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Mine Risk Education Project of UNICEF: A Formative Evaluation

United Nations Children's Fund
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Mine Risk Education (MRE) Project of UNICEF: A Formative Evaluation

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Evaluation conducted by:
Ms. Anusha Fonseka – Development Analyst
Prof. KalingaTudor Silva – Senior Sociologist
Prof. Asoka Jayasena – Education researcher

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List of Abbreviations

APM	Anti Personnel Mine
ATM	Anti Tank Mine
CBO	Community Based Organisation
DDG	Danish De-mining Group
DMAO	District Mine Action Office
DMO	District Medical Officer
DS	Divisional Secretariat
GICHD	Geneva International Center for Humanitarian De-mining
GO	Government Organisation
GOSL	Government of Sri Lanka
GS	Grama Sevaka
HALO	Hazardous Area Life-support Organisation
HDU	Humanitarian Deming Unit
HH	Household
IDP	Internally Displaced Persons
IMAS	International Mine Action Standards
IMSMA	Information Management System for Mine Action
INGO	International Non Governmental Organisation
ISA	In Service Advisor
LTTE	Liberation Tigers of Tamil Elam
KAP	Knowledge Attitude Practice
MAG	Mines Advisory Group
MC	Municipal Council
MOH	Medical Officer of Health
MOU	Memorandum Of Understanding
MRE	Mine Risk Education
NGO	Non Governmental Organisation
NIE	National Institute of Education
NPA	Norwegian People's Aid
NSCOMA	National Steering Committee for Mine Action
PTA	Parent Teacher Association
QA	Quality Assurance
QAI	Quality Assurance Inspector
RDS	Rural Development Society
RMAO	Regional Mine Action Office
SCF	Save the Children Fund
SLA	Sri Lanka Army
SLR	Sri Lanka Rupee
TNT	Tri Nitro Toluene
TOT	Training Of Trainers
TRO	Tamil Rehabilitation Organisation
TRRO	Tamil Refugee Resettlement Organisation
UN	United Nations
UNDP	United Nations Development Programme
UNHCR	United Nations High Commission for Refugees
UNICEF	United Nations International Children's Education Fund
UXO	Unexploded Ordnance
WAN	Wide Area Network
WHO	World Health Organisation
WP	White Pigeon

Executive Summary

The Mine Risk Education (MRE) programme, supported by UNICEF is an important component in Sri Lanka's mine action programme. It has been implemented since 1997 in the Jaffna district and in the Vanni region[1] in close co-ordination with the United Nation's Development Programme (UNDP). Having started with a limited range of tools and approaches, MRE has now reached a professional standard where a diverse range of methods is deployed. As it stands today MRE attempts to make use of tried and tested tools to promote mine-safe behaviour. This evaluation study was conducted primarily to assess the effect and impact of MRE on the beneficiary communities.

Field research was carried out in a total of 6 Divisional Secretary (DS) divisions consisting of three DS divisions in Jaffna and 2 in Vanni and one in the Trincomale District. UNICEF supported MRE had been carried out to varying extents in the selected DS divisions in Jaffna and Vanni. The Morawewa DS division in the Trincomalee district which was outside the area served by the MRE programme under review was covered in this study for comparative purposes (ie. as the control area).

The evaluation used an approach which combined,
- Review of project documents and secondary data
- Key informant interviews
- Content analysis of selected educational material used in mine risk education
- A household survey covering a sample of 360 households

Unicef supported MRE is implemented through local partner agencies who in turn work through trainers, animators and field co-ordinators. Many tools of small and mass media are used to impart MRE.

During the survey it was found that nearly 99% of the target communities had heard about landmines and unexploded ordnances (UXO). Given the low literacy rates and lack of access to mass media channels particularly in Vanni, this figure is indicative of active information dissemination about the topic. Only about 15% of the people personally knew of others who were injured and only 30% had actually seen a mine/UXO. Therefore, it is clear that the rest of the people were made aware of mines through one or more secondary information channels. It can therefore be inferred that MRE either through mass or small media, had been instrumental in forming these information channels. Acquaintance with mines was equally high in the control area, ruling out the possibility that MRE is the only source of information about mines, in the population studied. There are, however, other evidence that suggests that MRE does feed some of the relevant information channels in the project areas.

