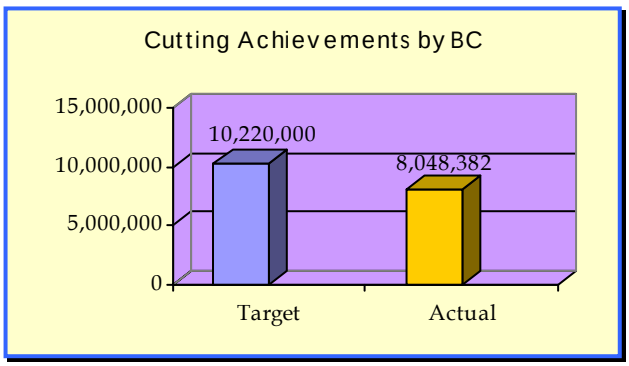
Achievement: During the reporting period, the Brush Cutters accomplished as the following achievement:

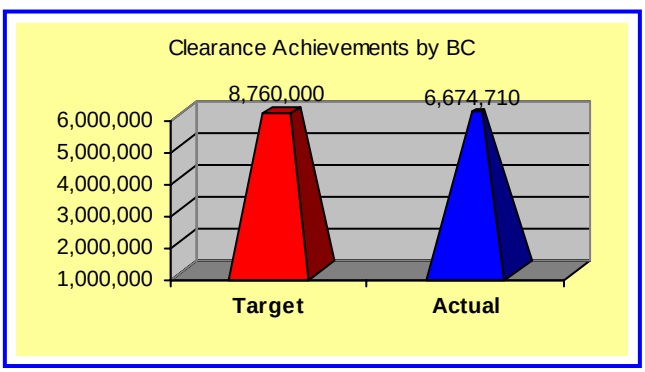
Type of Achievement	2007	2006	Variance (+) & (-)
• Total Area cleared (m²)	**6,674,710**	**5,247,415**	**+27.20%**
• Area of minefield (m²)	**6,665,990**	**5,247,415**	**+27.03%**
• Area of UXO field (m²)	**8,720**	**-**	
• Vegetation cutting (m²)	**8,048,382**	**8,409,575**	**-4.30%**
• Cleared soil mounds in minefields (m²)	**178,817**	**119,563**	**+49.56%**
• AP & Improvised mines found & destroyed	**6,859**	**7,187**	**-4.56%**
• AT mines found & destroyed	**25**	**53**	**-52.83%**
• UXO found & destroyed	**1,984**	**1,761**	**+12.66%**
• Fragments unearthed	**2.072,027**	**1,432,619**	**+44.63%**
• Small caliber (kgs)	**64**	**-**	

Indicator Analysis:

The clearance achievement during the reporting period is 6,674,710m², which is a -23.80% less than the set target in 2007 and the cutting progress is -21.25% less than the set target in 2007.

But if compared to last year, the actual clearance of 2007 is 27.20% over the set target of year 2006, which shows the success of these teams in terms of accurate deployment and flexibility responses. In addition, it is showed that the cutting achievement is also increased 27.03% over the set target in 2006. In general, it is less that set target of year 2007 due to some problems and critical issues as stated below.





Technical Trial

- In the mid of 2007, BC section was approved continuing to conduct the trial on multi-tool-sifters in a real minefield, located in O' Ampil village, Malai district, Banteay Meanchey province in order to deeply study to improve, and to know on how to perform actually, its advantage and productivity as well as operation cost effective.

- At the end of 2007, CMAC operation branch conducted the trail on how to excavate the deep UXO and AT mine by Brush Cutter at the provisional trial field in Siem Reap province. And the trial evaluation is success and recommended to implement in battlefield clearance (BAC) in the future at the eastern provinces of Cambodia. After trial, operation branch have developed SOP for UXO and AT Mine Excavation so that CMAC uses the BC to excavate and find a deep UXO and AT Mine underground as well as to assist deminers speed up its demining operation with safety, Quality and timely.

Supporting Development and Social Work:

Besides operations in the minefields, the BC teams also carried out community development tasks to assist the communities living in and near the mine affected areas as the following.

- In 2007, BC#06 has assisted to AUSTCARE project to dig ponds construction at least more than 40 ponds of Household Ponds with size 8m x 12m and Communal Ponds with size 30m x 40m were completed in Svay Chek district, Banteay Meanchey province.

- BC#16 has been completed a pond construction with size 20m x 30m for primary school at klang village, kdultahaen commune, Bavel district, Battambang province.

- BC#16 has been completed 3 ponds construction for fishery with size 20m x 30m for poor families who are living in O' Slapang village, Banann district, Battambang province, which was supported by GEJ project and also assisted to dig the box covert across the road that was requested by the villagers.

- BC#6 dug more than 40 family ponds with size 8m x 12m and community pond with size 30m x 40m in Svay Chak district, Bantheay Meanchey province, funded by Austcare project. And assisted to dig the box covert across the road that requested by villagers who are living near the clearing minefield in O' Ro El village, Sangkat Steng Kach, Khan Salakrout, Pailin municipality.

- BC#24 were contracted to clear the safe road for in total of 10km for Liberty Mine International (LMI) Company in Lompatt district, Ratanakiri province.

Major Events:

In January 2007, there have a US delegations conducted a field visit to the Brush Cutter operations that was using the multi-tool-sifter attachment in clearing in the high densities AP mine and fragmentation in O Ampil village, Malai district, Banteay Meanchey province at DU1 for continuing improvement the method and redesign.

Staff Capacity Building:

Although BC teams conducted the full operation in all DUs, but BC senior management Officer did not forget on the staff capacity building. This means that it is deliberate and mindful in propagation/instillation to improper for BC staff capacity and competency so that they can bring this knowledge to run its operations smoothly. During the

reported period (January to December 2007), the Brush Cutters section have held the following courses:

- In August 2007, Mechanical Mine clearance officer conducted a basic Brush Cutter training course at Training Center, Kompong Chhang. There were 23 trainees who were selected from BC deminer teams in all DUs for spare operators, in order to replace the BC operators while required. After completion the course, all of them can operate as well the Brush Cutter by themselves. These BC deminers were sent back to their own BC teams and they will be able to improve their skill with their own teams brush cutter.

- From October-December 2007, BC section cooperated with Research and Development Branch to conduct the trial on using of Battery charger pot which is connected to Brush Cutter machine while machine working in order to recharge an electric power of the mine detector's batteries for using in Brush Cutter team.

Problems Encountered:

During the reported period, Brush Cutter teams met some problems and critical issues in each DU as follow:

- The generators are not issued yet to some BC teams due to those teams are not enough the hand-held batteries to use for their operations and communication.
- Lack of BC deminer staff to fulfill in a vacancy position in some BC teams due to BC's achievement is dropped lee than the target set in 2007 as well as less than other demining components within CMAC.
- Some minefields in raining season in DU2, 4 and DU6 are much soft soil caused BC sank in mud of soil and sink land for many hours in every month, and then its radiator was broken at that time

due to BC was spent time waste for a week in waiting for repair from maintainer.

- In general, many BC teams were deployed to assist the other manual platoons, which their minefields met a dense forest and bamboos as well as an AP mine which remained in the thicket of bamboo to ensure that those minefields were empty and safe after clearance.

4. Mine/Explosive Detection Dog Teams (MDD/EDD)

The Mine Detection Dog (MDD) program was introduced into CMAC in late 1996, with the aim to use mine dog to fill CMAC's technical gaps in order to accelerate mine clearance progress. The Mine Detection Dog is used to locate the actual start line of minefield boundary, which is called Area Reduction. However, the MDD's have eventually become a very important clearance tool and the MDD teams are now integrated in full operations in 2000 with other demining toolboxes as such manual platoons and the brush cutters to assist manual demining in minefields contaminated with fragments, laterite soil, metal, hard grounds and quality control or dept laying mine.

The Mine Detection Dog has become one of the most important and effective demining tools in the recent years, and many demining organizations are becoming more and more confident in utilizing dogs to support demining activities. CMAC has established and sustained an effective operational MDD program, and has extended this service to MAG to support MAG's demining operations in Cambodia. In 2005, CMAC established the long-leash dogs in addition to the existing short leash dogs in order to diversify the search patterns to respond to different types of terrain and minefield conditions. In 2006, CMAC trained 4 explosive detection dogs for UXO clearance to even further speed up the UXO clearance operations. 2 Explosive Detection Dogs (EDD) conducted trial from January – April 2007, and then deployed in July 2007.

Another 2 Explosive Detection Dogs were deployed in Eastern Regional Office (ERO, Kampong Cham) in early of October 2007.

Deployment

In year 2007, CMAC deployed 18 MDD teams: 10 short leash teams with 4 dogs per team and 4 long leash teams with 2 dogs per team and 4 Explosive Detection Dogs with 2 dogs per team. It could be also said that 3 of 18 are short leash teams were contracted to work for MAG's demining operations in Battambang and Preah Vihear provinces.

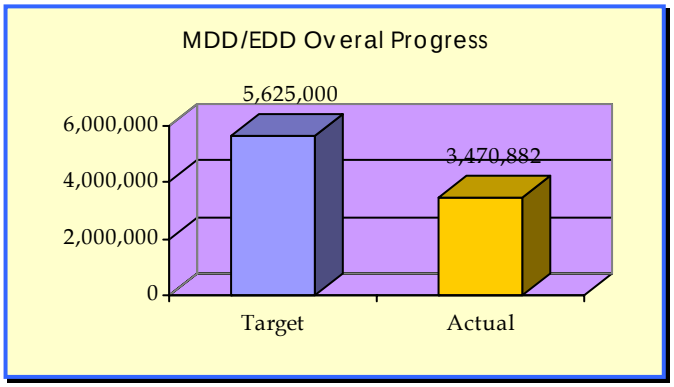
Achievement

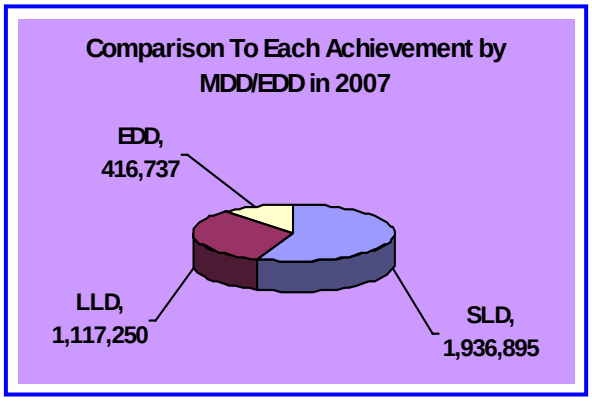
During the reporting period, the overall achievement of the MDD teams fell around 20% below the target. This underperformance was due to the fact that many training courses were conducted during the period in order to improve the MDD skills, field management and training. Even though the clearance achievement is a bit lower than expected, it is reasonably acceptable considering the capacity building trade-off.

	Achievement					
Type of Achievement	SLD	LLD	EDD-UXO field	Total 2007	2006	Variance (+) & (-)
Area cleared (m²)	1,936,895	1,117,250	416,737	3,470,882	2,243,106	+54.74%
AP mines found & destroyed	249	130		379	373	+1.61%
AT mines found & destroyed	2	30		32	11	+190.91%
UXO found & destroyed	330	66	482	878	471	+86.41%
Small caliber (kgs)	-	-	10	10	1kg	
Fragment unearthed	34,211	17,456	7,737	59,404	57,540	+3.24%

Indicator Analysis:

During the reporting period, the MDD/EDD clearance achievement is 3,470,882m², which is 24.95% less than the set target in 2007. However, the actual clearance in 2007 is 54.74% over the set target of year 2006, which shows the success and effectiveness of these teams. In addition, it could also be said that the deployment of new 4 EDD teams in ERO assisted increasing a higher productivity of MDD/EDD in this reporting period.





MDD/EDD Training

The training of dogs and MDD personnel are conducted at CMAC's Training Center in Kampong Chhnang, with the aim to sustain MDD operations through a quality and sustainable training program. The Training Centre always provided full trained-dogs and MDD personnel for expansion or replacement purposes, and to support the need of MDD operations such as basic courses and refresher courses. The Training Centre is a focal point and in charge of dog testing and licensing as well as field monitoring including development of MDD Standard Operational Procedures (SOP) and trial evaluation. Since the starting of this program, all field operational MDD's personnel are sent from the Demining Units to attend the training every six months for refresher training course, test and licensing to all of operation dogs. This means that one MDD/EDD teams is limited to conduct at least 2 refresher courses per year. At this period, the MDD's must pass the test to be licensed to continue working in the field with high quality and effectiveness.

In this connection, 4 explosive detection dogs (EDD) were being trained in 2006, and trialed at earlier 2007 at Long Vek Commune, Kampong Tralach district, Kampong Chhnang with the trial results is positive and potential forces in terms of deployment the EDD in the real UXO fields. Based on this evaluation of the performance of the EDD's in 2007 and appropriate concept as well as SOP's, CMAC deployed firstly 2 EDD teams to clear in real UXO field in ERO and another 2 EDD teams were deployed in early of October 2007. This is a success of the dogs training program, which provided in both capacities of dogs and MDD personnel. The following is the MDD basic course and refresher course as below:

Sn	Course Title	Course Number	Trainee Sources	Trainee Number	Duration	Start Date	Finish Date	Success Indicator
Quarter 01 (Jan/Feb/Mar-2007)								
1	New dog training		TC	10 dogs		5-Fre-2007	June-2007	Completed
2	UXO dog Trial Course	#01	TC	4	1 year	Jan-06	May-07	Completed
3	Basic Dog Handler Course	#08	External	16	12 weeks	5-Feb-07	6-Apr-07	Completed
4	SLD team refresher course	#40	Team 08	9	2 weeks	2-Jan-07	12-Jan-07	Completed
5	LLD team refresher course	#41	Team 1,2	10	2 weeks	2-Jan-07	12-Jan-07	Completed
6	SLD team refresher course	#42 (MAG)	Team 10	9	2 weeks	8-Jan-07	19-Jan-07	Completed
7	MDD key staffs meeting		DU,Team	20	3 days	23-Jan-07	25-Jan-07	Completed
8	LLD team refresher course	#43	Team 3,4	18	2 weeks	19-Feb-07	02-Mar-07	Completed
Quarter 02 (April/Mar/June-2007)								
9	SLD team refresher course	#44	Team 3,4	18	2 weeks	18-Apr-07	27-Apr-07	Completed
10	SLD team refresher course	#45	Team2,11	18	2 weeks	23-Apr-07	4-May-07	Completed
11	MDD Operations course	#04	Team	9	6-8Week	2-May-07	1-Jun-07	Completed
12	SLD team refresher course	#46	Team 6,7	18	2 weeks	20-May-07	8-Jun-07	Completed
13	SLD Operational Course	#47	Team 01	9	2 weeks	4-Jun-07	15-Jun-07	Completed
14	SLD Operational Course	#48	Team 5,8	18	2 weeks	19-Jun-07	29-Jun-07	Completed
Quarter 03 (July/Aug/Sept-2007)								
15	LLD team refresher course	#49	Team1,2	10	2 Weeks	3-Jul-07	14-Jul-07	Completed
16	SLD team refresher course	#50	Team10	9	2 Weeks	16-Jul-07	27-Jul-07	Completed
17	LLD team refresher course	#51	Team 3,4	10	2 weeks	1-Aug-07	10-Aug 07	Completed
18	SLD team refresher course	#52	Team3,4	18	2 Weeks	15-Sep-07	26-Sep-07	Completed
Quarter 04 (Oct/Nov/Dec-2007)								
19	SLD team refresher course	#53	Team11,2	18	2 weeks	4-Nov-07	16-Nov-07	Completed

20	SLD team refresher course	#54	Team6,7	18	2 weeks	13-Nov-07	24-Nov-07	Completed
21	SLD team refresher course	#55	Team 1,5	18	2 weeks	11-Dec-07	21-Dec-07	Completed
22	SLD team refresher course	#56	Team 05		2 weeks	13-Dec-07	26-Dec-07	Completed

Note:

- 10 semi-training dogs were completed by local trainer (donated by NPA-GTC, Bosnia) for replacement to a retired dog and expansion of new MDD team.
- 16 MDD team refresher training courses were completed in the reporting period.
- One MDD dog handler basic course, which is enable the project to have the reserved resources for replacement the dog handler for future's need.
- One MDD operational dog handler course was completed for replace and create new MDD team.

Veterinary Supporting

The veterinary support plays an important role in the MDD program to make sure that the MDD's are always fit for training and field operations. Its role is to provide both medical and health care support for all mine detection dogs, and CMAC has a residual capacity to provide the following veterinary services:

- Daily health control
- Weekly inspection
- Monthly anti-parasite program
- Annual vaccination.
- Minor surgery
- Preventive measures and,

However, veterinary services which require high-tech facilities such as lab and diagnosis, severe surgery, autopsy, echography and X–ray and pharmacology are contracted to the French Agrovet Animal Hospital in Phnom Penh.

Other Achievement

During the reporting period, MDD section achieved as the following:

- Completed trial UXO dog training in April 2007 in Kampong Chhnang and deployed those 4 EDD teams to ERO in July and October 2007.
- Conducted in a regular time to every MDD team in fields to ensure permanent applications of safety procedures are maintained.
- Completed the MDD introduction meeting to all De-mining Units Operational Officer/Assistant staffs, with the aim to affect an understanding and knowledge about MDD, to give them memory pictures for their future planning, supporting and working with MDD team.
- All shortfalls of dog handlers, close marker and dogs within each MDD team were filled during 2007.
- Update the MDD training manual on both Khmer and English.
- To review and update the MDD and EDD SOP.
- To completed update MDD/EDD Pro-file book and trained to MDD teams at the field and TC.

Problem Encountered

There were some obstacles emerged during the implementation of year 2007:

- The lack of communication and information were spread out and shared each other between MDD management and De-mining Unit and TC as well as MDD teams.
- Some of MDD equipment was not yet equipped for field MDD teams in DUs and TC.
- Lake of staff and dogs in MDD/EDD teams for long period.
- 01 mine detection dog was death caused by disease without treatment timely.
- The lack of follow up on MDD team productivities by all involve management staff inside the DU.
- Minefield selection in each DU for MDD team was not targeted as well for MDD operations.
- The use of MDD for toolbox integration with BC and manual de-mining platoon are not done properly and appropriately in DU level.

5. Explosive Ordnance Disposal Teams (EOD)

The aim of this Explosive Ordnance Disposal Team (EOD) is to research and collection Unexploded Ordnances (UXO) throughout Cambodia to destroy in order to save lives and supporting development of Cambodia.

The goal of this project is to bring about personal security to communities living in UXO affected communities in the target provinces of Cambodia, where are the highest affected areas to daily living of people and development activities.

Although, the three-decade of civil war of Cambodia and heavy US bombing droppings had been concluded in Cambodia, but the explosives remnants of wars are still scattering and remaining virtually everywhere in the country and continuing to pose fatal threats and exorbitant suffers to millions of civilian population without a date of forgetting. Today, the people of Cambodia desired to exculpate from this legacy of wars. This is an evidence of the magnitude of the ERW problem that is remaining and retaining to the development of Cambodia and endanger to people of Cambodia with the high casualty every year. Nevertheless, the attractive shape and scrap metal trade for scarce cash makes these ERW one of the most dangerous killers in post-war Cambodia. Furthermore, with the expanding economic and commercial activities as a result of road links and mining contracts in the eastern provinces, it is required that the response to the ERW problem needs to

Case Study:

At least, over a thousand of ammunitions were remained and found in Beung Krum village, Beung Krum commune, Lvea Em district, Kanldal province, where is being in a Navy immersed in the water since the decade of 1970s-1975s during the civil war of Cambodia. Those ammunitions are included 21 bombs (type: MK-82), 225 white plastic bags of TNT (5,600kgs), 563 artillery shell (type: 105mm-WP), 124 artillery shell (type: 105mm-HE), 172 mortar shell (type: 81mm-HE), and 1,107 mortar shell (type: 60mm-HE). On July 31st 2007, CMAC EOD technical experts cooperated with EOD teams to collect for destruction timely in order to bring safe for people in this area.

be imposingly increased either present or future need.