The control area showed a higher incidence of mine/UXO injuries compared to project areas studied. This finding is significant in view of the following features.
- The threat of mines may be lower in the control area relative to some of the heavily mined project sites/former battle fields in Jaffna and Vanni.
- There were many people within the control area who were familiar with mines through 'Home guard' training.

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[1] The terms 'Jaffna' and 'Vanni' will be used to denote, 'Jaffna district' and 'Vanni region' respectively, in the report.

- Displacement is less of a problem in the control area. As a result, mine-risk has not been enhanced through large-scale return of IDPs, characteristic of Jaffna and Vanni.

Further, people in the control area, tended to have a lower mine risk awareness in spite of a reported higher prevalence of injuries. On the other hand in project areas where there was MRE, the awareness was higher, even though the injuries were less prevalent as illustrated in the table below. This depicts impact of MRE.

Table 1: Mine injuries and risk awareness levels in study areas.

Study area	Injuries	Risk awareness
No MRE	Higher	Lower
MRE	Lower	Higher

Source: HH survey findings

Therefore, it can be deemed that systematic and grassroots level MRE has contributed toward an increased level of Mine risk awareness in Jaffna and Vanni. Given the fact that the de-mining process itself does not automatically result in risk awareness, it is clear that MRE has played a vital role in increasing awareness.

It was also found that people in MRE target areas had a more realistic assessment of mine risks, including correct identification of warning signs and risk avoidance behaviours, which could only have stemmed from a sound source of training/information rather than mere presumptive speculation.

Most people in the project areas, claimed to have heard about mines/UXOs and risk avoidance behaviour through friends. Friends here (and throughout the report) denotes friends, relatives and neighbours. It can be reasonably inferred that some of these friends had been recipients of MRE. Besides, some of the MRE trainers are sometimes identified as friends, due to the nature of community networks. This may suggest that once MRE is imparted through various means, the relevant information may also be disseminated through secondary information channels including social networks among friends and neighbours.

According to Information Management System for Mine Action (IMSMA) data, mine injuries island wide has consistently decreased over the years since 1998 except for a sudden rise in 2000 caused by mass resettlement of internally displaced people (IDPs). How far this reduction can be attributed to MRE as distinct from de-mining is difficult to estimate, but as highlighted above there is a clear link between MRE and risk awareness. Correct mine risk awareness, leads to mine-safe behaviour which in turn can prevents injuries.

The Vanni area has been exposed to a wider variety of Unicef supported MRE programme tools compared to Jaffna in spite of the fact that Vanni was more isolated from mainstream information channels such as national newspapers and radio. The highest impact on risk avoidance behaviour patterns was found in urban centers (eg. Nallur). Higher level of education in the urban centers may have also contributed to this trend.

In the overall assessment on MRE tools, it was found that communities and school children had a tendency to prefer drama and animation/games based tools. In particular, communities with

comparatively low educational levels favorably responded to such tools. Presentations and lectures as well as posters and billboards were more effective with relatively educated adult audiences.

During the course of the programme, the MRE messages have been reviewed and re-designed with a significant focus on imparting 'positive messages'. On the whole this approach has yielded a mitigation of adverse psychological consequences particularly among school children. However, some members of beneficiary communities who had viewed the drama performances were of the opinion that the resulting de-emphasis on the 'catastrophic/phenomenal' content of the messages may have lead to a marginal reduction in impact.

On the whole, the local communities, and institutions tended to have a sympathetic and at the same time a positive image about surviving mine victims. This in turn may be at least partly attributed to MRE, including deployment of such victims as agents of MRE, by Unicef.

In summary, the comparison between the project areas and the control area point to the following beneficial impacts of the MRE programme.
- Reduction in injuries
- Higher level of familiarity with warning signs
- More realistic assessment of mine risk
- A higher tendency to adopt mine-safe behaviours

This evaluation also identified a few problems affecting the current MRE activities and some possible remedial action.

First, MRE programmes conducted in communities during day light hours do not reach their full potential because a majority of working males are away from homes at such times. Considering that young working males are the most vulnerable to mine injury, it was found that a mechanism to carry out presentations during early evening hours would overcome this problem.

Second, the existing data on mine injuries indicate a need for increased and more focused MRE particularly among children. According to IMSMA records, among adult victims, the percentage of landmine victims is higher than the percentage of UXO victims. The percentages are reversed when it comes to children, clearly indicating that children have a higher tendency to tamper with UXOs. However, as elaborated later on in the report, the overall percentage of adult, landmine/UXO victims is much higher than children. And overall landmine injuries outnumber UXO injuries.