Similarly, the recent ERW Study conducted by CMAA and NPA with the financial support by the US State Department stresses the importance of the increased EOD response and the important role of CMAC in the long term EOD operations, in conjunction with other key players such as the National Police and the Armed Forces. This study has become the basis for the National EOD Strategic Plan, which recognizes CMAC as a long term key player in EOD operations, especially the cluster ammunition. The Plan also calls for the establishment of the Centre of Excellence for EOD, and the existing CMAC's Training Centre is expected to be utilized for this purpose.

UXO and Bombs were collected from the Mekong River

In as much as, the continued demand for increased EOD capacity, the established EOD Response framework within the National EOD Strategic Plan and the Royal Government's commitment to combat the UXO problem, CMAC is required to continue to make significant contributions as a key player in the short, medium and long term to the national EOD response capacity. In this respect, CMAC needs to increase EOD capacity as well as skills to meet the expectations from different players.

Deployment

In 2006, CMAC deployed a total of 21 EOD teams and 2007, CMAC

deployed 27 EOD teams in DU1, DU2, DU3, DU4, DU6, ERO, CSU, Training Centre and Headquarter,. These teams were deployed in both eastern and western provinces to respond to the EOD needs. To respond to these increased requirement, CMAC deployed 8 EOD teams in Eastern Regional Office (ERO) in 2007, 5 EOD teams in Phnom Penh, Kandal and Kampong Speu and 3 teams in Mondulkiri province that is 60% of whole CMAC EOD teams working in Cambodia.

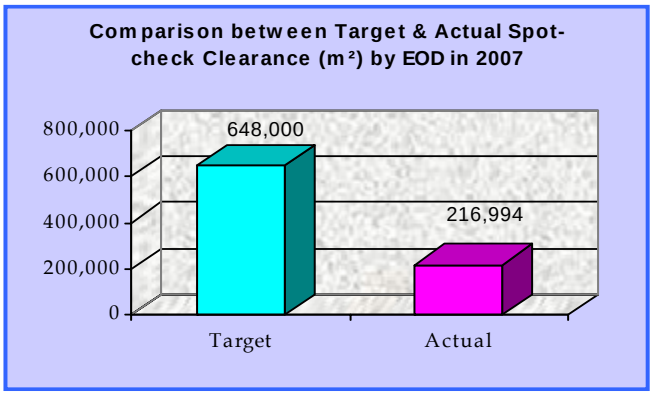
Achievement

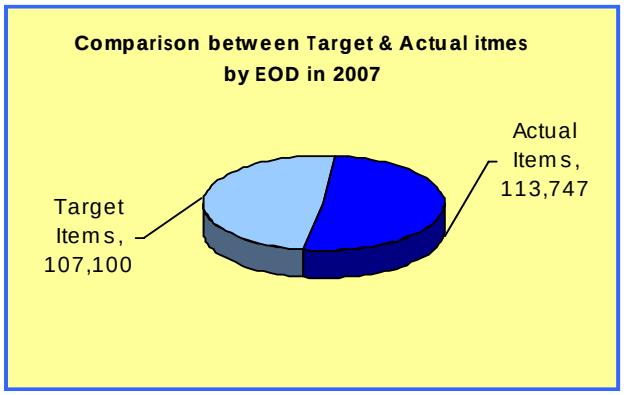
As early mentioned, its achievable expectation made EOD teams accomplished its outputs as the following during the reporting period:

Type of Achievement	2007	2006	Variance (+) & (-)
Number of Tasks Responded	8,388	8,370	+0.22%
Total Areas Cleared (m²)	216,994	193,463	+12.16%
• Areas Cleared in UXO fields (m²)	7,825	-	-
• Areas Cleared as spot check (m²)	209,169	-	-
Total Items destroyed by EOD (including 445 bombs(type: MK81, MK82 & 20pound)	113,747	108,336	+4.99%
• AP & Improvised mines	13,672	12,694	+7.70%
• AT mines	372	590	-36.95%
• UXO	99,703	95,052	+4.89%
Small calibers (kgs)	6,501	4,182	+55.45%
Fragments unearthed	14,761	1,975	+647.39%

Indicator Analysis:

In 2007, all the 27 EOD teams responded to 8,388 tasks, with a total achievement of 113,747 items collected and destroyed, which is imposingly higher than expected. However, this is already a significant number of items collected and destroyed. In addition, the EOD teams also conducted spot clearance around the locations where they collected UXO to make sure that no other ERW's were left behind in those locations which would pose future risks and require repeated action. Another point to note is that even after over 10 years of operations, CMAC still finds new types of UXO from time to time, some dating back to the World War II





In accordance with the achievement reached in the reporting period, it is 113,747 items (Mines & UXO), which is a 06.20% over the set target in 2007 (107,100 items) as well as it is 04.99% over the achievement of year 2006, but the actual spot-check clearance in 2007 is 216,994m², which is 66.51% less than the set target (648,000m²). However, the clearance is not a high prioritization task of this team's concept. Through this achievement, we can say that a thousand of people benefited from these removed items without any more threatening as well as providing a safe environment to where mine/UXO had been removed for destruction by EOD teams. And the below is the comparison between target and actual achievement in year 2007.

Lesson Learnt:

On 19th January 2007 at 08:30am, there was an AT mine accident instantly claiming the lives of seven community-based deminers in a minefield (M-5708B) in O Chamlong village, Tasen commune, Kamrieng district, Battambang province, Cambodia. This accident is a first tragic accident that there was never happened for CMAC since the last 13-years of its operations. An investigation report was found that:

1. *Caused by AT mines TM46,*
2. *Number of AT mines was between 9 to 10, according to calculation by Golden West's explosive expert,*
3. *AT mines were set off by booby traps,*
4. *This CBD platoon(1) is equipped complete set of SOP, good discipline as well as good performance,*
5. *Platoon Commander did not report and consult with the Supervisor on the suspicious object was not a violation of SOP, but it rather showed a weakness in his leadership, and*
6. *The explosive contained in the mine was still 100% good in quality.*

6. Community-Based Demining Platoons (CBD)

Mine problem is the magnitude of community problem and this should be addressed by the community themselves to ensure greatest impact. In order to better ensure problem ownership, CMAC decided to establish a community-based demining platoon to solve the problems for most mine affected, high casualty and highly contaminated communities, where the young people lack the means to generate income and are prone to risk from their livelihoods, where the landmine/UXO threat is constant and long term, and where economy and resettlement are severely impeded by the presence of imposingly vast minefields surrounding the communities, CMAC continues to involve the affected communities to conduct landmine/UXO clearance in their own communities for the purpose of their community rehabilitation and development. In this respect, the Community-Based Demining (CBD) has been established at the commune level with community deminers were recruited and provided a technical training from the affected villages within the target communes. The principle aim of the community-based demining is to reduce the risks to communities and provide safe land for the community rehabilitation and development. All members of the CBD platoons are recruited from the community based on the following criteria:

- Priority 1: Mine victims from poor families.
- Priority 2: Widows or widowers from poor families.
- Priority 3: Members from landless poor families.

Female villagers are especially encouraged to participate in this process. At least, 55% of women are engaged in this activity. Members of the CBD platoons are provided with the same training, equipment and personal gear as the regular platoons. However, when a new CBD Platoon is deployed after training, CMAC attaches technical advisors (khmer national), taken from the conventional platoons, to control closely the CBD Platoons. When there is confidence that the Platoon is sufficiently experienced, the technical advisors are removed. But eventually, the productivity of a new CBD platoon is usually lower than the set target.

Deployment

During the reporting period, 5 CBD platoons are deployed operating in Battambang, Banteay Meanchey and Preah Vihear. Three Platoons deployed in Battambang funded by Japan Mine Action Service (JMAS), 1 platoon deployed in Banteay Meanchey supported by Austcare Project, and another 1 platoon deployed in Preah Vihear supported by Grassroot-Kosanune.

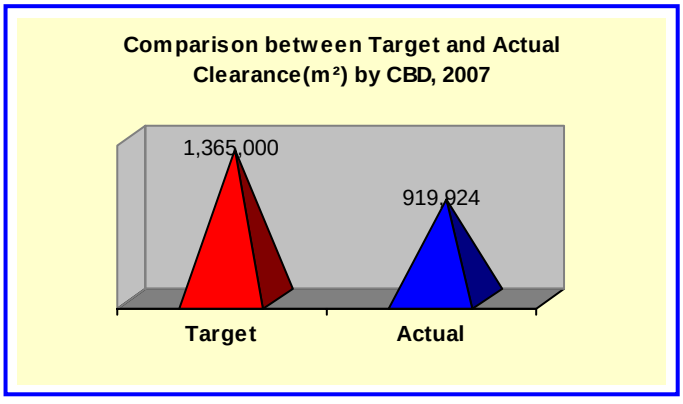
Achievement

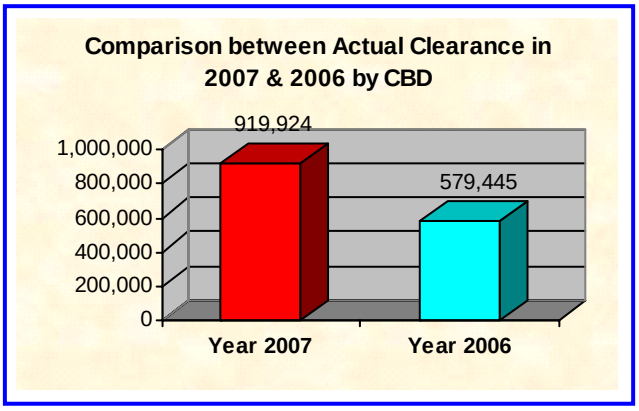
During the reporting period, the total productivity of 5 CBD Platoons achieved as the following:

Type of Achievement	2007	2006	Variance (+) & (-)
• Area cleared (m²)	919,924	579,445	+58.76%
• AP mines destroyed	302	502	-39.84%
• AT mines destroyed	3	9	-66.67%
• UXO destroyed	304	240	+26.67%
• Fragments unearthed	1,727,600	1,247,420	+38.49%

Indicator Analysis:

The clearance achievement during the reporting period is 919,924m², which is 32.60% lower than the set target in 2007. This is due to the target set in 2007 was for 7 CBD platoons, but actually two new CBD platoons were not established during the reporting year. However, this achievement is still higher than the year 2006 at least 58.76%, which shows the success of these teams, and as well as being showed their sufficient experiences and complete capacity in terms of ownership in mine action responses in their own communities.





4.1 SOCIO-ECONOMIC IMPACT OF OPERATIONS

Demining reduces potential accidents, provides land for agriculture, settlement and infrastructure development, and provides opportunity for development agencies to implement their activities in a safe environment. Without demining, most development activities cannot be implemented due to landmine and UXO contamination.

CMAC does not only clear minefields, but also conducts socio-economic assessment before the clearance operations. Indeed, limited resources do not permit to clear all mine and UXO affected area at the same time, thus the land to be cleared during the year is carefully selected and prioritized. The selection of minefields for clearance strictly follows the process of MAPU and PMAC, and priorities are given to the land with the highest socio-economic impact for the maximum of beneficiaries: the land with humanitarian purpose for resettlement of displaced persons and other form of human settlement, and the one with economic purpose for expansion of agriculture, access to essential infrastructures or development projects.

Lesson Learnt

It could be remembered that MAPU and PMAC in Banteay Meancey province had complained and raised the critical issues, and problems and reported to CMAA about the lack of and poor coordination between CMAC DU level and MAPU in every coordination meeting as well as during the work plan preparation. The critical issues and problems are the discrepancies of MF completion sketch and mapping, and the pre-MF assessment, prioritization and post clearance done were not reported and or invited them to attend the activities.

CMAC decentralized the minefields selection responsibility to the demining unit level, which work closely with the provincial authorities (MAPU and PMAC) within the selection process. MAPU mechanism ensures a fair and transparent mine clearance planning process by guaranteeing a proper use of the cleared land, with greater benefits to the poor families and which contributes to the community development.

In 2007, CMAC had cleared 570 minefields (575sites) of high priority, as followed by demining platoons, CBD, MDD, CMC, BC, TSC, and TST. The total beneficiaries of the CMAC's mine clearance are represented below:

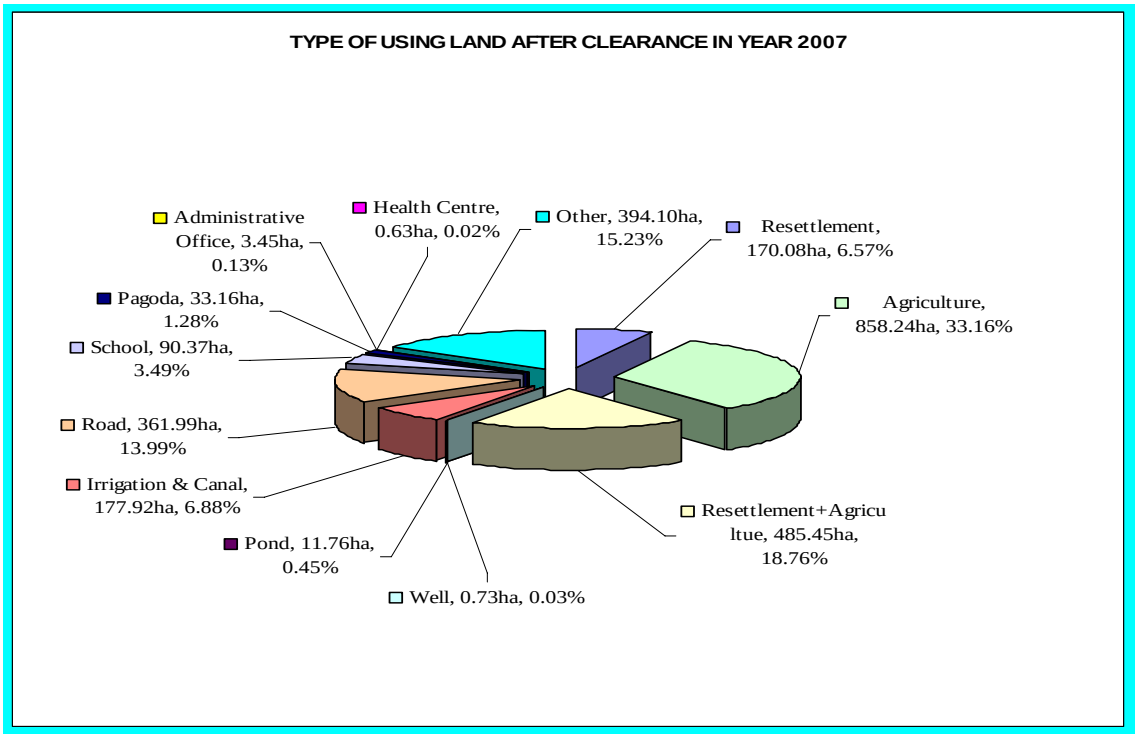
Type of Beneficiaries	TOTAL
Direct Beneficiaries (families)	3,913
Indirect Beneficiaries (families)	41,200
Students	21,467
Beneficiaries villages	256

These 570 minefields, CMAC handed over to the beneficiaries through the local authorities, NGO as well as the stakeholders. A total population of 45,113 families and 21,467 students in 256 villages receive socio-economic benefits from land clearance. In terms of post-clearance land use: Firstly, agriculture points out the largest amount of land, 33.16% of the total cleared land and secondly, resettlement/agriculture is 18.76% of total land cleared. And thirdly, the

next bigger category of land use goes to road construction, which takes up 13.99% of the total land use. These figures explain that the demand for land for others, irrigation/canal, which represent the basic means of survival, is still a critical issue for the Cambodian population, and a high consideration for demining tasks. In a very subtle way, poverty and landmine problem are closely linked, and a large number of civilian population often have to make ends meet on landmine contaminated areas, or minefields. In landmine clearance planning, this factor must be taken into consideration, in response to the Royal Government's effort to reduce poverty. Therefore, in addition to risk reduction, which of course remains a very high priority for Cambodia's mine action sector, fighting poverty through landmine clearance to give safe land for agriculture and development is also critical. In this sense, landmine clearance in Cambodia is not only justifiable for risk reduction, but it explains the great humanitarian and development necessities and produces high returns on investment.

SOCIO-ECONOMIC DISTRIBUTION OF LAND CLEARED IN 2007		
DEVELOPMENT CATEGORY	**Platoon / MDD/ CBD, mobile teams (ha)**	**Number of sites**
Resettlement	6.57%	40 Sites
Agriculture	33.16%	171 Sites
Resettlement plus Agriculture	18.76%	54 Sites
Wells	0.03%	17 Sites
Pond	0.45%	7 Sites
Irrigation, canal, road access	6.88%	37 Sites
Road portions	13.99%	105 Sites
School	3.49%	64 Sites
Pagoda	1.28%	11 Sites
Health Center	0.02%	3 Sites
Governmental Administration office	0.13%	7 Sites
* Others uses	15.23%	59 Sites
Total	**100%**	**575 Sites**

*Note: * Other Uses: temples, historical sites, construction sites, risk reduction.*



VI. TRAINING AND RESEARCH & DEVELOPMENT IN MINE ACTION

Training in Mine Action

Training in mine action is a 4th core function of CMAC's demining activities in Cambodia. To response to this main point, CMAC established its own Training Centre (TC) in 1994 at Kab Srouv, Khan Dongkor, Phnom Penh, where was converted from the Mine Clearance Training Unit (MCTU) since UNTAC's era. This is also noted that TC firstly based in Phnom Touch in Rattanak Mondul district, Battambang province, which was established by UNTAC and then handed over to CMAC in 1993.

It could be said that after handing and taking over to/from UNTAC, CMAC held its demining training activities for nearly one year period in Phnom Touch (Battambang), but in earlier 1994, the Khmer Rouge come up and devastated everything in place. By having conscientious commitment from the Government Council and the Royal Government of Cambodia, a new place (former refugee camp for repatriation) was agreed for CMAC to transpose its Training Centre from Phnom Touch (Rattanak Mondul district) to Kab Srouv, Khan Dongkor, Phnom Penh in 1994, in order to resuscitate and continue consistency its humanitarian demining training activities. In 1997, by supporting from the Government of Germany, a new Training Centre was established in Kampong Chhnang Province, where is an active main training facility which conducts training needs assessment, designs and delivers training courses to improve and enhance technical, medical and management skills, conducts and/or assists with research and development activities, and provides quality assurance services for field operations. Training conducted by TC is sometimes also delivered in other venues, such as at Demining Units, to reflect the field training requirements, and the US Army also organizes training

courses at the TC for CMAC and the Army in field specializations. In addition, the Training Centre also houses MDD/EDD training, test and licensing facilities and research and development facilities such as the Explosive Harvesting Program and detector test and evaluation facilities, including deep search. In other words, the Training Centre is a focal point for capacity building and development, quality assurance, research and development and improvement in demining methodology and procedures.

In 2007, the Training Centre conducted 65 training courses participated by 2,068 trainees, which is 92.61% of the total amount is CMAC staff. In addition to training its own staff, CMAC's TC also provides training to external demining organizations, which is 5.46% from the Royal Cambodian Armed Force (RCAF) and NGOs and 1.93% from the school children (primary student). In 2007, CMAC TC cooperated with German's Armed Force Experts to deliver a 2 Courses of Basic Ammunition technical training to the Royal Cambodian Armed Force (RCAF) and a course of navigation, mapping, GPS, Auto Card and GIS program for 10 staff of ECOSORN in Siem Reap province. As a part from this, a course of mine risk education and community liaison have been delivered for local NGO staff in order to bring this knowledge to work in their mine/UXO affected target areas. It could also noted that in 2007, the Training Centre and its products are well-known and good opus in effective implementation of mine action training and it is recognized that it is a high quality training school in mine action by many external demining organizations as well as international mine action experts, especially its universal articulation made the TC is attractive from oversees and worldwide. Consequently, emerging and increasing of visitors in both senior and high ranks, who come to visit the CMAC TC activity that is the evidence of evincing as well as an exchange programs had been done during the reporting period. The Training Centre also organized and conducted several mine action demonstrations for VIP visitors

visiting CMAC activities. The following training courses were conducted in TC during 2007:

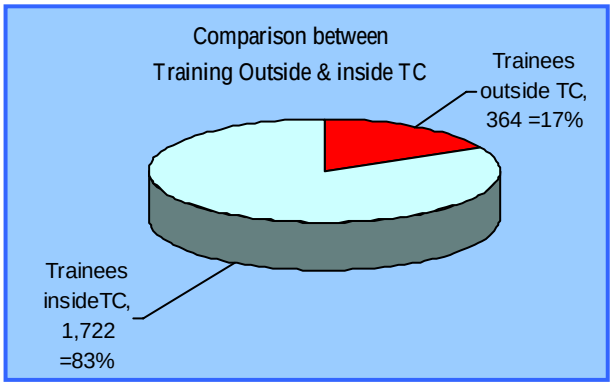
S.N	Course Title	Location	Sources of Trainee	No. of Trainees	Start Date	Finish Date	Remarks
1	MDD Refresher Course #40	TC	Dus	6	2-Jan-06	12-Jan-07	
2	MDD Refresher Course#41	TC	Dus	9	2-Jan-06	12-Jan-07	
3	MDD Refresher Course#42	TC	Dus	10	9-Jan-07	19-Jan-07	
4	Demining Unit#2 Refresher Course#60	TC	DU2	179	22-Jan-07	22-Feb-07	
5	ERW-CCT & ERW-IT Refresher Reinforcement# 01	TC	Dus	44	12-Feb-07	22-Feb-07	
6	MDD Refresher Course#43	TC	Dus	10	19-Feb-07	2-Mar-07	
7	Basic BHP Project Course#01	TC	Dus	60	19-Feb-07	16-Mar-07	
8	Basic CEIA - UXO Course#01	TC	Dus	10	22-Jan-07	26-Feb-07	
9	Basic Shallow Search (FEREX 4.0032 DLG)UXO#01	TC	Dus	12	27-Feb-07	3-Mar-07	
10	Demining CBD Refresher Course#01	TC	Dus	102	12-Mar-07	16-Mar-07	
11	MDD Refresher Course#44	TC	Dus	15	12-Mar-07	23-Mar-07	
12	Basic Operational handler Course#04	TC	Dus	8	5-Mar-07	31-May-07	
13	Basic Close Marker Course#08	TC	Dus	19	19-Mar-07	30-Mar-07	
14	MDD Refresher Course#045	TC	Dus	19	23-Apr-07	4-May-07	
15	EOD Advance Course#15	TC	Dus	15	23-Apr-07	8-Jun-07	
16	CBD Demining Refresher Course#61	DU2	CBD	85	21-May-07	25-May-07	
17	MDD Refresher Course#46	TC	Dus	17	20-May-07	1-Jun-07	
18	MDD Refresher Course#47	TC	DU2	9	4-Jun-07	15-Jun-07	
19	ERC Reinforcement Course#02	TC	ERO	27	11-Jun-07	28-Jun-07	
20	Basic Intensive Demining Course#08	TC	Dus	25	11-Jun-07	22-Jun-07	
21	Basic EOD Course#14	TC	Dus	16	19-Jun-07	27-Jul-07	
22	MDD Refresher Course#48	TC	Dus	18	19-Jun-07	29-Jun-07	
23	Basic EDD Team Leader Course#01	TC	Dus	6	19-Jun-07	19-Jul-07	
24	Mine /UXO Education and Community Course#01	TC	NGO	29	21-Jun-07	21-Jun-07	Civil
25	TSC Re-enforcement Course#01	TC	DU	21	25-Jun-07	6-Jul-07	
26	MDD Refresher Course#49	TC	DU	4	2-Jul-07	13-Jul-07	
27	Basic BC / maintenance Course#07	TC	Dus	26	24-Jul-07	17-Aug-07	
28	Mine Awareness Education Course#01	TC	Student	40	26-Jul-07	26-Jul-07	Primary student
29	MDD Refresher Course#50	TC	DU3	9	16-Jul-07	27-Jul-07	
30	MDD Refresher Course#51	TC	DU2	10	30-Jul-07	10-Aug-07	
31	Basic EDD Course#02	TC	Dus	4	16-Jul-07	30-Sep-07	

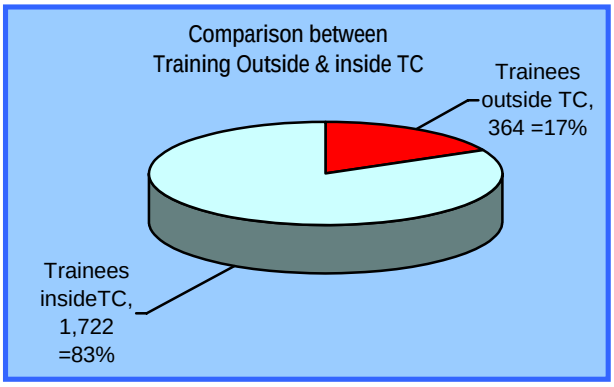
32	EOD Refresher Course#39	TC	DU	24	6-Aug-07	31-Aug-07	
33	EOD/CBURR Refresher Course#01	TC	Dus	16	6-Aug-07	16-Aug-07	
34	Mine Lab F3 Cousre#01	TC	Dus	3	6-Aug-07	11-Aug-07	
35	Demining DU3 Refresher Course(one man-one lane drill)#62	TC	DU3	267	20-Aug-07	31-Aug-07	
36	BHP Refresher Course#02	TC	BHP	75	3-Sep-07	28-Sep-07	
37	EOD Level one Course#15	TC	Dus	22	4-Sep-07	28-Sep-07	
38	Basic Explosive Harvesting Course#20	TC	Dus	4	10-Sep-07	28-Sep-07	
39	CMC Refresher Course#03	TC	Dus	54	17-Sep-07	28-Sep-07	
40	Operational dog handler Course#05	TC	Dus	3	17-Sep-07	8-Nov-o7	
41	EHP Basic medical training Course#01	TC	Dus	4	10-Sep-07	21-Sep-07	
42	MDD Refresher Course#52	TC	Dus	15	25-Sep-07	5-Oct-07	
43	Basic Ammunition technical training Course#01	TC	RCAF	38	1-Oct-07	26-Oct-07	35 RCAF, 3CMAC
44	Basic Explosive harvesting Project Course#21	TC	Dus	3	1-Oct-07	26-Oct-07	
45	First Aid Refresher Course#17	TC	Dus	17	15-Oct-07	16-Oct-07	
46	First Aid Refresher Course#18	TC	Dus	20	17-Oct-07	18-Oct-07	
47	Basic Demining Crs#126 (Project CBD –spare deminers crs#5)	TC	DU2	20	15-Oct-07	7-Dec-07	
48	Basic CBURR Course#03 (for Police)	ERO	Police	4	22-Oct-07	26-Oct-07	DFP
49	MDD Refresher Course#53	TC	Dus	20	5-Nov-07	16-Nov-07	
50	Basic Explosive harvesting Project Course#22	TC	Dus	4	5-Nov-07	22-Nov-07	
51	Basic EOD Level one Course#16	TC	Dus	21	13-Nov-07	13-Dec-07	
52	MDD Refresher Course#54	TC	Dus	15	13-Nov-07	22-Nov-07	
53	Basic Mine Neutralization Course#19	TC	Dus	20	12-Nov-07	22-Nov-07	
54	Basic Ammunition technical training Course#02	TC	RCAF	38	19-Nov-07	21-Dec-07	35 RCAF, 3 CMAC
55	Demining Re-enforcement Course#04	TC+du2	Dus	63	19-Nov-07	29-Nov-07	
56	Operational Re-enforcement SOP 2100 Course#01	TC	DU4	10	3-Dec-07	7-Dec-07	
57	MDD refresher course#55	TC	Dus	25	11-Dec-07	21-Nov-07	
58	Topography GPS/GIS course#09	DU6	ECOSORN	10	12-Dce-07	28-Dec-07	
59	Integration tool box course#01	TC	Dus	30	17-Dec-07	21-Dec-07	
60	Integration tool box course#02	TC	Dus	29	24-Dec-07	28-Dec-07	
61	First Aid refresher field course at ERO#19	ERO	ERO	82	10-Dec-07	19-Dec-07	
62	EOD Field refresher course at DU3#01	DU3	DU3	17	25-Dec-07	28-Dec-07	

63	Basic explosive harvesting project course#23	TC	Dus	4	2-Dec-07	24-Dec-07	
64	Demining reinforcement (one lane one man drill) course#05	TC	Dus	177	24-Dec-07	5-Jan-08	
65	CBURR seminar Course#01	TC	Dus	50	26-Dce-07	28-Dec-07	
		TOTAL :		**2,068**			

Indicator Analysis

During the reporting period, the Training Centre achieved 65 training courses participated by 2,068 trainees, which is 92.61% of the total amount is CMAC staff and 5.46% is from the Royal Cambodian Armed Force (RCAF) and NGOs and 1.93% from the school children (primary student). Eventually,
the training achievement of year 2007 is 106.18% over the achievement of year 2006. In addition, the course of year 2007 is 18.18% over the course of year 2006.





Ground Operational Achievement

In addition to training, the TC also responded themselves without assisting from EOD team to EOD requests from the communities surrounding Kampong Chhnang areas. In 2007, 16 requests for UXO action were responded with resulting in 186 UXO collected to destroy by TC Instructors.

Research and Development

CMAC's TC is currently housing the Explosive Harvesting program (still at research and development stage) supported by the US Government and managed by Golden West in cooperation with CMAC. Explosive harvesting facilities have been constructed and equipped, and work in underway to extract explosives from mines and UXO and reshape or cut them for subsequent field uses. In 2007, this Program produced a significant number of shaped charges and thousands of these charges were distributed to CMAC, Halo Trust and MAG for trial and use. Comments and evaluation from the three operators on the quality of the explosives have been very positive and effective, and the charges have been very useful replacing the imported explosives. However, the imported explosives are still needed to

sufficiently support to the field operations. In this respect, the following table is the products which produced by Explosive Harvesting program (EHP) and import from oversee in the reporting period as below:

Balance Stock-In/Out of Explosives:

SN.	Description	Unit	Last-Stock balance Dec-06	Source of Explosives		Issued To all DUs in 2007	Stock Balance Dec-2007	Remarks
				Import 2007	Golden West, 2007			
1	TNT 100g Golden West	Block	1,800		14,857	16,522	135	
2	Non Electric detonator, India	Ea	9,234	1,000		8,610	1,624	3,550 is unquality
3	Electric detonator, India	Ea	12,302	3,567		6,704	9,165	
4	Detonating cord, India	m	17,345	15,250		32,345	250	1,250 Borrowed from MAG
5	TNT Pentolite Booste 100g	Block	22,539	Nil		19,589	2,950	
6	Charge Dem.C4-30 Blocks/box	Block	2,166	Nil		Nil	2,166	
7	Non Electric detonating US	Ea	9,236	Nil		Nil	9,236	
	Safety fuse India/US	m	35,007.8	Nil		6,533	28,474.8	
9	Igniter time M60	Ea	12,060	Nil		3,960	8,100	
10	Primer Adaptor US	Ea	11,026	Nil		Nil	11,026	

PROJECT MANAGEMENT

In 2007, CMAC implemented a number of continuing and successful projects. 2007 was also the second year that CMAC executed the UNDP's 'Clearing for Results' project which was able to absorb approximately 50% of CMAC total resources. The successful implementation of the Clearing for Results Project from 2006 marks the continuing partnership between UNDP and CMAC in the management of mine action in Cambodia. Together with the UNDP, a number of bilateral projects, most of them on-going or renewed from 2006, were fruitfully accomplished. This demonstrates the maturity of the many relationships CMAC has with partners in reducing the mine/UXO problem in Cambodia. In addition, it should also be noted that contractual services, over the past few years, have played an increasing role in funding contribution to CMAC's operations.

CLEARING FOR RESULTS PROJECT

Project Background

The Clearing for Results Project was initiated by UNDP and the Royal Government of Cambodia to redefine its partnership strategy in managing multi donor funding. The new partnership strategy is output-based, meaning that the Project's achievements will be primarily measured in terms of productivity, efficiency, and socio-economic returns. This clearly shifts the focus from process management to result management. This partnership strategy also calls for competitive bidding for mine action resources when there is a reliable and transparent bidding process in place. However, at this stage, UNDP has awarded CMAC as its implementing partner of the Clearing for Results Project through a comprehensive evaluation of all demining operators in Cambodia.

The new initiative, now in its second year, immediately drew attention of four major donors, namely Australia, Canada, Spain and UNA-USA's Adopt-A-Minefield, to support the Project. The Australian Government made an initial contribution of 2 million Australian dollars to kick off the project, and later confirmed their longer-term commitment to this project with a total amount of 12 million Australian dollars from 2007 to 2010. The Canadian

Government has also committed 7.1 million Canadian dollars to support the Clearing for Results Project from 2006 to 2010. The other major donor for Clearing for Results Project is UNA-USA's Adopt-A-Minefield, who contributes around half a million US dollars. At the same time, Spain has also indicated their willingness to support the Project from 2007. In 2007, CMAC received a total of **USD 4,120,000** from UNDP for Clearing for Results Project.

Resource Deployment

A number of teams were deployed to support the Project 'Clearing for Results' in order to deliver the intended outputs stipulated in the Project Work Plan between UNDP and CMAC. Since the project focused on outputs, CMAC had greater flexibility in managing its demining toolboxes to deliver the agreed outputs. The resources were mainly deployed in the provinces of Pursat, Battambang, Banteay Meanchey, Kampong Thom, Preah Vihear, Kandal and Kampong Chhnang, based on the priority selection by the local communities and approval by the provincial authorities (PMAC/MAPU).

Teams deployed included mobile platoons, Technical Survey and Area Reduction Teams (TST), MDD teams, EOD teams, CMC teams, MRE teams, Brush Cutter teams and the CBMRR/CBURR as listed in the table below. These teams were deployed to support mine/UXO clearance, technical survey, mine and UXO risk education.

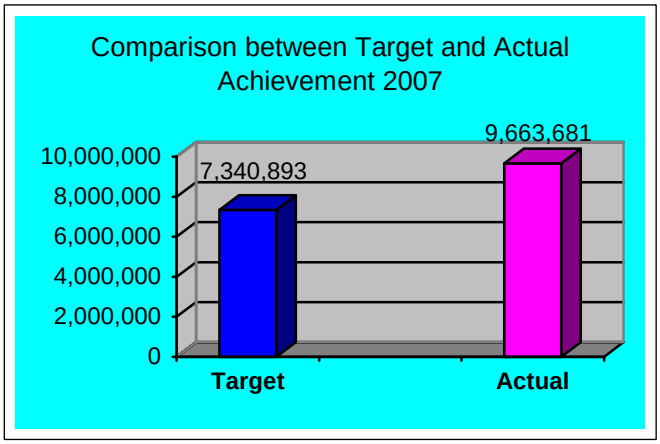
Demining Teams	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mobile Platoons (MP)	11	10	10	8	8	8	8	10	14	14	15	15
Technical Survey for Clearance	6	6	6	5	5	5	5	5	6	8	6	6
Technical Survey Team	3	3	3	3	3	3	3	3	3	3	3	3
Community Mine Clearance	9	8	4	2	2	1	1	1	1	4	4	5
Short Leash Dog (SLD)	2	3	3	2	2	2	2	2	2	2	2	2
Long Leash Dog (LLD)	4	4	4	4	4	4	4	4	4	4	4	4
Explosive Detection Dog (EDD)	0	0	0	0	0	0	2	2	2	4	4	4
Brush Cutter (BC)	9	10	10	8	8	8	9	7	10	10	10	10
Explosive Ordnance Disposal(EOD)	6	6	2	2	2	2	2	2	2	4	2	2
Mine Risk Education (MRE)	3	2	2	2	2	2	2	2	4	4	4	4
CBMRR	15	15	15	15	15	15	15	15	19	15	15	15
CBURR	0	0	0	0	0	0	4	4	4	4	4	4

It should be noted that most of the resources were deployed to clear minefields in 127 villages, 56 communes and 43 districts of the said provinces. These minefields were

selected by the local communities and approved by the provincial authorities through the PMAC/MAPU process. However, flexibility within the work plan with UNDP was also given to quick interventions for risk reduction in response to the community needs.

Achievements

During the twelve-month period of the reporting year, the clearance productivity of the Project reached a total of 9,663,681m² (against the target of 7,340,893m²), representing 31.64% higher than the target set in the proposal. This is a very high output compared to the target, and it clearly indicates CMAC's commitment to efficiency, determination and contribution to risk reduction and development. The overall number of items recovered and neutralized was also remarkable: all teams found and destroyed a total of 9,861 anti-personnel mines and 197 anti-tank mines, and 23,886 UXO and 360 kg of small calibers were collected and demolished. This output level compared with the costs of operations keeps CMAC one of the most efficient and competitive demining operators in Cambodia and worldwide.

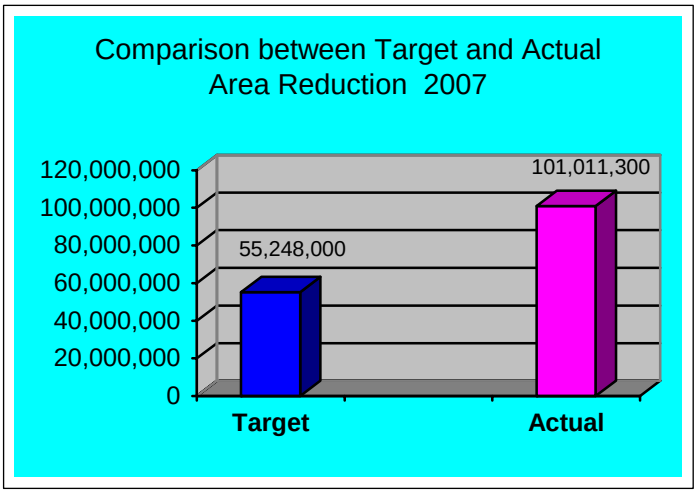


Resources (Average per year)	Project Overall Achievement									
	Area cleared (m²)	Cutting (m²)	Excavation (m³)	Linear meters marked	AP/Imp. Mine	AT Mine	UXO found	Small calibers (kg)	N. of Tasks responded	Fragments
11 MP	3,090,195	-	-	-	4,334	72	1,091	35	-	5,410,990
6 small TST	222,878	-	-	433,837	42	-	4	-	-	81,941
**3Large TST	85,569	-	-	1,205,503	16	2	2	-	-	42,441
4 CMC	1,186,588	-	-	15,202	336	2	998	18	-	259,174
SLD	669,334	-	-	-	56	2	83	-	-	11,585
4 LLD	1,117,250	-	-	-	130	30	66	-	-	17,456
4 EDD	416,737	-	-	-	-	-	482	10	-	7,737
9 BC	2,824,030	3,001,098	36,798	-	2,692	12	1,037	60	-	580,111
3 EOD	29,720	-	-	-	1,992	67	16,950	212	974	696
3 MRE	21,380	-	-	-	263	10	2,987	25	397	1,929
TC Instructor	-	-	-	-	-	-	186	-	16	-
TOTAL	**9,663,681	3,001,098	36,798	1,654,542	9,861	197	23,886	360	1,387	6,414,060

***9,663,681m² was included of full clearance in minefield + UXO field + area (m²) of administration + spot check + survey.*

CMAC realizes that minefield information is a crucial tool to effective demining and land release (area reduction). In response to the Royal Government's call for accelerated area reduction, together with the requirement for clearer and more reliable minefield information, CMAC sees its technical survey tool as the right tool to achieve this dual purpose. Also in this respect, CMAC changed its technical survey concept that reflects the changing need and the reality in the field.