Third, in spite of MRE, unauthorized de-mining and UXO tampering continue to be reported in some of the project areas. Untrained people clear mines on their own either out of personal need or as a means to earn good income. While, there is a marked decline in the problem since 1998, when mine action commenced, the practice has by no means disappeared in the project areas. Two radically different approaches to address this problem are available. One is to enforce a ban on all forms of unauthorized de-mining. The other is to train identified persons for basic de-mining operations as part of community based de-mining programmes. The evaluation team does not have enough information to recommend one approach or the other, but we suggest their risks and benefits of each approach must be carefully weighed in the light of ground realities in the Northeast before adopting one approach or the other or a combination of both.

Fourth, deliberate oblivion to mine risk was also reported in some instances. In some situations, people tended to ignore mine risks for the sake of continuing their livelihood. MRE needs to recognize this issue and evolve a dialogue with relevant population groups with a view to identifying suitable messages and safer options open to the relevant groups.

Key recommendations for the future are;
- Tailor-made MRE for beneficiary groups by advance assessment of needs.
- Sustainable MRE for the long term by incorporating MRE in the formal school system
- MRE to include advocacy to ban mines even at regional levels particularly in the Northeast.
- Revise and update content of MRE messages from time to time taking into consideration constantly changing ground realities.
- Visitors and resettlers entering the north eastern region from outside to be given MRE at entry/exit points
- Quick Response Teams (QRT) to be strengthened through mine action offices
- Indirect moral/ethical consequences of mine risk and the importance of responsible behavior on the part of all parties concerned to be highlighted in MRE in order to curb deliberate negligent behaviour
- Returnee Internally Displaced Persons (IDP) to be given adequate MRE
- Periodic assessment of the MRE programmes in the target villages.
- Conceptual framework on de-mining in conflict affected countries to be revisited with a view to address the problem of survival de-mining by untrained people

1. Chapter One: Introduction

1.1 Country background

Sri Lanka became a sovereign state with a parliamentary form of government, having gained independence from the British rule in 1948.   It is a multi-ethnic society comprising of Sinhalese (76%), Tamils (15%) Muslims (08%) and others (1%). In spite of its initial success as a functioning democracy and a welfare state, Sri Lanka failed to effectively manage political tensions particularly among diverse ethnic groups. The political parties, representing the minority Tamils in particular, increasingly felt disillusioned with the political system. On the other hand, sections of the majority ethnic group used their influence over the state to advocate and introduce policies and programmes addressing their long-felt grievances in relation to land, employment and education. This, in turn, led to a widening gulf between the state and a large section of the Tamil minority, effectively mobilized by various militant groups for their own political purposes. The armed conflict between the Government of Sri Lanka (GOSL) and the Liberation Tigers of Tamil Elam (LTTE), an armed group fighting for an independent Tamil homeland (Eelam) in Northern and Eastern Provinces of Sri Lanka, became the primary source of social and political instability in the country since 1983.

The war between the LTTE and the Government was pretty much concentrated in selected areas in Northern and Eastern Provinces, with occasional attacks on selected targets in the South by suspected LTTE guerillas. For strategic and other reasons , gaining stronghold in Jaffna district was considered crucial for both sides. Therefore some of the fiercest battles were fought in the Elephant Pass area of Jaffna (the narrow strip of land connecting the Jaffna peninsula with the land mass of the rest of the country) The area south of Jaffna spanning from Mullativu on the east coast, to Mannar in the west coast and to Vavunia on the south, came to be known as the Vanni region. Fighting was centered around army/LTTE camp sites in and around the Vanni. (Refer annex vll: Map of Sri Lanka) In addition, brutal attacks on political figures and civilian targets were carried out in other parts of the country by suspected terrorists from time to time.

From 1983 to 2002 an estimated 60,000 people lost lives and a further 1 to 1.5 million became displaced as a result of the war. Over 500,000 affected people, mostly Tamils, left the country as refugees or legitimate migrants. The war-related economic disruption and damage gradually engulfed the entire country, even though large-scale military operations were limited to Northeast Sri Lanka. In the February 2002, assisted by Norwegian mediators, the government in power at the time, signed a Memorandum of Understanding (MOU) with the LTTE, ending nearly two decades of war. The optimism about peace was short lived as the LTTE withdrew from peace talks in April 2003 and several conflicts erupted particularly in the Eastern Province. However, the ceasefire remains by and large effective to date, in spite of a government change in April 2004 and built up of tension from time to time.