With the new concept to meet the Royal Government's Policy on risk reduction strategy, CMAC achieved a significant output compared to the humble area reduction target it set in the proposal. So instead of achieving the 55,248,000m² target of area reduction, CMAC reached a double achievement, which puts the area reduction figure at 101,011,300 m². Furthermore, 56,574,300m² of contaminated areas outside of L1S was surveyed and found as the real minefield. This activity was concentrated in Battambang and Siem Reap provinces. For safety issue, 934,118 liner meters was also properly marked for the next clearance.



CMAC deployed a number of MRE and EOD teams assisted by the CBMRR and CBURR networks as part of its strategy to reduce risks to the communities where such risks pose a formidable threat. During the reporting period, these teams collected and destroyed a total of 2,255 anti-personnel mines, 77 anti-tank mines and 19,937 UXO and 237 kg of small calibers in total of 1,371 requests, in addition to 51,100 m² of area cleared for the safety of the people in the high risk communities. These interventions produced a very significant impact on risk reduction and helped addressed immediate safety issues faced by the communities.

Teams	Household visited	Course	Participants			Task Requests and responded					
			Men	Women	Children	Spot check (m²)	Request	AP & Imp. Mines	AT Mine	UXO	Small Caliber (kg)
EOD	–	–	–	–	–	29,720	974	1,992	67	16,950	212
MRE	7,477	240	8,287	9,589	24,024	21,380	397	263	10	2,987	25
**Total	7,477	240	8,287	9,589	24,024	51,100	**1,371	2,255	77	19,937	237

***It could be noted that these results are already included in the overall achievement as early stated in the above table.*

Collection and destruction of these ERW items is one thing, but creating confidence among the affected communities is another. The MRE teams and 12 Community-based mine risk reduction "CBMRR" District Focal Points worked closely with affected communities to provide mine risk education and to conduct risk reduction activities. In 2007 alone, these resources conveyed a total of 680 requests, all of which were responded by CMAC intervention teams. In addition, these teams and networks visited a total 26,993 households, participated by some 99,008 people, including 34,319 children.

Teams	Household visited	Course	Participants			Task Request				Task Response			
			Men	Women	Children	Request	AP	AT	UXO	Tasks	AP	AT	UXO
CBMRR	26,993	–	29,611	31,381	31,560	569	792	50	4,118	539	714	57	3,864
**CBURR	1,297	664	1,803	1,894	2,759	111	5	–	709	111	5	–	709
Total	26,993	664	31,414	33,275	34,319	680	797	50	4,827	680	797	50	4,827

*** It should be noted that annually progress report had been submitted to UNDP did not raise up the progress achievement of the CBURR during twelve months of the project period is due to the late of sending the report from the field teams.*

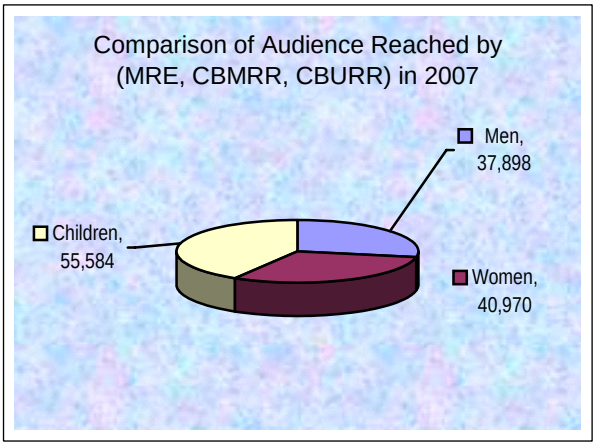
The table below is indicating materials were used by MRE to support its mine risk education and presentation activities during the reporting period.

Team	MRE Materials had been used for MRE Activities									
	Large T-Shirt	Small T-Shirt	Note Book	Poster	Flyer	Leaflet	Story book	MRE VCD	Video Tape	Audio Tape
MRE	818	651	4,455	6,083	100	4,265	14	8	-	2
CBMRR	1,463	758	5,294	18,246	-	19,295	-	8	-	-
Total	2,281	1,409	9,749	24,329	100	23,560	14	16		2

In total, the productivity of mine risk education and reduction(MRE), EOD and CBMRR/CBURR in 2007 was successful. The results of risk education and reduction is identified below.

- Households visited: 34,470
- Courses reached: 226

- Total Participants: 134,452
  - Men: 37,898
  - Women: 40,970,
  - Children: 55,584
- Task request/responded:
  - Request: 1,956
  - AP: 3,047,
  - AT: 127 and
  - UXO: 24,241



Socio-Economic Impact

The output of the Clearing for Results Project benefited 1,024 families directly and 8,720 families indirectly in 92 villages vulnerable to risks and threats from landmines and UXO, and 2,029 students who had constantly been exposed to threats as they had landed in the wrong areas with their families could enjoy freedom of safe movements in their local areas thanks to this Project. As the end result, 176 former contaminated locations were turned to productive use for development, resettlement, and other livelihood and community rehabilitation purposes.

Based on past incident and casualty reports, the removal and demolition of 9,861 anti-personnel mines from the contaminated ground may indicate that at least 9,861 lives could be literally saved, and the collection and destruction of 23,886 UXO may save up to 119,430 lives and limbs from potential deaths or injuries. In other words, it could be assumed that the grant of **USD 4,120,000** through the Clearing for Results Project in 2007 could potentially save 129,291 people. This does not yet consider the suffering and other social and economic impacts caused to the immediate families and children of the victims as a result of these incidents and casualties. The Project also turned 9,663,681 m² of former minefields into productive use, be it resettlement, agriculture or other development, and benefit thousands of needy people.

As stated in the proposal approved on August 08th, 2007, total area to be cleared 7,340,893 square meters. Around 15% of this clearance target will be accomplished by small quick response teams for risk reduction and safer livelihood activities. The remaining 85% of the land cleared is targeted towards humanitarian risk reduction and support development activities.

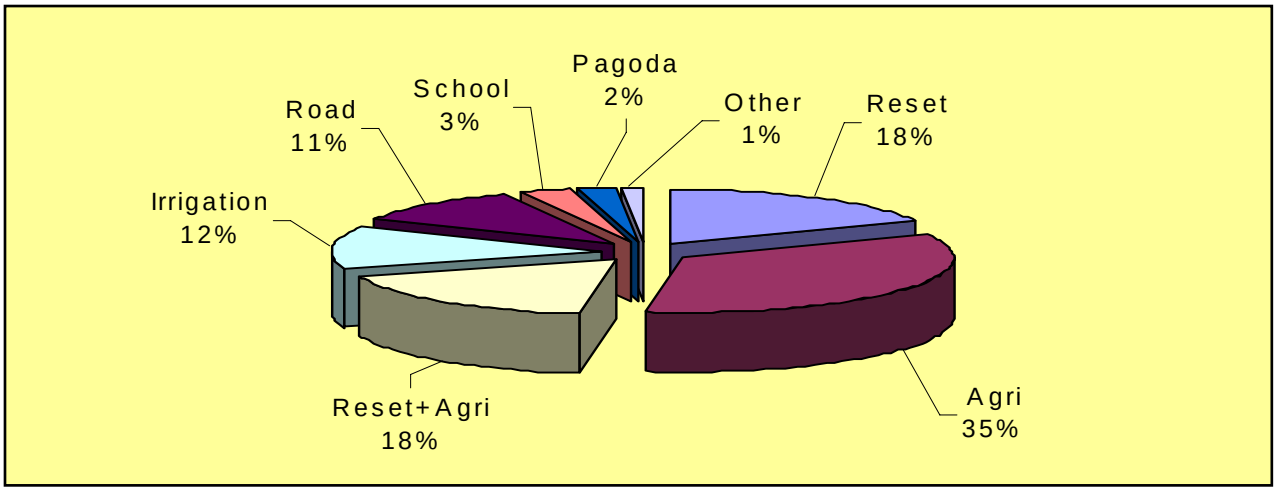
In respect, the output of the Clearing for Results Project: 86 minefields have been cleared completely and have been handed over to the local communities and authorities in purposes of the following:

- Beneficiaries :

  - Direct: 1,024 families
  - Indirect: 8,720 families
  - Student: 2,029 students

- Land Use:
  - Resettlement: 116.60 ha
  - Agriculture: 221.82 ha
  - Reset+Agri: 117.26 ha
  - Irrigation: 80 ha
  - Road: 70 ha
  - School: 20.26 ha
  - Pagoda: 13.14
  - Other 9.67ha

Socio-Economic Chart (in ha)



In theory of mine/UXO incident and demining concept have been said that, the removal and demolition of 9,861 anti-personnel and improvised mines from the contaminated land may rescue at least 9,861 lives could be literally saved, and the collection and destruction of 23,886 UXO may save up to 119,430 lives and limbs from potential deaths or injuries, and at least 197 cases of the movement of heavy machines have not been endangered caused by anti-tank mine explosion and evaded from the destruction. These should be noted that the removal of mines and UXO from the ground are either saving lives a thousand of people or materials and heavy equipment such as machinery have been rescued timely without any threatening from the mine/UXO in the communities. In other words, it could be assumed that the grant of USD 4,120,000 through the Clearing for Results Project in 2007 could potentially save 129,291 people. This does not yet consider the suffering and other social and economic impacts caused to the immediate families and children of the victims as a result of these incidents and casualties. The Project also reduced of 9,663,681m² of former minefields and battle fields (contaminated land) into productive use, be it resettlement, agriculture or other development, and benefit thousands of needy people.

BILATERAL PROJECTS

Projects directly signed between CMAC and donors or development partners are called bilateral projects. In 2007, CMAC executed 14 bilateral projects and 6 contractual services contracts.

Summary of Bilateral Projects Executed in 2007

PROJECT TITLE	DONOR / PARTNER	PROJECT LOCATIONS
The Integrated Demining and Development Program	Netherlands/NPA Cambodia	DU1, Banteay Meanchey
Integrated Mine Action and Development Program	Australia/Austcare	DU1, Banteay Menchey
The Project for Supporting Humanitarian Demining Activities in Battambang Province	Grassroots-Japan	DU2, Battambang
The Community-Based Demining (CBD)	Japan/JMAS	DU2-Battambang
Humanitarian Mine Action Project	USA	DU3, Pailin and Samlot (Battambang)
The Project for Supporting Humanitarian Demining Activities in the Provinces of Kampong Thom, Oddar Meanchey and Preah Vihear	Grassroots-Japan	DU4, Kompong Thom, Preah Vihear and Oddar Meanchey
Mine/UXO Clearance in Archeological Site of Koh Ker	Peace Boat, Japan	DU4, Preah Vihear
Humanitarian Demining in Siem Reap and Oddar Meanchey	Germany	DU6, Siem Reap & Oddor Meanchey
The Research and Development of Mine Clearance related to Equipment	Japan/JICS	Battambang
UXO Clearance Activities and CBURR Project	Japan/JMAS	Svay Rieng, Kandal, Kampong Speu, Kampong Cham
Explosive Harvesting Program (EHP)	USA/Golden West	CMAC Training Center (Kg. Chhnang)
Provision of MDD and Technical Assistance	NPA/GTC-Bosnia	CMAC Training Centre (Kg. Chhnang)
ERW Clearance in the EASTERN Province of Cambodia	Japan-ASEAN Integration Fund (JAIF)	Kampong Cham, Kratie, Steung Treng, Ratanak Kiri and Mondul Kiri
Mine Risk Education and CBMRR	UNICEF	All DUs
Post Clearance Development Project	GOOD EARTH JAPAN-HITACHI	DU2- Battambang
Post Clearance Development Project: "Building a Primary School on Land Cleared by CMAC"	Rotary International-District 2650	DU2 -Battambang

1. CMAC– NPA PROJECT IN DEMINING UNIT 1, BANTEAY MEANCHEY: The Integrated Demining and Development Program

1.1. Project Background

This project was supported by the Netherlands through the Norwegian People's Aid in Cambodia (NPA), implemented by CMAC Demining Unit 1 in Banteay Meanchey Province, with an amount of USD 2.5 millions to support a 4-year Integrated Demining and Development Program in Northwest Cambodia. The project period has run from May 2004 to December 2007. However, the project was completed at the end of August 2007 because of limited fund. During the reporting period from January to August 2007, the following resources were mobilized.

- Demining Unit1 Office (21 persons)
- 4 Mobile Demining Platoons (120 persons)
- 2 Technical Survey for Clearance Tasks teams (10 persons)
- 2 Explosive Ordnance Disposal teams (6 persons)
- 2 Mechanical Brush cutter teams (12 persons)
- 1 Mine Risk Education and Reduction Team (4 persons)
- 4 District Focal Point teams of Community based mine risk reduction (4persons)

  Total personnel employed by project: 177 persons.

The project's goal was to bring about personal security to communities living in mines affected area in O'Chrov and Malay district, Banteay Meanchey province in order to enable them to increase their socio-economic opportunities and to facilitate the safety of resettling rural communities threatened by mines and UXOs, thereby enabling national and international development agencies to carry out the development activities in the target area, specifically to support NPA resettlement project.

1.2. Project Activities and Achievements

As stated in IWP 2007, the expected outputs of the project were to clear 1,698,000m² of contaminated land. Project resources were mainly deployed at O'Chrov and Malay District of Banteay Mean Chey, which are highly contaminated by mines/UXO.

During 8 month period from January to August 2007, the project cleared a total area of 1,387,325m², marked 106,113 linear meters, found and destroyed 5,357 anti-personnel mines & improvised mines, 70 anti-tank mines, 97 UXO, 1,957 Kg of small calibers, and 1,468,440 fragments were detected.

Resources	Achievement									
	Area cleared (m²)	Cutting (m²)	Excavation (m³)	Linear meters marked	AP/Imp. Mine	AT Mine	UXO found	Small calibers (kg)	N. of Tasks responded	Fragments
4 MP	909,618				873	22	208			1,228,129
2 small TST	41,305			106,113	20					13,337
2 BC	415,541	418,746	19,723		1,804	2	74			224,754
2 EOD	14,600				2,389	46	5,549	1,957	382	1,299
1MRE	6,261				271		366		122	921
Total	**1,387,325**	**418,746**	**19,723**	**106,113**	**5,357**	**70**	**6,197**	**1,957**	**504**	**1,468,440**

In addition to clearance and marking, the project also carried out risk education activities by conducting 77 sessions of mine awareness presentation with 8,811 people from 1,618households in 64 villages. At the same time, the CBMRR networks conducted a face to face education reaching 3,696 households of 29 villages with the total participation of 16,742 audiences.

Support Teams	MRE Achievement							Request responded by EOD&MRE	
	House hold visited	Session/ Course	Village visited	Men	Women	Children	Total	Request	Mines/UXO reported
**1 MRE	1,618	77	64	1,987	2,307	4,517	8,811	-	-
4 CBMRR	3,696	-	29	5,104	5,445	6,193	16,742	201	1,731
Total	**5,314**	**77**	**93**	**7,091**	**7,752**	**10,710**	**25,553**	**201**	**1,731**

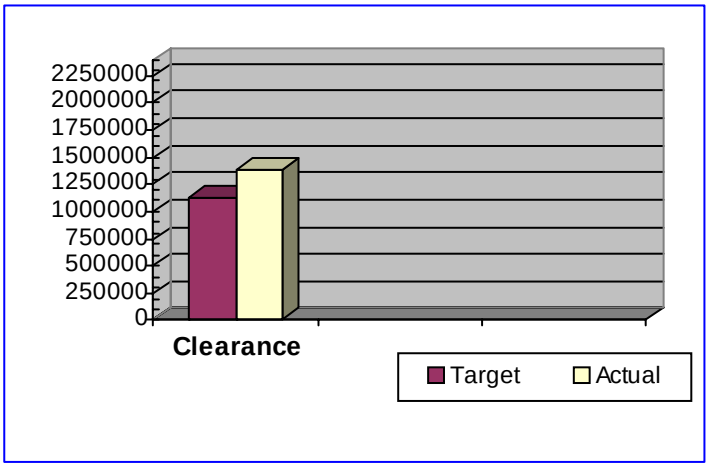
** *Number of request and mine/UXO found by MRE teams are excluded from these figures because they had been added into the overall achievement in the above table.*

The below table indicates the MRE material to be used for their mine risk education and presentation activities during the reporting period:

Support Teams	MRE Materials had been used for MRE Activities									
	Large T-Shirt	Small T-Shirt	Note Book	Poster	Flyer	Leaflet	Story book	MRE VCD	Video Tape	Audio Tape
1 MRE	138	158	1,408	1,600	-	2,199	2	-	-	-
4 CBMRR	197	118	1,240	3,330	-	4,907	-	5	-	-
Total	**335**	**276**	**2,648**	**4,930**	**-**	**7,106**	**2**	**5**	**-**	**-**

1.3. Socio-Economic Impact and Analysis

The area cleared was handed over to the local authorities to be used by the local population and infrastructure development such as roads, agriculture, canals and resettlement. The total cleared area benefits 353 families.



Actual clearance of 1,387,325 m² shows an over-performance of 22.55% compared to the target of 1,132,000 m² during the 8 month period. In general, productivity level of the project represents 5.47% during the 12 - month period against total CMAC clearance work plan for 2007.

The removal and demolition of 5,357anti-personnel and improvised mines from the contaminated ground may indicate that 5,357 lives could be saved, and the collection and destruction of 6,197 UXO may save up to 30,985 lives and limbs from potential deaths or injuries. As a result, it could be assumed that the grant of USD489,000 in 2007 can save 36,342 people lives and release 1,387,325 m² confirmed as safe land for 353 families of vulnerable people, who are threaten by landmines and UXO.

2. CMAC-JAPAN KUSANONE PROJECT IN DEMINING UNIT 2: The Project for Supporting Humanitarian Demining Activities in Battambang Province

2.1. Project Background

This project has been supported by the Government of Japan under the Japanese Grant Assistance for the Grass-root Project (KUSANONE) with the amount of USD 898,778 to support one year demining operation implemented by CMAC Demining Unit 2, Battambang Province, which is one of the most mine/UXO affected provinces with a high casualty rate. This project started from 17 March 2007 to 16 March 2008 with following resources:

- DU2 office staff: 15 persons;
- 4 Mobile Platoons, one MPL consists of 30 persons (120 persons in 4 MPL)
- 2 EOD Teams, one EOD team consists of 3 persons (6 person in 2 team)
- 2 small Technical Survey Teams, 1 team consists of 5 persons (10 person in 2 team)
- 1 Mine Detection Dog Team, one team consists of 9 person
- 4 Brush Cutter Teams, one team consists of 8 persons (32 persons in 4 teams)
- Support Staff 27 persons

During the implementation period, some resources were mobilized (changed) due to the requirement of field operations. As a result, some of them were increased and other were decreased based a flexible.

- DU2 office staff: 15 persons;
- 3 Mobile Platoons, one MPL consists of 30 persons (90 persons in 3 MPL)
- 2 EOD Teams, one EOD team consists of 3 persons (6 person in 2 teams)
- 2 small Technical Survey Teams, 1 team consist of 5 persons (10 person in 2 teams)

- 1 Mine Detection Dog Team, one team consists of 9 person
- 5 Brush Cutter Teams, one team consists of 8 persons (40 persons in 5 teams)
- Support Staff 27 persons

Total personnel had proposed 197 persons

2.2. Project Activities and Achievements

During the reporting period, all project resources of Demining Unit 2 were mainly deployed in high affected districts such as Ratanakmondul, Mong Russey, Sampov Loun, Kam Reang, Bovel and Phnom Preuk districts of Battambang. It should be noted that this project report is only stated for 10 month period from 17th March to 31st December 2007. As highlighted in IWP 2007, the plan of the project is to clear 2,360,000 m² of contaminated land during the period for a one year from January to December 2007. But due to 2-month gap from January to February 2007, the project was agreed to delay till 16th March 2008.

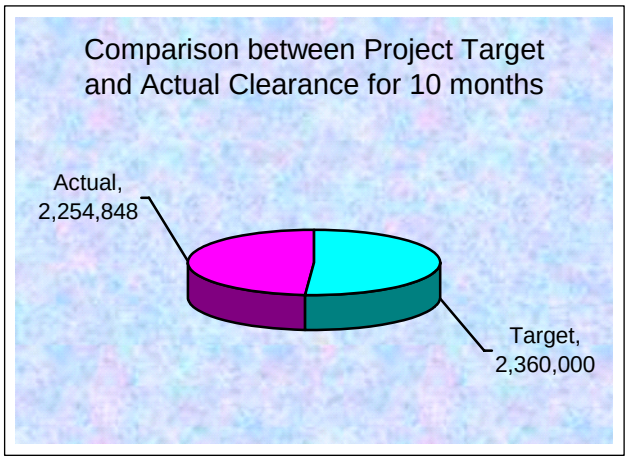
During the reporting period, the project achieved land clearance of 2,254,848m², marked 111,164 linear meters, and found/destroyed 2,403 anti-personnel mines, 103 anti-tank mines and 12,942 UXO.

Resources	Achievement									
	Area cleared (m²)	Cutting (m²)	Excavation (m³)	Linear meters marked	AP/Imp. Mine	AT Mine	UXO found	Small calibers (kg)	N. of Tasks responded	Fragments
3 MP	693,475	-	-	-	719	8	130	-	-	2,102,202
2 small TST	46,458	-	-	111,164	-	-	-	-	-	6,766
5 BC	1,324,445	1,319,160	6,867	-	350	4	286	-	-	283,449
2 EOD	4,048	-	-	-	1,307	91	12,522	2,508	635	1,916
1 SLD	186,422	-	-	-	27	-	4	-	-	3,306
TOTAL	**2,254,848**	**1,319,160**	**6,867**	**111,164**	**2,403**	**103**	**12,942**	**2,508**	**635**	**2,397,639**

2.3. Socio-Economic Impact and Analysis

During the period from February to December 2007, 24 minefields were completed and handed over to local authorities and communities in the purposes of road construction, resettlement, agriculture, schools, pagoda, and small scale agriculture areas as well as other areas which impacted by other non-clearance activities such as

EOD, mine risk education, and survey and marking, benefiting for 181 direct families, 1,267 indirect families and 195 students.



The productivity of clearance (2,254,848m²) is decreased slightly 4.45% less than the set target, if compared to one year target of 2,360,000m². But in respect, the project's productivity will represent over the yearly target set if the achievement to be completed by the mid of March 2008.

Demolition of 2,403 anti personnel mines and 12,942 UXO could be rescued at least 2,403 lives and 64,710 lives have been respectively saved and broke even from the incident. In short, the grant of USD 898,778 can save up to 67,113 people lives and release 2,254,848m² of land for 1,448 families and 195 students, who were under the threat of landmines and UXO.

3. CMAC-USA PROJECT IN DEMINING UNIT 3, PAILIN: Humanitarian Mine Action Project in Pailin and Samlot, Cambodia

3.1. Project Background

In 2007, it was the ninth year of the grant support from the Government of the United States of America, which has been starting since 1999 in humanitarian mine action activities in Cambodia, especially in Pailin municipality, and then the support had been extended to Samlot of Battambang in 2005 up to date, which are the most heavily mine/UXO affected municipality

and province with the highest casualty rate in the country.

From 15 August 2006 to 14 August 2007 US Department of State has agreed to support CMAC DU3 with total amount of USD 1,694,504 (12-month period) and for the current project has been starting from 25 August 2007 to 24 August 2008 with total amount of USD 1,600,000 for the period of 12 months for continuing from the previous expired project.

The goal of this project is to bring about personal security to communities living in mine-affected districts and to reduce suspected mine-contaminated areas.

- To bring about personal security, better socio-economic opportunities to communities living in mines/UXO affected areas chosen in consultation with all the concerned authorities and local communities.
- To support national and international development agencies' efforts to carry out development activities in the target areas in collaboration with CMAC.

3.2. Project Resources and Deployment

- From January to August 2007: there were 435 project personnel who were included with 21 personnel of 1 Demining Unit Office during the project framework implemented from 15th August 2006 to 14th August 2007.

- From August to December 2007, it was an ongoing project (2007-2008) of the new project framework, which has currently been kept continuing from August 2007 till August 2008, with total amount of 422 personnel. The below table was broken down as the following main input of the project resources:

Resources	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mobile Platoons (MP)	9	9	9	9	9	7	7	7	7	7	7	7
Technical Survey for Clearance	4	4	4	4	4	4	4	4	4	4	4	4
Technical Survey Team	1	1	1	1	1	1	1	1	1	1	1	1
Community Mine Clearance	2	2	2	2	2	2	2	2	2	1	1	1
Short Leash Dog (SLD)	3	3	3	3	3	3	3	3	3	3	3	3
Brush Cutter (BC)	4	4	4	4	4	4	4	4	4	3	3	3
Explosive Ordnance	2	2	2	2	2	2	2	2	2	2	2	2

Disposal(EOD)												
Mine Risk Education (MRE)	1	1	1	1	1	1	1	1	-	-	-	-
CBMRR	4	4	4	4	4	4	4	4	4	4	4	4

Note: *In this report CMAC is going to capture the figures from January to December 2007, which from 1st January to 31st August 2007 was in the ninth year of the grant support, and from 1st September to 31st December 2007 was an ongoing project in the tenth year of the grant support, which has currently been finished and keep continuing in 2008.*

3.3. Project Activities and Achievements

From January to December 2007, a surface clearance 5,339,059m² was achieved and 738,206 linear meters of minefield boundary was marked for risk reduction. During this period, 7,483 anti-personnel mines and improvised mines, 80 anti-tank mines, 7,270 UXO and 1,148 kg of small calibers were found and destroyed; and 7,582,243 fragments were unearthed. Furthermore, 1,155,662m² of vegetation removal made by Brush Cutter Teams was achieved, and 8,961.68ha of area reduction was reduced from the Level One Survey and 8,347.77ha of contaminated areas were found by TST outside the Level One Survey map.

Resources	Achievement									
	Area cleared (m²)	Cutting (m²)	Excavation (m³)	Linear meters marked	AP/ Imp. Mine	AT Mine	UXO found	Small calibers (kg)	N. of Tasks responded	Fragments
9 MP	2,989,879	-	-	-	1,448	19	797	-	-	6,292,839
4small TST	169,668	-	-	302,085	47	2	31	-	-	126,285
4 BC	1,132,156	1,155,662	36,336	-	1,726	1	304	-	-	826,604
2 CMC	180,493	-	-	4,254	184	3	133	-	-	293,918
1 Large TST	64,865	-	-	431,768	6	-	19	5	-	15,291
3 SLD	765,707	-	-	-	160	-	197	-	-	17,418
2 EOD	26,392	-	-	-	3,217	52	4,462	1,100	833	7,932
1 MRE	9,899	-	-	-	695	3	1,327	43	301	1,956
Total	**5,339,059**	**1,155,662**	**36,336**	**738,107**	**7,483**	**80**	**7,270**	**1,148**	**1,134**	**7,582,243**

In addition to clearance and marking, the project also carried out risk education activities made by MRE and CBMRR networks achieved as follows.

Support Teams	MRE Achievement							Request responded by EOD&MRE	
	House hold visited	Session/ Course	Village visited	Men	Women	Children	Total	Request	Mines/UXO reported
1 MRE	1,070	43	47	740	922	1,171	2,833	-	-
4 CBMRR	5,546	-	30	8,026	8,991	8,830	25,847	556	4,289
Total	**6,616**	**43**	**77**	**8,766**	**9,913**	**10,001**	**28,680**	**556**	**4,289**

The table below indicates the material used by MRE for their mine risk education and presentation during the reporting period.

Support Teams	MRE Materials had been used for MRE Activities									
	Large T-Shirt	Small T-Shirt	Note Book	Poster	Flyer	Leaflet	Story book	MRE VCD	Video Tape	Audio Tape
1 MRE	115	135	1,540	1,550	-	1,800	150	5	1	8
4 CBMRR	447	223	2,647	10,160	-	17,994	39	22	2	1
Total	**562**	**358**	**4,187**	**11,710**		**19,794**	**189**	**27**	**3**	**9**

Another significant milestone of this project to note is the technical survey work. In response to the Royal Government's call for accelerated area reduction, together with the requirement for clearer and more reliable minefield information, CMAC sees technical survey as the most appropriate tool to meet these requirements. Due to the fact that Pailin is one of the most heavily contaminated areas in Cambodia and because of the physical size of the area, CMAC started to conduct a comprehensive technical survey in the Pailin area in order to map out the contamination problem of this former hot battle area in northwestern provinces of Cambodia in the 1990s.

In 2007, CMAC deployed five technical survey teams in Pailin, one under the US-CMAC Project and one under the UNDP's Clearing for Results Project, and reduced a total area of 8,961.68ha off the Level One Survey Contamination records in Pailin and 8,347.77ha of contaminated areas were searched outside the Level One Survey map. This record does not include the results of the team under the UNDP's Clearing for Results Project. Since the deployment of technical survey teams in Pailin in 2003 up to the end of 2006, CMAC completed technical survey in 30 villages out of total 79 villages in Pailin, and in 2007 alone CMAC completed further 49 villages in Pailin and another 3 villages in Samlot district of Battambang province. In this regard, CMAC achieved its plan to complete technical survey tasks in the 79 villages of Pailin in 2007. This success came from the change of technical survey methodology and process as

well as the commitment of the field personnel to reach this objective. All technical survey reports have been recorded in CMAC's database in Phnom Penh. These records will illustrate how much the area is contaminated and which areas are clean or pose less threat to the communities and development, and will make mine clearance operations in Pailin more effective, efficient and productive.

3.4. Socio-Economic Impact and Analysis

During 12 month period from January to December 2007, it could be confirmed that 16,516 families of vulnerable people and 894 students who are threatened by landmines and UXO could benefit from this mine clearance activities in 103 minefields in 51 villages of Pailin and Samlot district of Battambang province for supporting development and construction of roads, irrigation/canal, resettlement, agriculture, school and other official uses as requested.

The clearance productivity during this reporting period from January – December 2007 achieved by 5,339,059m² equal to 92.53% compared to the total 5,770,000m² of annual clearance target set in IWP 2007. This was due to the fact that some teams were not deployed as set out in the work plan, for example, the number of platoon was dropped from 9 platoons to 7 platoons in the middle of 2007 as stated in the table above.

In addition, the removal and demolition of 7,483 anti-personnel and improvised mines from the contaminated land may indicate that 7,483 lives could be saved and larger damages of communities' properties could be rescued on time due to an un-explosion of 80 AT mines had been taken in places, and the collection and destruction of 7,270 UXO may save up to 36,350 lives and limbs from potential deaths or injuries. As a result, it could be confirmed the project can save 43,833 people lives and released 5,339,059m² confirmed as safe land for vulnerable people who are threatened by landmines and UXO.

4. CMAC-JAPAN KUSANONE PROJECT IN DEMINING UNIT 4: The Project for Supporting Humanitarian Demining Activities in the provinces of Kompong Thom, Oddar Meanchey and Preah Vihear

4.1. Project Background

This project was signed on 11 January 2007 between H.E. Khem Sophoan, CMAC Director General, and H.E. Takahashi Fumiaki, the Ambassador of Japan in the Kingdom of Cambodia. The intended purpose of this project is to support humanitarian demining activities in the provinces of Kompong Thom, Oddar Meanchey and Preah Vihear during the period of one year from January 2007 with the total costs of USD 898,892. The following resources were mobilized under the project.

- 01 Office supported Staff proposed 21 persons, but the actual 20 only.
- 04 Mobile Platoons "MP" consists of 120 persons.
- 01 Community Base Demining "CBD" Consists of 33 persons.
- 03 Mechanical Clearance "Brush Cutter machines" consists of 27 persons (3armed guards).
- 02 Explosive Ordnance Disposal teams "EOD" consists of 6 Persons.
- 01 Short Leash of Mine Detection Dog team "MDD" consists of 9 persons.
- 01 Community Mine Clearance "CMC" consists of 9 persons.
- 01 Mine Risk Education Reduction team "MRER" Consists of 4 persons.
- 02 Technical Survey & Clearance team "TSC" consists of 10 persons.

Total personnel is 238 persons

The goal of this project is to bring about personal security to the people and communities living in mines/UXO - affected area, and to reduce the number of mines/UXO casualty towards zero victim in Kompong Thom, Oddar Meanchey and Preah Vihear Provinces.

The objectives of the project are:

- To gradually move towards zero mine/UXO accidents in the target areas through mine/UXO clearance, risk education and reduction
- To focus on archeological sites and ancient temple areas for clearance to enable road construction, safe passage and open the sites for tourism, which will eventually generate income and economic opportunities for the people in the areas
- To provide the target communities with safe access to resources to facilitate their socio-economic and infrastructure development. In this context, local communities will set the priorities in line with their local development requirements
- To support national and international development efforts to carry out development activities in the target areas in collaboration with CMAC
- To ensure sound financial, logistics, human resources and operational management in order to maintain effectiveness and efficiency as well as donor confidence at all times

4.2. Project Activities and Achievements

The project resources of Demining Unit 4 were mainly deployed in high affected districts such as Choam Ksant, Chey Saen, Chhaeb, Kuleaen, Rovieng, Tbeng Meanchey, Sangkum Thmey districts of Preah Vihear province, and Prasat Balangk, Prasat Sambour, Kampong Svay, Santuk, Steung Saen districts of Kampong Thom province and Trapeang Prasat district of Oddar Mean Chey province.

In the reporting period, cleared land of 3,540,584m² was achieved, +31.72% higher than the set target of 2,688,000m², 62,840 linear meters was marked, and 1,826 anti-personnel mines, 13 anti-tank mines and 6,891 UXO and 127kg of small calibers were found and destroyed. The table below is the detailed productivities made by the various demining tool boxes of CMAC DU4 implemented in the reporting period.

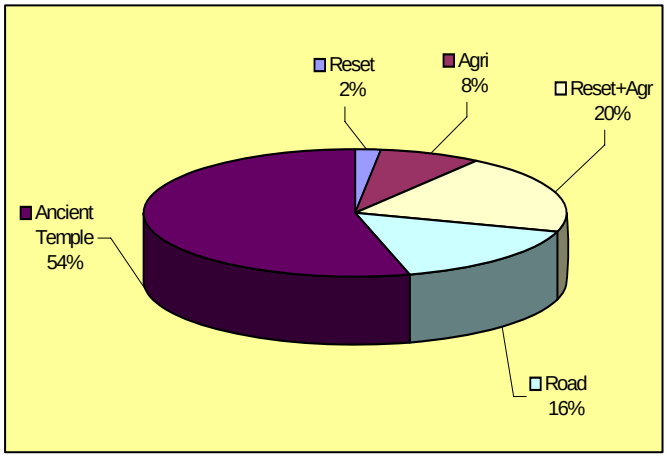
Resources	Achievement									
	Area cleared (m²)	Cutting (m²)	Excavation (m³)	Linear meters marked	AP/ Imp. Mine	AT Mine	UXO found	Small calibers (kg)	N. of Tasks responded	Fragments
4 MP	1,815,674	-	-	-	884	1	242	1	-	2,835,531
1 CBD	192,142	-	-	-	26	-	88	-	-	407,597
2small TST	133,512	-	-	59,918	12	-	10	-	-	11,610
3 BC	934,672	1,120,579	1,294	-	299	6	253	4	-	146,514
1 CMC	87,854	-	-	2,922	9	-	48	-	-	44,363
1 SLD	355,158	-	-	-	5	-	45	-	-	1,942
2 EOD	19,211	-	-	-	581	6	5,678	122	465	2,306
1 MRE	2,361	-	-	-	10	-	527	-	86	1,349
Total	**3,540,584**	**1,120,579**	**1,294**	**62,840**	**1,826**	**13**	**6,891**	**127**	**551**	**3,451,212**

In addition to clearance and marking, the project also carried out risk education activities made by MRE team by 4,616 household visit, 124 courses of presentation, 129 villages had been reached for mine awareness presentation with the total 7,405 audiences (men: 2,077, women: 2,427 and children: 2,901). In the reporting period, some MRE materials had been used for its activities as follows:

- Large T-Shirt: 350
- Small T-Shirt: 156
- Note Book: 1,082
- Poster: 2,995
- Leaflet: 1,205
- Story book: 4

4.3. Socio-Economic Impact and Analysis

29 minefields were completed and handed over to the local communities of 2,841 families and 184 students for the purposes of resettlement, agriculture, road construction, school, canal, pagoda, health centre, sport site, temple and tourist places. The chart below states a post-clearance and socio-economic analysis of the project.



The productivity of clearance shows a positive trend, 3,540,584m² with a surplus of 31.72%, compared to the target of 2,688,000m². Productivity of the project during 12 months, in general, represents 13.9 % of the CMAC Work Plan 2006.

In humanitarian and socio-economic terms, the demolition of 1,826 anti-personnel mines and 6,891 UXO could be interpreted as saving an approximate 36,281 lives and limbs by preventing these mines and UXO from causing the accidents, and at lest 13 cases of AT accidents have been prevented from the explosion which may lead to serious damages of the local communities. In short, the grant of USD 898,892 during 12-month period could have saved 36,281 people's lives and release 3,540,584m² of land for 2,841 families and 184 students, who were under the threat of landmines and UXO.

5. CMAC – GERMANY PROJECT AT DEMINING UNIT 6: Humanitarian Demining in Sieam Reap and Oddar Meanchey Provinces

5.1. Project Background

This project is another phase of the continued support by the Government of Germany to CMAC DU6 to support humanitarian demining in Siem Reap and Oddar Meanchey. The overview of this project is to reduce the number of victims caused by mines and UXO, restore and improve access to archeological sites and ancient

temples to promote tourism, and enable community developments in the affected communities in the said provinces.

This continued support project was signed on the 5th January 2007 between **H.E. Mr. Pius Fischer,** the Ambassador of the Federal Republic of Germany in the Kingdom of Cambodia, and **H. E. Sok An**- Deputy Prime Minister, the Minister in charge of the Council of Ministers, at the office of the Council of Ministers, with total amount of **USD 1,055,172** to support demining operation carried out by CMAC Demining Unit 6 Siem Reap for the period from January to December 2007 with the following resources:

- Project Manager : 01 person
- Demining Unit 6 Headquarters : 19 persons
- EOD Supervisor : 1 persons
- 6 Normal & Mobile Platoons (NP) : 178 persons
- 2 EOD teams : 6 persons
- 2 Technical Survey Small Teams (TST) : 10 persons
- 1 Community Mine Clearance Team (CMC) : 10 persons (CMC#13A & 13B)
- 2 Brush Cutters : 4 persons
- Special Service Agreement Staff (SSA) : 19 persons

Total personnel funded by the Federal Republic of Germany: 248 staff

5.2. Project Activities and Achievements

During the operational period from January to December 2007, the project resources of Demining Unit 6 funded by the Federal Republic of Germany were deployed in Siem Reap, Prasat Bakong, Pouk, Srei Snam, Angkor Thom, Banteay Srey, Sotr Nikum, Svay Leu, of Siem Reap province and Chongkal, Banteay Ampil, Samraong, Trapeang Prasat and Anlong Veng of Oddar Meanchey province.