1.2 Introduction to the Problem of Landmines/UXOs in Sri Lanka

Mines were used by both the LTTE and the Sri Lanka Army (SLA) as part of the offensive/defensive strategies. (Refer annex lll for 'Overview of mines and UXOs')

The Chavakachcheri (Thenmaradchchi) DS division in the Jaffna district and the Pachchilaipalli DS division in the Kilinochchi district faced the brunt of the war since both locations are situated close to the Elephant Pass area, which held a strategic significance in the struggle to gain control over the Jaffna Peninsula. As a result, heavy concentrations of mine fields can be found in this region. When army regained control over the Jaffna Peninsula in 1995, there was a mass exodus of people out of the area. In these areas both the army and the LTTE laid landmines from time to time in order the prevent the forward march of the enemy forces. Landmines became a serious problem for civilians as they began to return and resettle in their villages of origin since 1998. The IDP returnees started falling victim to mines, sometimes in the vicinity of their homes. A huge public outcry on the issue of the 'mine' gradually emerged in the Jaffna district. There was an obvious need for immediate intervention to curb the problem.

According to statistics on mine/UXO related injuries/deaths, the Jaffna district has reported the highest numbers. In the Jaffna district alone 589 people have been injured and 68 killed as a result of mine/UXO related injuries as of April 2004 as illustrated in figure 1. Districts recording less than 25 incidents per district are not shown in Figure 1.

Figure 1: Injuries and deaths from Mine related accidents by districts
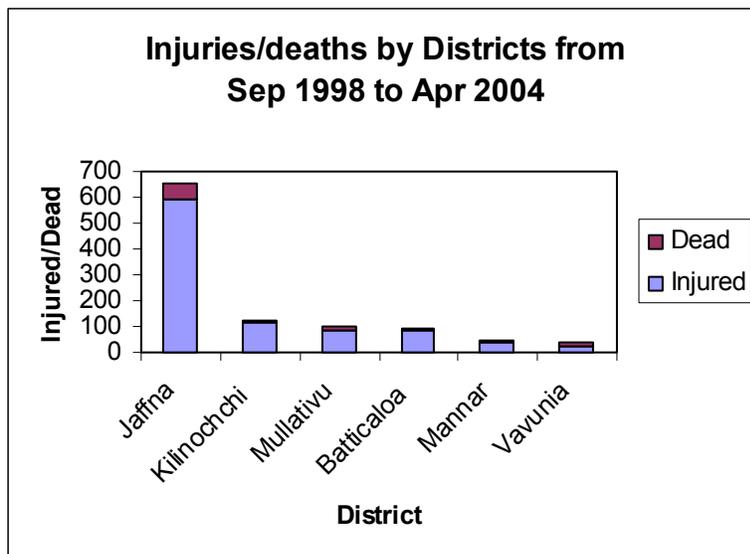
Source: UNDP IMSMA records as of 16 April 2004

The total numbers of casualties island-wide increased drastically in mid 2000 when mass resettlements occurred. There has been a marked decline in the casualties since mid 2002. (Please refer annex l for IMSMA statistics)

Two factors precipitated the high rate of prevalence of mine-related injuries/deaths in Jaffna.
- Higher concentration of armed conflict in the relevant areas
- Higher level of post-conflict resettlement

A majority of those injured by mines are males. Males in the age range of 18-35 are the most vulnerable to mines/UXOs. According to statistics 179 males and 42 females in this age group have sustained injuries. (Refer annex l for IMSMA statistics)

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Also, it is noteworthy that a higher percentage of injuries among children, is caused by UXOs whereas a higher percentage of injuries among adults arise due to mines. UXO injuries arise only when there is deliberate tampering with the object. This clearly indicates that children are more likely to play/tamper with UXOs compared to the adults. (Refer table 2 below)

Table 2: Number of Mine/UXO Victims by age group

Age Group	Number of victims
Below 5	13
05-12	74
13-17	55
18-35	160
36-59	120
Over 60	25
Total	**447**