In the 12 month period, 2,831,565m² were cleared and handed over to local communities. 3,141 anti-personnel and improvised mines, 37 anti-tank mines and

7,911 UXO were found and destroyed. Furthermore, 30,625 linear meters have been marked for risk reduction and 1,024,455m² of cutting and 677m³ of excavation the beam of soil.

Resources	Achievement									
	Area cleared (m²)	Cutting (m²)	Excavation (m³)	Linear meters marked	AP/ Imp. Mine	AT Mine	UXO found	Small calibers (kg)	N. of Tasks responded	Fragments
6 MP	2,372,000	-	-	-	833	7	918	-	-	1,245,553
2 small TST	214,799	-	-	23,116	12	-	90	-	-	14,642
2 BC	-	1,024,455	677	-	-	-	-	-	-	-
1 CMC	216,536	-	-	7,509	20	2	144	-	-	25,661
2 EOD	28,232	-	-	-	2,276	28	6,759	178	679	-
Total	**2,831,567**	**1,024,455**	**677**	**30,625**	**3,141**	**37**	**7,911**	**178**	**679**	**1,385,856**

5.3. Socio-Economic Impact and Analysis

In the 12 month period, 55 minefields in both provinces were cleared and handed over to the local authorities and communities of 3,412 families and 10,232 students in both provinces for the purposes of resettlement, agriculture, roads & schools construction, ponds, temples and other places for tourism. The proportion of the cleared land was used as follows:

- Agriculture, 22.72 % (53,45ha)
- Resettlement 2.92 % (6,88ha)
- Resettlement & Agriculture 12.22 % (28,75ha)
- Roads/canal 25.93 % (61ha),
- School 1.16 % (2.74ha)
- Pond 1.75 % (4.3ha)
- Temple 25.83% (68.78ha)
- Others 7.32% (17.23ha)

The comparison between the actual productivities against the target plan indicates that 25.51% of the productivities are over the target set in IWP 2007. This is a positive trend with a surplus of 575,565m² or +25.51%, compared to the target of 2,256,000m². In addition, it should be highlighted that mine incident in Siem Reap was dropped down 50% in year 2007 (16 cases of incidents) less than in year 2006 (32 cases of incidents), and in Oddar Meanchey was dropped down 55.07% in 2007 (31 cases of incidents) less than year 2006 (69 cases of incidents) during the reporting period. This could be assumed that it is a very effective and successful project.

In humanitarian demining and socio-economic technical terms, the demolition of 3,141 anti-personnel mines could be saved at least 3,141 lives and limbs, and 7,911 UXO could be saved at least 39555 lives. It could be described that the grant of USD 1,055,172 durin 12-month period could save up to 42,696 people's lives and 2,831,565m² of land cleared were confirmed as safe for 3,412 families and 10,232 students, who were under the threat of landmines and UXO.

Case Study

There were two different cases of anti tank mines explosion happened in different points on the same road (main raod#67) from Siem Reap province to Anlong Veng district, Oddar Meanchey province. The cases were occurred as follows.

1). On 9th December 2007 at 2:00pm, the excavator of a private company hit anti tank mine on the main raod#67 between Sre Nouy commune, Varin district of Siem Reap province to Anlong Veng district, Oddar Meanchey province. The chain of excavator was cut off, and the body of excavator was seriously damaged on the constructing road, whereas the operator was slightly injured.

2). On 18th December 2007 at 2:30pm, a water truck of the same private company hit another anti tank mine on the same road while working/sprinkling water on the road, damaging a water truck and killing a truck driver, and another one got a serious injury and was evacuated to the emergency hospital in Thailand. These two cases happened approximately 10km from the public area of Sre Nouy commune, located in Dai Ao village, Sre Nouy commune, Varin district, Siem Reap province.

In fact, this main road has been safely used for a long period since 1998 after the Khmer Rouge's integration into the Government of Cambodia. Based on information received from local people, this road was laid of these anti tank mines by Khmer Rouge since the civil war in Cambodia from 1979-1998. Most of anti tank mines were laid deeply under the ground by packing in the plastic bags or tarpaulin for long term prevention and put on top of a wooden stick in order to attack heavy vehicles and tanks, especially to prevent their military's bases in Anlong Veng zone.

6. CMAC – JMAS PROJECT TO SUPPORT UXO CLEARANCE AND CBURR

6.1. Project Background

This project was supported by the Government of Japan through the Japanese Mine Action Service (JMAS) with an amount of **USD 191,771.07**, which **USD 143,507.07** to support 7 EOD teams in the provinces of Svay Rieng, Kandal, Kampong Speu and Kampong Cham, and **USD 48,264** to support 16 District Focal Points of Community Based UXO Risk Reduction (CBURR) in the provinces of Prey Veng, Svay Rieng,

Kandal and Kampong Speu for the period of one year from 7th August 2006 to 6th August 2007. This project was then renewed from 14 September 2007 to 13 September 2008 with an amount of USD 254,319.46, which USD 193,418.26 to support up to 7 EOD teams in the provinces of Svay Rieng, Kandal, Kampong Speu and Kampong Cham, and USD 60,901.20 to support 16 District Focal Points of CBURR in the provinces of Svay Rieng, Kandal, Kampong Speu and Kampong Cham.

The goal of this project is to bring about personal security to the communities living in UXO affected areas and to reduce the number of casualties caused by UXO, particularly in the provinces of Kandal, Kampong Speu, Prey Veng, Svay Rieng and Kampong Cham.

The project's objectives are:

- To reduce risks through the collection and destruction of the UXO to provide the target communities with safe access to resources to facilitate their socio-economic development.
- To enable development activities to be carried out in the target areas in collaboration with national and international development agencies.

The resources of the project are separated into two parts of the deployments in different project's timeframes as follows:

7th August 2006 to 6th August 2007

- 3 EOD Supervisors (3 Persons)
- 7 EOD Team (21 Persons)
- 16 CBURR District Networks (16 Persons)
  Total = 40 persons

14th September 2007 – 13th September 2008

- 3 EOD Supervisors (3 Persons)
- 7 EOD Team (21 Persons)
- 16 CBURR District Networks (16 Persons)
  Total = 40 persons

6.2. Project Activities and Achievements

The project resources were mainly deployed in 42 different districts in whole four different provinces: 7 districts in Svay Rieng, 8 districts in Kampong Speu, 11 districts in Kandal and 16 districts in Kampong Cham province, but 12 districts in Prey Veng Province were phased out from the project. However, this could be confirmed that the CBURR target districts covered only 16 districts in the four different provinces as said provinces: 4 districts in Kampong Speu (Odong, Chbarmon, Phmom Srouch, Samraong Tong), 4 districts in Kampong Cham (Cheung Prey, Chamkar Leu, Kampong Siem, Prey Chhor), 4 districts in Svay Rieng (Svay Chrum, Kampong Ro, Svay Teap, Romdoul), and other 4 districts in Kandal Province (Angsnuol, Kandal Steung, Ksach Kandal, Laver Em).

Note: Due to the late of approval on the project budget for next phase (on going project, 2007-2008) from JMAS, especially from the Embassy of Japan in Cambodia, 7 EOD teams and 12 CBURR-DFPwere laid off for over one month period from 4th August to 13th September 2007, waiting for next project's phase to be approved. However, during the lay off period, these teams were sent to attend a refresher training at the CMAC Training Centre for improving their capacity on the new methodologies of the use of mine detectors, GPS, reporting process, EOD techniques for EOD teams as well as the community liaison for CBURR-DFP, except the 3 CBD platoons were normally working during that period.

As early mentioned in the project resources and timeframes, the figures of the progress below are captured for the 12-month period starting from 1st January to 31st December 2007 in the global achievements under the financial support from JMAS to 7 EOD teams as follows:

- Area cleared = 23,913 m²
- Anti-personnel mines (AP) found = 932
- Anti-tank mines (AT) found = 46
- UXO found = 30,675
- Number of tasks responded = 2,966 tasks
- SAA = 342 Kg
- Unearth fragments = 141

It should be noted that in the 4-month period of the reporting year from September to December 2007, 7 EOD Teams worked in 38 to 54 districts in 4 different provinces of Kampomg Speu, Svay Rieng, Kandal and Kampong Cham with the following achievements:

- Area cleared = 11,419m²
- Anti-personnel mines (AP) found = 536
- Anti-tank mines (AT) found = 13
- UXO found = 8,262
- Number of tasks responded = 1,005 tasks
- SAA = 84 Kg
- Unearth fragments = 141

Moreover, the 4-month period (4 months and half) of the last reporting year from August to December 2006, 6 EOD teams worked in 38 districts in five different provinces of Kampomg Speu, Prey Veng, Svay Rieng, Kandal and Kampong Cham. The achievement was identified below.

- Area cleared = 10,085m²
- Anti-personnel mines (AP) found = 346
- Anti-tank mines (AT) found = 30
- UXO found = 14,621
- Number of tasks responded = 1,281 tasks
- SAA = 525 Kg

In addition to UXO clearance and collection, the project also carried out risk reduction education activities made by 16 CBURR-DFP and CBURR networks in the five provinces (included the province of Prey Veng before phasing out) from January 2007 to December 2007 with the following achievements.

Overall Achievement of CBURR (JMAS Project) From January – December 2007													
Target Province	Target District	Visited			Number of Participants				Request Sent by DFP & MUC and Intervened by EOD & MRE				
		Village Visited	House Visited	Course	Men	Women	Children	Total	Requests	AP	AT	UXO	Total
Kampong Speu	Odong	268	1,114	197	1,843	1,585	1,288	4,716	234	113	-	1,928	2,041
	Chbar Mon	295	1,044	221	1,025	904	2,189	4,118	204	9	-	2,485	2,494
	Phnom Srouch	386	486	325	1,325	656	1,349	3,330	153	24	-	1,761	1,785
	Samrong Tong	389	751	214	923	535	1,537	2,995	326	10	-	1,836	1,846
Kandal	Ang Snuol	337	1,659	346	2,329	2,774	4,463	9,566	291	1	-	2,227	2,228
	Kandal Steung	156	1,049	215	1,754	1,064	2,195	5,013	223	1	-	1,291	1,292
	Ksach Kandal	186	1,897	254	2,510	1,839	1,738	6,087	73		-	554	554
	Lvea-Em	185	994	187	2,106	1,208	3,245	6,559	24		-	239	239
Prey Veng	Kg Leav	105	700	217	389	539	1,166	2,094	79	3	-	1,502	1,505
	Ba Phnom	130	527	186	787	745	1,092	2,624	38		-	516	516
	Kg.Trabek	116	981	299	1,201	1,064	1,289	3,554	50		-	353	353
	Preah Sdach	138	528	253	1,063	1,184	2,164	4,411	39	3	-	483	486
Svay Rieng	Svay Chrum	270	752	272	1,910	1,887	2,451	6,248	176	19	-	1,581	1,600
	Kg. Ro	291	766	277	973	1,045	1,619	3,637	143	84	-	1,297	1,381
	Svay Teap	320	2,567	538	1,319	1,108	2,603	5,030	179	111	-	1,541	1,652
	Rom Doul	396	1,930	515	2,374	1,565	1,954	5,893	143	72	-	1,076	1,148
Kampong Cham	Cheung Prey	47	720	50	741	612	722	2,075	27		-	154	154
	Chamkar Leu	73	899	74	1,721	861	780	3,362	14		-	107	107
	Kg. Siem	16	294	36	374	247	126	747	18	6	-	94	100
	Prey Chhor	133	2,915	61	1,422	1,619	507	3,548	26	2	-	147	149
Total		**4,237**	**22,573**	**4737**	**28,089**	**23,041**	**34,477**	**85,607**	**2,460**	**458**	**-**	**21,172**	**21,630**

6.3. Socio-Economic Impact and Analysis

In the 12- month- period (January to December 2007), 2,966 requests (tasking) and hundreds of UXO spot occupied in 23,913m² in the target provinces were found and removed at least 31,653 items of mines/UXO from the contaminated land of the affected communities. The surface of 23,913m² were confirmed as safe land and handed over to the communities and local authorities in the purposes for productive land and /or others…etc. This could be concluded that at least 154,307 of people's lives could be saved from UXO accidents, and as well as the removal of 46 anti-tank mines from the ground would be able to rescue at least 46 vehicles or ox carts from the damages caused by these anti-tank mines.

And adjacently, it could be assumed that the achievement from September to December 2007 (on going project for 7 EOD) was significantly positive. At least 11,419m² were released for a safe land and 41,846 people's lives were saved from UXO accidents.

7. CMAC- JMAS: PROJECT TO SUPPORT COMMUNITY-BASED DEMINING IN BATTAMBANG

7.1. Project Background

This project is joint cooperation between CMAC and JMAS with the support from the Government of Japan, starting from 1st June 2006 to 31st May 2007 with total cost of USD 216,466.38 to cover 3 platoons of Community Based Demining, working in the highly contaminated areas in Tasen commune, Kamrieng district, Battambang province along Cambodia-Thailand borders. Subsequently, the project has

been renewed and approved from 26th June 2007 to 25th June 2008 with a mount of USD 287,406.80 for the same resources.

The project objectives of the project is to increase the participation of affected communities in addressing mine and UXO problem, reducing risks within their own communities and their vicinity and to empower the communities to deal with mine and UXO problem in the long run.

7.2. Project Activities and Achievements

The resources of the project were mainly deployed in 6 target villages such as Ou Anluk, Ou Chamlang, Dei Kraham, Ou Tracheakchit, Ou Samaki and O'Teuk Thla in Tasen commune, Kamrieng district, Battambang province. The achievements of the project can be classified in two project time frames below.

June 2006 to May 2007

- 3 CBD platoons (33 personnel per platoon, total 99 personnel)

o	Area cleared	=	300,131 m²
o	Anti-personnel mines (AP) found	=	347
o	Anti-tank mines (AT) found	=	10
o	UXO found	=	60
o	Unearth fragments	=	742,063

June 2007 to December 2007

- 3 CBD platoons (33 personnel per platoon, total 99 personnel)

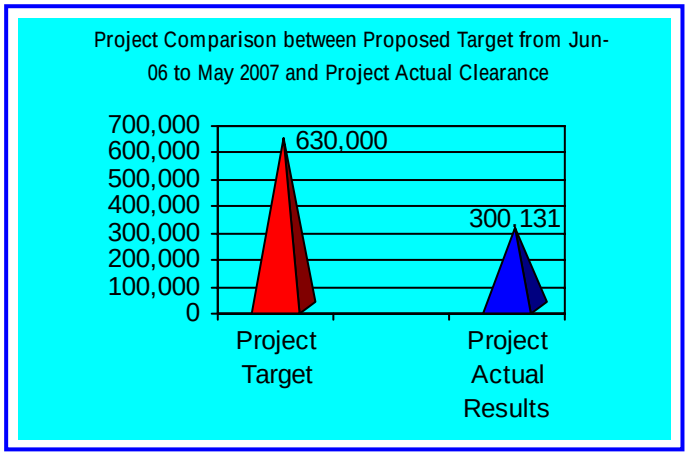
o	Area cleared	=	317,721 m²
o	Anti-personnel mines (AP) found	=	152
o	Anti-tank mines (AT) found	=	Nil
o	UXO found	=	186
o	Unearth fragments	=	901,878

7.3. Socio-Economic Impact and Analysis

In the project 12-month period from 1st June 2006 to 31st May 2007, 12 minefields or 331,294m² were cleared and handed over to the communities of 194 families for the purposes of agriculture, resettlement and roads construction in their own communities.

The seven-month-productivity of clearance in this report represented 98.58% against the set target of 322,300m² one year project period in 2007.

It should be assumed that the demolition of 347 anti-personnel mines could be saved at least 347 lives and limbs, and 60 UXO could be saved at least 300 people's lives during the project implementation. In total, 647 lives were saved from the accident. In addition, some of communities' properties can be avoided from the damages due to the AT mine explosion.



It should be noted that the suspension of 3 CBD platoons for 2 months period from February to March 2007 caused by the anti-tank mine (TM46) incident happened on 19th January 2007 at 08:30am in the minefield (M-5708B) in O Chamlang village, Tasen commune, Kamrieng district, Battambang province, could be a cause of lower productivities. This accident was instantly claiming seven lives of the community-based deminers in place, which was the first tragic accident that never happened for CMAC since the last 13 years of its operations on the ground.

8. CMAC-DU1-AUSTCARE PROJECT: INTEGRATED MINE ACTION AND DEVELOPMENT PROJECT IN BANTEAY MEANCHEY PROVINCE

8.1. Project Background

This is a joint cooperation project from March 2006 to June 2008 between CMAC and AUSTCARE designed to provide mine action and development support in the affected village in Lbeuk Svay, Chamkar Kor and Damnak Kokoh of Svay Chek commune, Svay Chek district, Banteay Meanchy Province. The total cost of this project is AUD 586,472.94 supported by the Government of Australia through AusAID and AUSTCARE.

8.2. Project Activities and Achievements

The year 2007 is the on-going project which will continue to target mine action deployment in the affected village in Lbeuk Svay, Chamkar Kor and Damnak Kokoh of Svay Chek commune, Svay Chek district, as well as in Tmar Pouk ditstrict of Banteay Meanchy Province.

The resources of the project were deployed upon the requirement of AUSTCARE's development program in collaboration with local authorities by integrating demining and development program in the target areas. The Project Resources funded by AUSTCARE are outlined below.

- 1 Demining Platoon - 30 personnel
- 1 Technical Survey small team - 5 personnel
- **1 Community Mine Clearance - 9 personnel
- 1 Community-Based Demining - 32 personnel including 14 female deminers

Total: **76 personnel**

Note: **1 Community Mine Clearance (CMC) consists of 9 personnel with its implementation for the project from March 2006 till September 2007, and then this CMC was reformed from 9 staff to 7 staff per team. The total personnel thus were decreased from 76 to 74 field staff.

This project progress is captured from January to December 2007 made by the project resources during the period as in the table below:

Resources	Progress Achievement						
	Area cleared (m^2)	Linear meters marked	AP & Improvised mine	AT Mine	UXO found	Small Caliber (kg)	Fragments
1 MP	292,977	-	222	-	32	-	286,447
1 Small TST	52,800	40,508	25	-	15	-	22,878
1 CMC	154,365	5,117	153	-	55	-	79,614
1 CBD	309,352	-	95	-	21	-	76,077
Total	**809,494**	**45,625**	**495**	**-**	**123**		**465,016**

Note: It sould be noted that during the reporting period, 1 BC was deployed to support the development project in Svay Chek district, Bantheay Meanchey province such as Vor preng village and 8 another villages in AustCare target areas to dig at least 40 family's and communal ponds, with its result of 73,450m^3 of excavation of the pond digging and 10,000m^2 of cutting the vegetation.

8.3. Socio-Economic Impact and Analysis

During the12 month period from January to December 2007, 5 minefields or 809,494m^2 were cleared and handed over to local communities of 58 families for the purpose of agriculture in their own community.

The productivity of clearance in 12–month- period represented 145.07% against the target clearance of 558,000m^2 in the one year period 2007. This is shown that 45.07% is over the set target in year 2007. In addition, the demolition of 495 anti-personnel mines could be saved at least 495 lives and limbs, and 123 UXO could be saved at least 615 lives, in total, 1,110 lives were saved from the mine/UXO incidents.

9. CMAC-PEACE BOAT PROJECT AT DEMINING UNIT 4 – Preah Vihear Province

9.1. Project Background

Peace Boat has started collaborated with CMAC on demining and development work since 2001 in Pursat. The support given by Peace Boat to CMAC has been in the form of financial assistance toward the operations of mine clearance with subsequent financial donation for public facility building such as primary school building for children living the mine infected areas, clearance of areas surrounding school compound and health center to provide safety to pupils and population attending to these public facilities. All these projects have been bilaterally funded by Peace Boat and implemented by CMAC Demining Unit 5 based in Pursat.

The fist of its activities was the funding for clearance and a construction of a primary school building in Pteah Rung village of Kravanch district in Pursat in 2001. Peace Boat also helped donated some of school materials to teachers and poor students at the newly-built premise.

The second involvement of Peace Boat with CMAC was its support for the mine clearance and building of surrounding fence and gate for a primary school in Stung Thmey village of Veal Veng district in 2002.

The third project involved the clearance of area surrounding a health center and an enforcement of proper fence surrounding the center of Chamkar Chrey Khan Cheung village, Anlong Reab commune, Veal Veng district, Pursat province in 2003.

The fourth project is subjected to mine/UXO clearance and school construction in Koh Ker Village, Srayong Commune, Kulen Disrict, Preah Vihear Province.

The fifth and sixth projects which focuses on mine and UXO clearance and school & Road construction in Osampor II Village, Osampor Commune, Malay District, Banteay Meanchey Province, and is the large project costing USD118,214.63.

The seventh project focusing on mine and UXO clearance to open access road from Koh Ker Village to Kompich Village, Srayong Commune, Kulen District, Preah Vihear Province, which costs USD 34,981.45 during the period from August to December 2006.

The eighth project focused on mine and UXO clearance in Koh Ker Village, Srayong Commune, Kulen District, Preah Vihear Province, which costs USD32,580.07 to support mine and UXO clearance for ancient temple "Prasadh Sroth and Prasadh Leung" and connection rood access to "Prasadh Leung" during the period from April to June 2007.

For this report which costs USD29,705, it was the ninth project focusing on mine and explosive remnants of war clearance in the archeological site of Koh Ker Temples (Prasat Pram Pcheam, Prasat Rovai) with a total of 99,531 square meters of area to be cleared during the period from September to November 2007. As a result, the total financial contribution of Peace boat to CMAC from 2001 up this project term is approximately USD 296,266. In 2007, Peace Boat also contributed USD 1,950 to construct pump well at Koh Ker School.

9.2. Project Activities and Achievements

In 2007, there were two projects which have been supported by PEACE BOAT focusing on mine and UXO clearance around ancient temples "Prasadh Sroth and Prasadh Leung" and connection rood access to "Prasadh Leung" during the period from April to June 2007, and the second project focusing mine and UXO clearance around ancient temples " Prasat Pram Pcheam, Prasat Rovai. " The two projects are located in the archeological site of Koh Ker, Srayong Commune, Kulen District, Preah Vihear Province.

The two projects covered the resources of one mobile platoon (30personnel) and one Community Mine Clearance (7personnel). These resources were deployed in the archeological site of Koh Ker temples Preah Vihear Province.

During the reporting period, the project resources made a satisfactory outcome of 345,419m² in term of clearance, and destroyed 27 anti personnel mines and 66 UXO. This outcome benefited to 150 families of vulnerable people as the indirect beneficiaries, who are threatened by landmines and UXO in the archeological site of Koh Ker temples.

Resources	Progress Achievement						
	Area cleared (m²)	Linear meters marked	AP & Improvised mine	AT Mine	UXO found	Small Caliber (kg)	Fragments
1 MP	291,605	-	22	-	47	-	171,018
1 CMC	53,814	1,704	5	-	19	-	27,847
Total	**345,419**	**1,704**	**27**	**-**	**66**	**-**	**198,865**

10. CMAC – UNICEF: MINE RISK EDUCATION AND REDUCTION (MRE), CBMRR AND MASS MEDIA CAMPAIGN PROJECTS

10.1. Project Background

This was another phase of on-going support from UNICEF to CMAC for mine/UXO Risk Awareness and reduction activities aiming at delivering risk education messages and carrying out risk reduction activities in high casualty rate areas. This support was in collaboration with other partners such NPA (funded by the Government of Netherlands), UNDP and US State Department. This projects has been designed to support CBMRR, Mine/UXO Risk Education and Reduction (MRE) teams and mass media campaign through TV, radio, billboards and other mine/UXO risk education materials.

In 2007, UNICEF agreed to provide financial support of USD 117,700 to cover the costs of mine awareness materials such as all non-expendable equipment, capacity building, printed materials, incentives for CMBRR networks and MRE teams in Pursat, Battambang, Banteay Meahey, Pailin, Kampong Cham, Oddar Meanchey and Ratanakiri provinces and DSA for staff based at CMAC Headquarters. The project's period was from January – December 2007.

10.2. Project Activities and Achievements

10.2.1. Mine Risk Education Team (MRE):

The achievement made by the project resources from January to December 2007:

Clearance	: 21,380m²
Anti personnel mines found and Destroyed	: 263
Anti tank mines found and Destroyed	: 10
UXO found and destroyed	: 2,987
Small calibers found and destroyed	: 25 Kg
Number of Tasks responded	: 397 tasks
Unearth fragments	: 1,929

The achievement of mine risk education activities made by MRE teams from January to December 2007:

Number of Household visit	: 7,477
Number of Courses	: 240
Number of Audience reached	: 41,900
(Men: 8,287, women: 9,589, children:24,024)	

10.2.2. Community Based Mine Risk Education Team (CBMRR):

Besides MRE team activities, 12 CBMR District Focal Points remarkably achieved its mine risk education and reduction activities during the reporting period from January to December 2007:

Number of Household visit	: 26,993
Number of Audience reached (Men: 29,611, women: 31,381, children: 31,560)	: 92,552
Number of Tasks Reported	: 569, with
AP mine: 792, AT mine: 50 and UXO : 4,118	

10.2.3. Mine Risk Education Materials:

The below table is the MRE material had been used for their mine risk education and presentation during the reporting period.

Team	MRE Materials had been used for MRE Activities									
	Large T-Shirt	Small T-Shirt	Note Book	Poster	Flyer	Leaflet	Story book	MRE VCD	Video Tape	Audio Tape
MRE	818	651	4,455	6,083	100	4,265	14	8	-	2
CBMRR	1,463	758	5,294	18,246	-	19,295	-	8	-	-
TOTAL	2,281	1,409	9,749	24,329	100	23,560	14	16		2

***__Note:__ It could also be noted that these above achievements have been included in the UNDP "Clearing for Results" as early stated in the output of UNDP in this report.*

12. CMAC– JAPAN ASEAN INTEGRATED FUND: EXPLOSIVE REMNANTS OF WAR CLEARANCE OPERATIONS IN EASTERN PROVINCES OF CAMBODIA

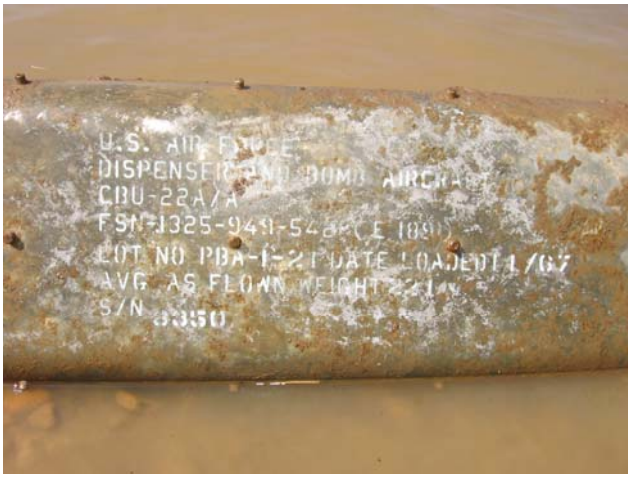
12.1. Project Background

The Government of Japan supported CMAC through UNDP Trust Fund from 1999 to 2005. Upon the change in mine action environment, the Government of Japan has moved its financial support mechanism from UNDP Trust Fund mechanism to ASEAN mechanism named Japan ASEAN Integration Fund (JAIF), which is the new funding mechanism mainly maiming to support CMAC activities, and other ASEAN countries which have mine/UXO problem like Laos, Thailand and Viet Nam.

The Project to support Explosive Remnants of War Clearance Operations in Eastern Provinces of Cambodia is the first project of its kind distribution in Cambodia funded in total amount of USD 376,910.07 to CMAC to utilize for CMAC's current ERW clearance capacity such as the EOD and CMC teams as well as the CBURR's are the key informants in collecting information and risk education capacity for project's timeframes from February 2007 to January 2008.

12.2. Project Goal and Objectives

The goal of this project is to bring about personal security to children, families, and communities living in UXO (Unexploded Ordnance) affected areas in the eastern provinces of Kampong Cham, Kracheh, Stueng Traeng, Rotanak Kiri and Mondol Kiri, and to expand CMAC's ERI (Explosive Remnants of War Intervention Team) and ERC (Explosive Remnants of War Clearance Team) capacity in the eastern part of Cambodia in order to respond human security and safety need to communities living in UXO affected in the target provinces. The objectives of the project are:



- To provide the target communities with a safer environment and livelihood by collecting and destroying at least 21,000 UXO a year and timely responding to

UXO clearance needs and benefits directly to 1,068,375 people and indirectly to 1,279,813 people.

- To improve the awareness and participation by the affected communities in the joint effort of risk reduction by establishing the CBURR network in the most highly affected districts in the target provinces.

- To support national and international development efforts to carry out development activities in the target areas.

- To improve and upgrade the specialized EOD skills in order to respond to all types of UXO found in Cambodia.

- To ensure sound financial, logistics, human resources and operational management in order to maintain effectiveness and efficiency as well as donor confidence at all times.

12.3. Project Resources and Deployment

In accordance with the signed agreement, the below project's resources are deployed in the provinces of Kampong Cham, Prey Veng, Svay Rieng, Kratie, Steung Treng and Rattanakiri. The resources are as follows:

- 1 Office Staff (9 persons)
- EOD Supervisor (1 person)
- 5 ERI (EOD) Team (15 Persons)
- 4 ERC (CMC) Teams (28 persons)
- 10 CBURR District Networks (10 Persons)

Total = 63 persons

12.4. Project Activities and Achievements

The below table is captured on the project achievement made by the project resources from February to December 2007 as follows:

Resources	Progress Achievement							
	Area cleared (m²)	Linear meters marked	AP & Improvised mine	AT Mine	UXO found	Small Caliber (kg)	Tasks Responded	Fragments
4 ERC/CMC	676,077	46,597	20	2	1,042	5	-	142,782
5 ERI/EOD	67,750	-	978	36	16,840	82	1,453	266
Total	**743,827**	**46,597**	**998**	**38**	**17,882**	**87**	**1,453**	**143,048**

12.5. Socio-Economic Impact and Analysis

During 11-month period from February to December 2007, the project resources benefits 73 direct families and 1,951 indirect families and 8,064 students of vulnerable people and students who are threatened by landmines and UXO could benefit from this ERW clearance activities in 35 UXO fields in 24 villages of Kampong Cham, Prey Veng, Svay Rieng and Kratie provinces in purposes of agriculture, roads construction, pondsl, school, pagoda and other official uses as requested.

In addition, the destruction of 998 anti personnel mines could be saved at least 998 lives and limbs and 16,840 UXO could be saved up to 84,200 people lives. This is not concluded with the community's properties that have been taken in place on time without any threatening by AT mine explosion.

13. CMAC – KYOTO RAKUSAI ROTARY CLUB-JAPAN

After finishing the Mine Risk Reduction Activities Project, which was jointly implemented by CMAC and Rotary International District-2650, JAPAN for period from March –August 2004 with the budget of USD 25,000, Rotary International, District 2650, Japan has decided to support 2 Community Mine Marking Teams in Demining Unit 1 Banteay Meanchey with amount of USD 26,000 during the period from 1st March to 31st December 2005.

In 2007, ***" Post Clearance Development Project: Building 4-room-Primary School on Land Cleared by CMAC "*** supported by Rotary International- District 2650 in amount of USD 44,500 was a project to build 4-room- primary school on the land which has been cleared CMAC in Khkeang Village, Khleang Commune, Bovel District, Battambang Province. The aim of this project is to support human resources development and poverty reduction in the area cleared by CMAC by ensuring that all children particular girls and disabled children have access to the basic education.

CONTRACTUAL SERVICES

According to the article 29 of the Royal Decree, No. NS/RKT/0810/264, dated 07 August 2001, on the establishment of the Cambodian Mine Action Centre (CMAC), CMAC is able to engage contractual services with other business or private sector to sustain its operations activities. In 2007, CMAC engaged a small scale of contractual services with some private companies in term of providing mine and UXO clearance activities.

CONTRACTUAL SERVICE UNIT:		
PROJECT TITLE	**DONOR / PARTNER**	**PROJECT LOCATIONS**
Mineral Exploration in Mondul Kiri	BHP Billiton	Mondul Kiri
Mineral Exploration in Ratanak Kiri and Banteay Meanchey	LMI	Ratanakiri and Banteay Mreanchey province
Path finding, surveying and surface clearance	HOLCIM Telecom.	Kampot, Kampong Speu, Kampong Cham and Kratie province
Mine and UXO Clearance in Samlot	Cambodia Mining Development Co. Ltd. (Action Group)	Battambang Province
Path finding, surveying and surface clearance on national road#1, 3, 4, 5, 6A & 7	CADCOMMS	Kampong Cham Province, Suong
One Mine Detection Dog (MDD) Contract	MAG	Battambang and MAG targeted zone
Mine Detection Dog (MDD) Contract	MAG	Samlot, Ratanak Mondul, (Battambang) and Pailin
One Mine Detection Dog (MDD) Contract	MAG	Preah Vihear and MAG targeted zone

1. Contractual Services with BHP Billiton Company:

This project is to engage a contractual service with a major Australian mine exploration company - BHP Billition. The project needs very high standard requirements in field operations and their Sustainable Development Policy. These requirements made them caught CMAC to be the most suitable candidate to deliver mine action service to support their exploration activities. Through the commitment and high standard of mine/UXO operations on the ground as well as the modern methodologies of CMAC, BHP Billiton decided to cooperate with CMAC since 2007 so as to assist them in mine exploration in Modulkiri province.

The agreement which was signed on 29th June 2007 was a first year of a larger project's implementation on UXO clearance to support BHP requirements and activities, especially in its mine exploration.

This project not only engaged UXO clearance but also promoted CMAC capacity building and risk education and reduction in the project site.

The achievement made by the project resources was captured from April to December 2007:

▪ Clearance	: 176,744m²
▪ Liner meter marked	: 44,812m
▪ Anti personnel mines found and Destroyed	: 26
▪ UXO found and destroyed	: 639
▪ Number of Tasks responded	: 25 tasks
▪ Unearth fragments	: 8,843
▪ Survey the new tracks	: 175 track-lines (392,529m)
▪ Total number of boreholes	: 540 MK
▪ Total number of marking the boreholes	: 550 MK (Spot of borehole)

In addition to clearance, survey and marking, the project also carried out risk education activities made by MRE team as follow:

▪ Total household visited	: 502
▪ Total courses of presentation	: 54
▪ Total villages visited	: 61
▪ Total audiences	: 2,784 ; (men: 739, women: 877 and children: 1,168)

During the reporting period, some MRE materials had been used for its activities as follows:

▪ Large T-Shirt	:173
▪ Small T-Shirt	:154
▪ Note Book	:1,095
▪ Poster	:1,860
▪ Leaflet	:440
▪ Story book	:10

In addition to MRE activities, the CBURR District Focal Point also carried out risk education activities and achieved the outputs as follows:

Target:

▪ Total target districts	: 5
▪ Total target communes	: 21
▪ Total target villages	: 99
▪ Total target population	: 279,387
▪ Total target household	: 48,249

Achievement:

▪ Total communes visited	:14
▪ Total villages visited	: 77
▪ Total households visited	: 879
▪ Total audiences	: 2,538 ; (men: 1,103, women: 921 and children: 514).

Reported the requests of mine and UXO to MRE team for intervention:

▪ Total requests sent to MRE	: 24 (AP mine: 1 and UXO: 325)
▪ Sources of informants	: 24 (21 requests were from community people, 2 requests from police station and 1 request from local authority).

2. Contractual Services with the Liberty Mining International Pty Ltd:

This project was contracted for 3 different sites of UXO survey and path finding clearance in Rattanakiri province by November 2006 between CMAC and the Liberty Mining International Pty Ltd. In 2007, it was on going project to support the company in researching mine underground. As per signed agreement, the project was separated as follows:

a. First contract agreement signed on 15th January 2007 was agreed to deliver the service of one Brush Cutter (5 staff) for 4-week in UXO survey and deep search clearance.

b. Second contract agreement signed on 25th March 2007 was agreed to deliver the services of one Technical Survey for Clearance Team "TSC" with (4 staff) for one month in UXO survey and path finding clearance,

b. Third contract agreement signed on 23rd July 2007 was agreed to deliver the services of one Technical Survey for Clearance Team "TSC" with (4 staff) for one month from 23 July to 22 August 2007 in UXO survey and path finding clearance. The operations in all of the 3 different site produced a fruitful achievement as follows:

▪ Clearance	: 148,665m^2
▪ Liner Marking	: 52,340m
▪ Cutting brush	: 14,980m^2
▪ Excavated by BC	: 3,672m^3
▪ Unearth fragment	: 30,473

3. Contractual Services with HOLCIM Telecom :

This contract agreement was signed on 20th August 2007 to engage CMAC services in providing a path finding, survey, and surface clearance in order to support the company's operational activities in Kampot, Kampong Speu, Kampong Cham and Kratie province. CMAC resource to engage in this contractual service consisted of one EOD team for 8-day from 3 to 8 September 2007.

4. Contractual Services with Cambodian Mining Development or (Action Group):

The service contract between CMAC and the company was signed on 28th March 2007 to conduct Mine/UXO survey on access road of 12km toward the mining and construction site from O Tavao of Pailin to Phnom Pich area, Tasanh commune, Samlot district, Battambang province. One TST were deployed to support the company's activities for two months from April to May 2007.

5. Contractual Services with Cambodia Advance Communications Co., Ltd. (CADCOMMS):

The contract was signed on 2nd July 2007 between CMAC and the company to engage CMAC service for landmine/UXO clearance, including deep search, to support the company's telecom project in Cambodia on national road#1 from Phnom Penh to Svay Rieng, national road#3 from Phnom Penh to Kampot, national road#4 from Phnom Penh to Sihanouk Ville, national road#5 from Phnom Penh to Poipet, national road#6 from Phnom Penh to Siem Reap and national road#7 from Phnom Penh to Kampong Cham (Suong market, Tboung Khmoum district). One TSC with one supervisor was deployed in this contract for one month period from 11 July to 17 August 2007.

6. Contractual Services 3 MDD Teams (SLD) with the Mine Action Group (MAG)

MDD has been established and sustained an effective operational MDD program within CMAC. During the reporting period, MDD has been extended their services to MAG to support MAG's demining operations in Cambodia. MDD have been started to supply to MAG since 2005, called cooperation program. In 2007, it was the on-going project continued from 2006 with 3 short leash MDD teams supplied to MAG to support its operations in the provinces of Battambang and Preah Vihear. In general terms, the cooperation between MAG and CMAC has been very positive and this cooperation is expected to continue supporting in 2008 while this project has been successful in the field operations.

It should be noted that although these MDD teams operated under MAG's command and control, but they were still CMAC's staff with CMAC's uniform, logistic, techniques, and training support. However, the project's progress was under MAG's control and arrangement for its own report.

KEY CHALLENGES

Demining in Cambodia is dangerous and difficult which makes it a challenging job. In addition, in CMAC's context, the heavy reliance on external funding makes it challenging for CMAC management to meet the competing demands of the various donors and translate this into a coherent work plan for CMAC operations.

In its operations, CMAC faces a number of key challenges which require constant attention. Those key challenges are:

1. **Heavy dependence on donors:** CMAC is heavily dependent on the donor support which sometimes poses one of the major risks for its activities. Currently, approximately 95% of CMAC's activities and resources are supported by several different donors and development partners. Technically, each donor has their own agenda and platform, which sometimes have a critical impact on CMAC.