Source: UNDP IMSMA records as of 16 April 2004

Figure 2: Percentage of victims by source of injury and age group
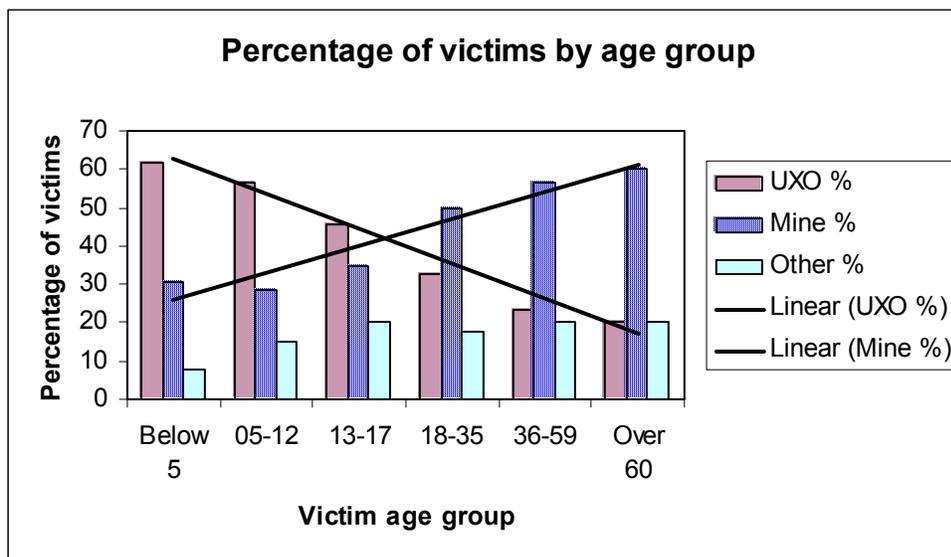
Source: UNDP IMSMA records as of 16 April 2004

The situation relating to mine/UXO injuries took yet another turn when the A9 road was opened to the public following the signing of the MOU in February 2002. As a result, vehicle movement between the North and the South through Vanni rapidly increased. Consequently, more people, many of whom had no knowledge of mine risks at all, became vulnerable to mine injuries.

1.3 Background to the study
Under the overall co-ordination of National Steering Committee for Mine Action (NSCOMA), UNICEF has initiated a MRE Programme in collaboration with a number of partners in several districts in the conflict-affected North-East Provinces of Sri Lanka. These partners include the

local/national NGOs, International NGOs (INGO), National Institute of Education (NIE), Provincial Department of Education, UNDP (Mine action programme) and district mine action authorities. This programme aims to;
   a) Prevent land-mine and UXO injuries,
   b) Promote mine-safe behaviors through the application of a variety of educational techniques,
   c) Develop linkages for information sharing across stakeholders

As this project was initiated during the humanitarian emergency phase of the civil war in Sri Lanka, a baseline study could not be carried out at the beginning of the project in 1997. Against this background, the present evaluation seeks to review the progress made so far and identify any mid course adjustments needed in view of the changing security situation, marking the return of a growing number of internally displaced people to their original villages and other ongoing changes in the project environment.

1.4 Objective of the study
The overall objective is to assess the relevance, effectiveness, impact and sustainability of the mine risk education programme taking into consideration the targets set, resources available and opportunities and constraints associated with the changing project environment.

The specific objectives of the evaluation consist of the following:

- To assess the impact of the project on mine risk awareness in the target populations
- To assess the impact of the project on reduction of mine and UXO injuries
- To assess the effectiveness of specific interventions such as small & mass media and popular theatre with regard to accuracy and relevance of the information disseminated
- To assess monitoring, evaluation and training capacities of the project.
- To assess the effectiveness of the Information Management/Sharing Systems across stakeholders.
- To assess coordination and collaboration among various partners, including UNDP sponsored mine action project.
- To identify adjustments needed in the project in view of the changing project environment
- To identify and recommend strategies for enhancing relevance, effectiveness and sustainability of the project through dissemination meeting/workshop.

1.5 Study methodology
In the absence of relevant baseline information, the evaluation sought to assess the level of mine risk awareness in the target populations and how far the observed level of knowledge and awareness may be attributed to the project interventions.

The effect of the project was determined on the basis of a four-way comparison among high intensity, medium intensity and low intensity project sites and a control group, as specified below.

Figure 3: Scheme for Evaluation of Project Impact

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┌─────────┐      ┌─────────┐      ┌─────────┐      ┌─────────┐
│  High   │◄────►│ Medium  │◄────►│  Low    │◄────►│ Control │
│         │      │         │      │         │      │  Group  │
└─────────┘      └─────────┘      └─────────┘      └─────────┘
         ◄──────────────────────────────────────────►
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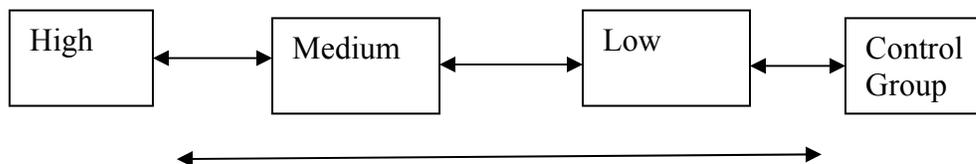
High intensity project sites were those in which all project components had been implemented throughout the project period (i.e since 1998). Medium intensity project sites were those in which many of the project interventions had been carried out for a reasonable period of time (Approximately 1-2 years). Low intensity project sites were those in which only some of the interventions had been implemented or interventions had been only partially implemented due to one reason or another. The number of MRE activities reportedly carried in each area was used as an indicator of the level of intensity of project interventions in each area. The control group consisted of mine affected areas where mine risk education had not yet been implemented by Unicef. Efforts were made as far as possible to ensure that the four study groups were comparable in all other respects except for the exposure to mine risk education. The specific sites included in each category were determined after the review of secondary data, maps showing distribution of Landmines and UXOs, preliminary field visits and consultation of relevant project staff and partner organizations.

1.6 Sampling, Study sites and Data collection

Sampling and selection of study sites
The UNICEF supported MRE activities have been carried out since 1998, in seven districts out of a total of eight districts in Northern and Eastern Provinces. MRE was implemented in the districts of Jaffna, Kilinochchi, Mullaitivu, Vavuniya, Mannar, Batticaloa and Trincomalee. This evaluation covered the first five districts listed above. The districts of Batticaloa and Trincomalee were not covered as the MRE programme in these districts had commenced very recently. In selecting the sample of households for this study, a multi stage stratified sampling procedure was followed. In the first stage two of the five districts covered by the project were purposively chosen based on intensity of MRE interventions. The districts of Jaffna and Kilinochchi were chosen primarily due to the fact that Unicef MRE programme was implemented over a longer period of time and a higher prevalence of landmines in these areas. Having considered several possible options, Moraweva DS division in the Trincomalee District in the Eastern Province was identified as a control area where mine risk was present but no systematic MRE activities had so far been introduced.

In the second stage a number of DS divisions were purposively chosen from each of the selected districts. The DS divisions in the Districts of Jaffna and Kilinochchi were stratified according to level of intensity of MRE activities in each such division. In the Jaffna District DS divisions were classified as low, medium and high according to level of intensity of MRE activities.
From each of the three strata of intensity of interventions, one DS division was chosen. In the Kilinochchi district, the DS divisions were classified as low and high intensity. One DS division from each category was chosen using similar criteria as in the Jaffna District.

In the third stage two Grama Sevaka (GS) divisions from each of the selected DS divisions were randomly chosen.

In the fourth stage a fixed number of households were randomly chosen from each of the selected GS divisions. From each of the selected DS divisions a total of two GS divisions were randomly chosen giving a total of 12 GS divisions from the 6 DS divisions selected in the earlier step. It was decided to select a total of 30 households at random from each of the 12 GS divisions covered by the study. The households were randomly selected using the latest household lists available with the local Grama Sevaka. A total number of 360 households were surveyed.

Details of the selected study locations are given in table 3 below.

Table 3: DS and GS divisions selected for the study by intensity of interventions

Category	DS Division	GS Divisions (HH Number)
Control - Trincomalee	Moraweva	• Nochchikulam (30) • Panikattiyawa (30)
Low Intensity – Jaffna	Chankanai	• Arali East (30) • Tholpuram east(30)
Moderate intensity – Jaffna	Nallur	• Ariyalai Northwest(30) • Neeravadi(30)
High Intensity – Jaffna	Chavakachcheri	• Kudamiyan(30) • Kaithady south(30)
Low Intensity – Vanni	Karachchi	• Uruththirapuram North(30) • Selvanagar(30)
High Intensity – Vanni	Pachchilaipalli	• Thambagamam(30) • Soranpatru(30)

Data Collection Method

Information was collected from a variety of sources as specified below:

- Review of project documents and available secondary data. This includes an analysis of UNDP IMSMA records and Unicef material.