2. **Demining is dangerous by nature:** It is generally accepted that demining work is one of the most dangerous tasks; therefore deminers require high concentration levels and must strictly follow the standard operations procedures (SOPs) to ensure their safety and maintain professional standards of work. At the same time the organization has to keep high levels of morale and disciplines to ensure that the work practices are completed in the safest environment for its staff.

3. **Road infrastructure:** Cambodia has one of the worst roads networks in the rural areas in the region. As demining is often conducted in the areas where people have not been for many years, access roads often pose great challenges. CMAC uses all means and plan very carefully to ensure that demining can be conducted in an efficient and safe way.

4. **Environmental Factors:** This is one of the biggest impacts associated with demining activities. Experience shows that environmental factors, including terrains, weather conditions and density of vegetation can slow down demining work considerably.

5. **Anti-tank mine stacks:** Due to the nature of sustained and at times ferocious internal conflicts, a variety of techniques was employed in laying mines against opponents. During that time, adversaries had one thing in mind: to stop the opponents from advancing, at all costs. Stacks of 2 to 6 anti-tank mines have been found. These pose formidable challenges for the development and application of mechanical demining systems.

6. **Laterite or Metal Fragments:**

Detectors we are using are metal detectors. When detector gives the signal, deminers starts to prod and excavate in accordance with manual demining SOP to reach the object under ground. As a result, if one minefield is a laterite minefield or is full of metal fragments, our demining activities is slow down because one fragment can be regarded as one landmine.

HOW CAN TECHNOLOGY HELP DEMINING OPERATIONS

1. Background

Demining is both dangerous and painstaking. It is dangerous because it involves the risk of harm to the individual and continual concentration for deminers. It is painstaking because it involves extensive vegetation removal prior to detection and excavation. Ask any experience demining operator, and you will get the same answer: it is a painstaking job to remove the vegetation, especially in a tropical country like Cambodia. Experience shows that manual vegetation removal takes up to 60 to 70% of the demining time. Some minefields are just not possible to clear by hand.

What is the solution for the demining operator to deal with this? How can demining be faster?

Nearly 11 years ago, CMAC deliberated over these questions and struggled to come up with the right solution. Finally, through cooperation with Japanese manufacturers and with assistance from the Japanese Government, CMAC found a solution. After comprehensive tests, trials and improvements in 1999 and subsequent years, CMAC found that the mechanical system proved to be very effective in dealing with heavy vegetation. As a result of the tests and trials, the first Brush Cutters (BC) were donated by the Government of Japan and introduced in CMAC operations in 2000.

In 2000, CMAC had 4 Brush Cutters: 2 Hitachi Ex-150 and 2 Komat'su PC-60. After the operator and maintenance training at the TC, they were deployed to assist demining in Demining Unit 1 in Banteay Meanchey province and Demining Unit 2 in Battambang province. In 2003, CMAC received 8 more Hitachi ZX-160 brush cutters and in 2005, 15 new Hitachi ZX-160 brush cutters were delivered to CMAC under the grant aid scheme, making a total of 27 BC's deployed throughout the country to all demining units.

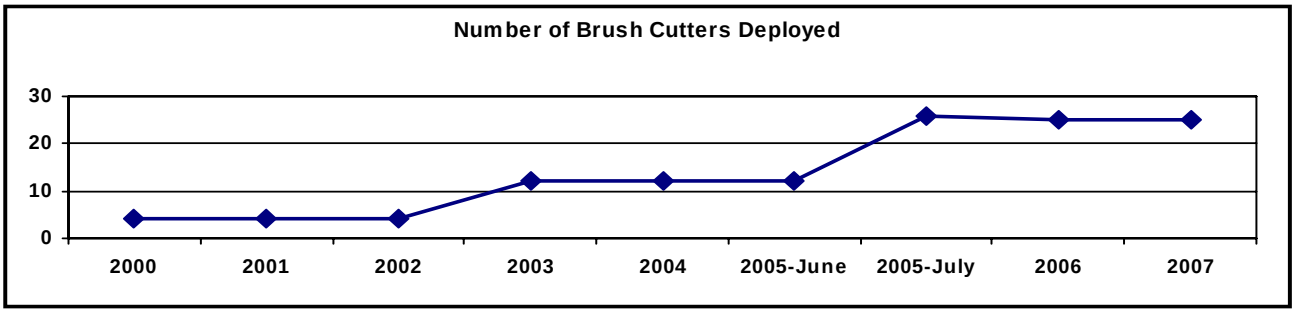
Resource Mobilization	January –December 2007											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BC DU1	6	6	6	6	6	6	5	4	4	4	4	4
BC DU2	6	6	10	10	10	10	11	10	11	11	11	11
BC DU3	4	4	4	4	4	4	4	4	3	3	3	3
BC DU4	3	3	3	3	3	3	3	3	3	3	3	3
BC DU6	2	2	2	2	2	2	2	2	2	2	2	2
BC R&D SR	2	2	2	2	2	2	2	3	3	3	3	4
TC	0	0	0	0	0	0	0	1	1	1	1	0
CSU	1	1	0	0	0	0	0	0	0	0	0	0
Suspend at DU2	3	3	0	0	0	0	0	0	0	0	0	0
TOTAL :	27	27	27	27	27	27	27	27	27	27	27	27

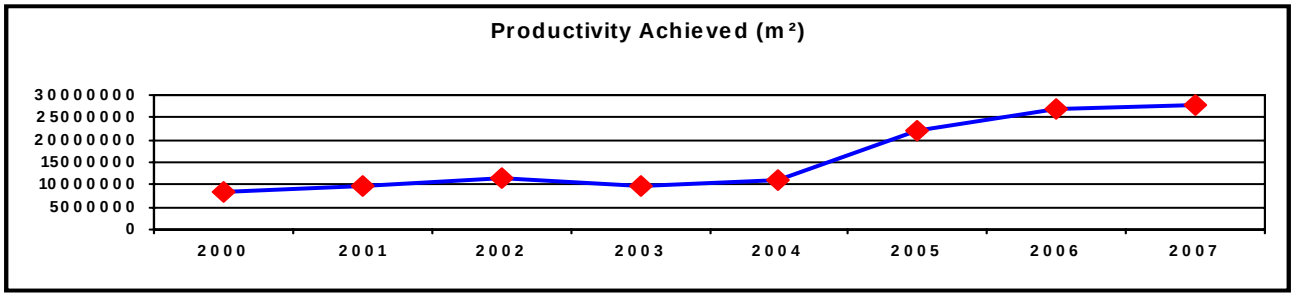
* ***Remark:*** *Two Komatsu brush cutters were removed from demining operations.*

Today, the application of the brush cutters has significantly advanced. Brush cutters were originally designed to cut and remove vegetation (non-ground engaging) in the mine fields to support other demining components such as manual demining teams, platoons, and MDD teams. Since the introduction into operations the brush cutters have significantly increased the demining speed and have changed the way demining is conducted in Cambodia. With the use of these machines, together with sound field management and training, CMAC was able to double its productivity in 2005 and continued to deliver a very high productivity throughout 2006 and 2007.

In 2005, CMAC took an initiative to trial this system to function as a stand-alone landmine clearance (ground engaging) system in addition to the vegetation clearing function. The trial was successful and the system has proved to be a very effective and useful landmine clearance system. As a result of the trial, CMAC reviewed its SOPs and started to use the brush cutters for vegetation cutting and ground engaging activities. To make them even more effective and efficient, a team of 4 deminers are attached to each brush cutter.

It should be noted that since the introduction of the brush cutters, the demining productive sharply increased from around 10 km² per year to over 27 km² per year in 2007.





2. Applications of the Brush Cutters

2.1 Vegetation Removal Role

From 2000 to 2004, the brush cutters were used solely as a mechanical vegetation removal tool to cut and remove vegetation, grapple tree and excavate soil mounts in the minefields to support demining teams such as manual demining teams, MDD teams and mobile intervention teams to speed up demining activities. This is still the primary function of the brush cutters today.

In this application, the tool is used primarily to remove vegetation prior to detection and excavation by deminers, thus reducing the manual demining work time by 60% to 70%. The cutting capacity of the brush cutters in the minefields is within the following range, depending on the density of the vegetation:

▪ Light bush:	280 – 300m²/h
▪ Medium bush:	240 – 260m²/h
▪ Heavy bush:	220 – 240m²/h
▪ Excavation of berms:	30 – 32m³/h

In 2001, CMAC trialed integration of the brush cutters with mine detection dog teams. After completion of the trial, the brush cutters were found to be a very useful system for integration with the MDD teams assisting them by cutting and removing the vegetation in the minefields prior to deployment of the dogs. Integration of brush cutters with other demining toolboxes has become an integral concept of applying brush cutters to assist demining operations, and the integration concept has produced satisfactory results by doubling the productivity in the fields. However, integration of these tools requires sound management skills and experience.

2.2 Mine Clearance Role

Realizing the great capability and potential in demining operations, in 2005 CMAC conducted a trial to use the brush cutters in a 'ground penetration mode' to till or scrap the soil and destroy or neutralize anti-personnel landmines. The purpose of the trial was to find a way to use the brush cutters as a stand-alone mine clearance tool to speed up demining operations to an even greater extent, by combining the vegetation cutting and mine clearance operations in one system. The trial was successfully completed, and

the brush cutters proved very capable and useful in the mine clearance operations. To enhance the adoption of this function into operations, the brush cutter teams were restructured in April 2005 and 4 deminers were attached to each brush cutter as a result. CMAC also reviewed the standard operations procedures (SOP's) for the brush cutters to update current operational use.

Following many years of experience in field operations, CMAC has discovered several applications for the brush cutters and their potential to adapt to different roles, and their ability to make land clearance much quicker. Today, in addition to deploying the brush cutters in the routine vegetation cutting and mine clearance operations, the brush cutters are deployed in complicated minefields such as those contaminated with sensitive or anti-prodding anti-personnel mines, minefields with heavy fragment contamination, minefields with hard ground conditions, or contaminated soil berms as a result of previous military or development activities. These minefield conditions are very difficult and pose great risks for manual deminers.

In addition, the brush cutters are also used to excavate soil mounts and to assist EOD teams to dig for buried UXO. Based on operational performance, the average excavation productivity of a brush cutter is 150 m² per hour. Even though this is lower than the cutting productivity, it is safer for deminers to clear the areas after the ground has been excavated.

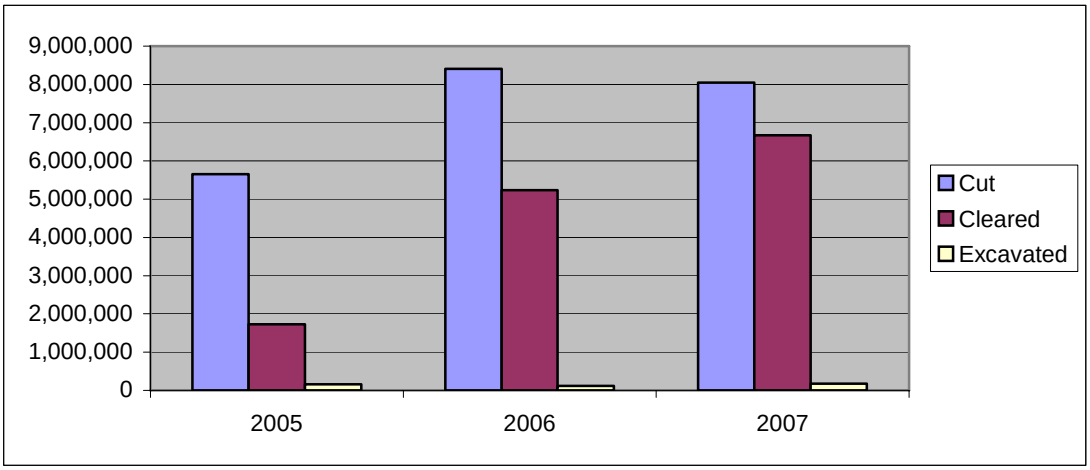
2.3 Soil Sifter Role

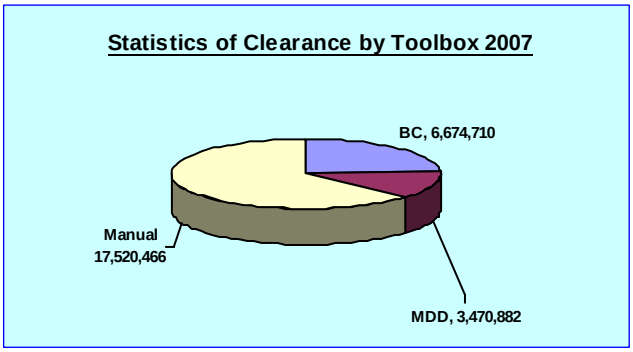
In mid-2006, responding to CMAC request, CMAC received 4 multi-tool quick detachable connector sifters from the US Army's Night Vision and Electronic Sensors Directorate (NVESD) to conduct of a trail. Changing from the current rotary cutter to one of the 4 types of the multi-tool sifters only takes about 5 minutes. The trial of the sifters aims to assist mine clearance by excavating and sifting soil in hard terrain.

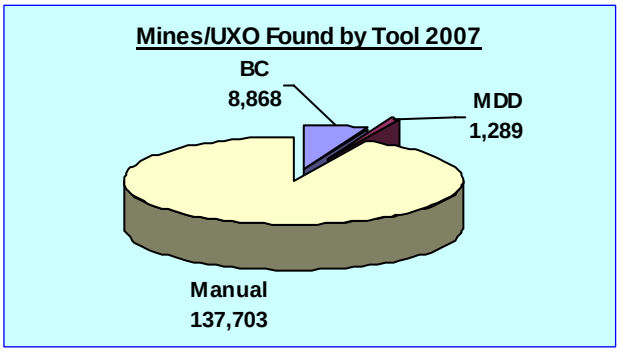
The trial is still on-going today, but preliminary results show that the sifters are useful for specific conditions of minefields and should well supplement to the existing rotary cutters.

3. Productivity

The following charts show the productivity of the brush cutters in the cutting, mine clearance and excavation roles in the past two years, 2005, 2006 and 2007.







4. Obstacle and Recovery Handling

One of the most remarkable features of the brush cutters is their self-recovery capability. In a tropical country like Cambodia, soft ground during the wet season poses a great challenge for heavy mechanical systems. That is probably the reason why not many demining operators are ready to go without the heavy machinery in mine clearance.

CMAC has had many years experience with the brush cutters, honing operators' skills and with the machines recovery capability utilizing their long boom, it makes them invaluable when they are deployed in the wet season. This self-recover capability is a unique feature of the brush cutters, and that explains why the brush cutters are fully operational all year round and they have access to all minefield conditions, especially where other types of demining machines cannot be deployed.

5. Supporting Development

In addition to their primary functions in mine clearance, vegetation cutting and removal, and excavation and clearance of berms, brush cutters are also used to support development activities such as access road construction, digging ponds and water canals, etc. This is a very useful function, and it is especially needed by the communities which are in desperate need of road and water supplies.

CMAC's brush cutters have made countless contributions to the community development efforts through paving and building access roads, digging ponds for families and communities, digging feeder canals for irrigation in the communities. These development activities in the former minefields have improved the livelihoods of thousands of families and have created a close bond between CMAC and the communities.

6. Maintenance

The brush cutters are not only useful in operations, but are also simple to maintain, compared with other demining equipment used worldwide. Since they are 'standard' excavators with attachments, maintenance of these machines is not complex. CMAC has an organic maintenance capacity, and the main maintenance and repair facility is located within CMAC's Central Workshop in Battambang.
In this Workshop, CMAC's experienced mechanics can perform all maintenance and repair tasks, from minor services to major repairs. Japanese experts from the manufacturers also provide technical support from time to time to ensure the optimum operational quality of the machines.

7. Conclusion

Ask a deminer or an operator, and they will both come up with the same answer: 'these brush cutters are very good'.

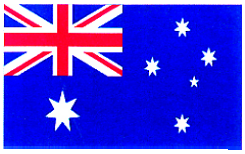
The partnerships between CMAC and the manufacturer have proved successful and through cooperation and commitment have provided systems that work in the Cambodia conditions. Testing, trials and improvements are implemented before they deliver the optimum performance in the field. Without good management, sound field

experience, strong commitment and technical support, the systems would not be of the same quality as they are today.

Finally, without the generous assistance from the Japanese Government through the ODA Grant Aid Scheme, CMAC's deminers would still be using basic manual cutting tools to remove the heavy vegetation. Demining would still be years behind where it is now.

Who benefits from this technology? The answer is all, especially the Cambodian people who really need safe land for their livelihood.

SPECIAL THANKS TO CMAC DONORS & DEVEPMENT PARTNERS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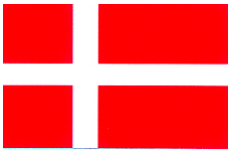
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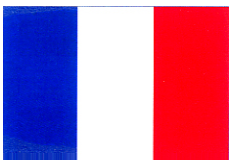
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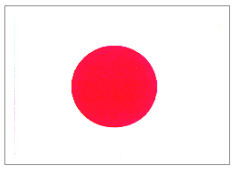
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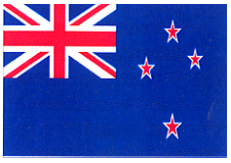
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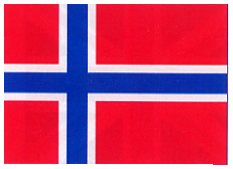
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Sweden


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UK


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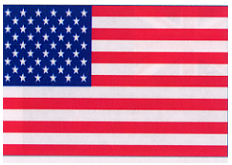
USA

- AUSTCARE
- CARE International
- CMAA
- ECHO
- HI (HIB)
- GICHD
- JMAS
- Local Authorities
- Peace Boat
- NPA
- Rotary International District 2650
- Save the Children Norway
- UNDP
- UNHCR
- UNICEF
- UNMAS
- UNOPS
- NGOs
- Privates

CMAC Annual Report 2007

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Your feedback is valuable for the improvement of our quality management system. We appreciate very much if you could spend your time to complete and return this survey form to CMAC Chief of Secretariat. Please rate (circle) your satisfaction appropriately.

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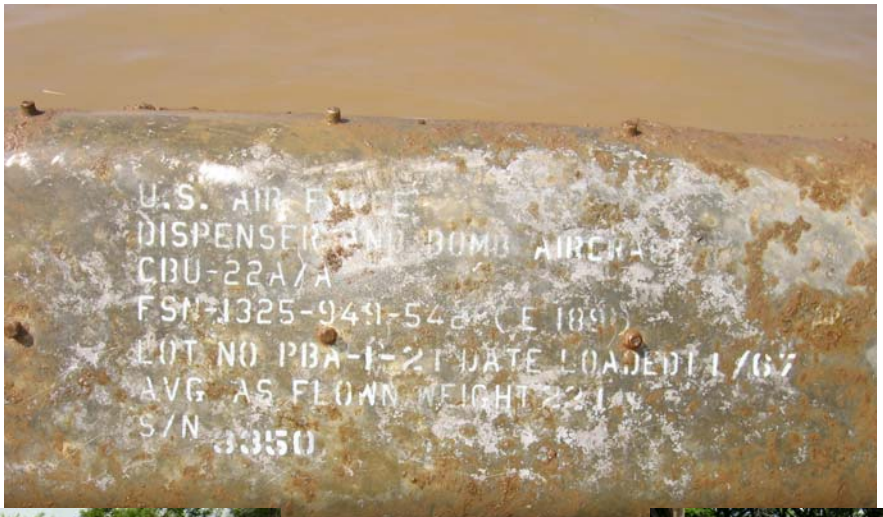
SAVING LIVES AND SUPPORTING DEVELOPMENT FOR CAMBODIA

annual report

2007



CMAC UXO Detection Dog

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E-mail : info@cmac.org.kh
Website : www.cmac.org.kh

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រាជធានីភ្នំពេញ កម្ពុជា, ប្រអប់សំបុត្រ ១១៦, email: info@cmac.org.kh
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