- Key informant interviews with officials in project head office, partner organizations (including government officials, representatives of local implementing agencies) and staff of relevant mine action programmes. In addition, persons representing target beneficiary groups were also interviewed. Key informants were selected taking into consideration their first-hand knowledge about various aspects of implementation of the project. A list of key Informants interviewed is given in annex vl.

- Content analysis of selected educational material used in mine risk education.

- A survey of a random sample of households in the relevant communities in order to assess their mine risk awareness, risk avoidance behaviors, incidence of mine and UXO related injuries, attitude towards reintegration of surviving mine-victims and participation in project activities. A questionnaire for the household survey was developed by the evaluation team in consultation with the project staff and selected partner organizations. The questionnaire was translated into Sinhala and Tamil and pre-tested in a location outside the selected study areas.

1.7 Limitations of the Study

It must be pointed out that this evaluation was carried out under a variety of constraints.

In the absence of baseline data it was not possible to accurately determine the pre-project situation concerning knowledge, attitudes and behaviour relating to landmines and UXOs. This, in turn limited the ability to measure the project impacts in the relevant target populations. Given this constraint, for the most part, the evaluation team was able to assess the effect rather than the impact of the programme.

The project had experienced many shifts and turns from its inception. The various partners associated with the overall national mine action programme also added to the complexity of the project implementation. As multiple interventions were carried out in each project area simultaneously, it was not possible to separate the effect of different interventions.

Another key limitation of the project is the difficulty in evaluating the MRE component in isolation, owing to the fact that MRE and de-mining commenced more or less at the same time and have been conducted simultaneously with a lot of parallel connections and co-ordinations in the two programmes. A reduction in the mine injuries could have taken place due to either MRE alone, Mine clearance alone or due to a combination of the two. The chances are that both aspects may have contributed toward the progress. Therefore, it would not be possible to determine a direct correlation between reduction in injuries and MRE in isolation.

The introduction of MRE to the formal school curriculum (which took place during the course of 2003) was not subjected to the present evaluation, as the development of materials and training of teachers had just commenced at the time of the evaluation.

2. Chapter Two: Mine Risk Education (MRE) programme in relation to overall mine action in Sri Lanka

2.1 Mine action programme in Sri Lanka

The strategy in Sri Lanka is to focus mine action squarely in support of resettlement, reconstruction and development. The national mine action programme commenced in 1997 and it aims to have all high risk / high priority areas cleared by end of 2006.

In addition, promotion of peace is seen as an important by product of the process.

The mine action strategy in Sri Lanka comprises of several components.
- Identification, Surveying and Marking out of mine fields
- Clearance of mines/UXOs
- Survivor assistance
- MRE
- Advocacy for banning of manufacture, usage and stockpiling of mines.

Countrywide policy direction in mine action is provided by the NSCOMA, based in Colombo. A Sri Lanka Mine Area Database, currently managed by UNDP, contains over 2000 minefield records provided by the SLA and significant additional information from surveys conducted by partner agencies involved.

Mine action is organized under regional/area mine action offices in Jaffna, Kilinochchi and Vavuniya. These offices develop priorities in consultation with all relevant authorities in response to local needs. These offices provide operational co-ordination, centralized information management and tasking in their respective areas and are supported by UNDP, Unicef and NGOs. The components of the mine action project are outlined below.

Mine Clearance

Mapping, marking of minefields followed by mine clearance is carried by International Non-Governmental Organizations (INGO) and SLA in Government controlled areas and the Humanitarian Demining Unit in Vanni. The INGOs involved in the programme are, HALO Trust, Mines Advisory Group (MAG), Norwegian Peoples Aid (NPA), Swiss Foundation for Mine Action (FSD), RONCO, and Danish Demining Group (DDG).

MRE

Community-based and school-based MRE activities are carried out, mainly by local NGOs, in all mine/UXO affected areas of Sri Lanka. In addition, MRE is also conducted in IDP camps outside the affected areas in an effort to reach the people there before returning to their potentially mine infested areas of origin. The community-liaison part is a crucial component of the programme, ensuring information exchange between the affected communities and mine/UXO clearance operations. UNICEF is playing a leading role in coordinating, funding, and advising on MRE activities in Sri Lanka.

Survivor Assitance

Generally, Sri Lanka has sufficient medical facilities to provide the care needed by landmine survivors. However, health care is less effective in the Northern and Eastern Provinces, including the LTTE-controlled areas. Currently there are a few organizations including NGOs, that are dealing with the issue, using interventions ranging from emergency care, orthopedic centers, physiotherapy, psychosocial support, training and income generation. But the services provided varies from area to area and are generally not sufficient.

Advocacy
Even though the international mine action efforts encompass advocacy for banning manufacture, usage and stockpiling of mines, Sri Lanka is not signatory to the 1997 Ottawa treaty on banning landmines (The government of Sri Lanka was not a signatory because of a lack of agreement between GOSL and LTTE on banning of mines)

2.2 MRE programme and Unicef's role
UNICEF supports a network of local NGOs engaged in community-based MRE in nine districts in the north and east of Sri Lanka. It is the pioneer and primary agency involved in MRE in Sri Lanka. As described under section 1.3 the programme aims to prevent injuries, promote mine-safe behaviours and develop linkages across stakeholders. To this end, UNICEF joins hands with partner agencies in developing, adapting and applying a range of educational techniques. The programme is implemented under three broad categories,
- Community based MRE
- School based MRE - Non formal interventions carried out through NGOs
- School based MRE - Formal interventions focused on the curriculum

The tools used for MRE in communities and schools (non formal) range from presentations, signboards, handbills, posters, drama, games and competitions depending on the audience type.

UNICEF has also worked with the National Institute of Education (NIE) to incorporate MRE in the school curriculum. A teacher manual and a student activity book have been developed by NIE in association with Unicef. The module is incorporated in the social studies subject in secondary schools. Several teacher training programmes which are in essence training of trainer programmes (TOT) were conducted by Unicef.

In addition to the schools in the north east, this component of the programme is also being extended to the villages at risk, situated in the southern/inland peripheries of north eastern provinces.

2.3 Types of tools and messages available and utilization

Community based tools/messages
The following tools are used for imparting MRE to beneficiary community members.

- Warning sign boards
  Sign boards often cut out of metal plates measuring approximately one square foot, are used to warn of dangerous areas and minefields. These are displayed at the outer border of a

potential mine field. They are painted red and depict the internationally recognized danger warning sign of skull with bones.

- Billboards
  Large billboards have been put to educate the public. Some billboards carry basic maps and information related to the mine field locations. Other billboards carry messages introducing mine/UXO types and recommended behaviour. These billboards are found in key locations frequented by the public. For example at cross roads along the main A9 highway.

- Posters and Handbills
  Posters are displayed in areas where the public gather. For example at the DS office, medical centers, NGO offices etc. In addition, handbills are provided to people wherever appropriate. When there is a need for MRE for large batches of people, handbills are used to supplement the programmes.

- Direct presentations
  A direct presentation made in the community includes several components.

  Lecturettes
  During these lectures the audience is given an introduction to mine/UXO risk. The scope and the nature of the issue are highlighted. Incidence of injuries is narrated and the risk potent of the mines/UXOs is explained.
  The contents of lectures vary in keeping with literacy level of the audience.

  Display of visual images
  In these programmes, visual aides such as pictures of mines/UXOs are used. These color images of objects are printed and laminated on A3 size paper.

  Question and answer sessions
  Often at the end of each programme the audience is requested to raise questions related to their concerns over mines. The trainers clarify the issues.

- House to house visits
  House to house visits are made to inform each family about mine risk in the area. Informative discussion is the primary method used here. House visits and community presentations are carried out jointly when a de-mining task[2] takes place in a village. MRE programmes carried out side by side with de-mining, are classified into three types.

  ➢ Before de-mining:- De-mining agencies co-ordinate with the MRE agencies and inform them of the areas marked out for future tasks. The MRE groups are then able to liaise with the community living adjacent to the demining area. The community is prepared to co-operate with the de-miners.

  ➢ During de-mining:- Often there are specific issues which arise while the de-mining takes place. Such as issue of how to interpret the meaning of different colored sticks

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[2] A task refers to the action of de-mining in an area after systematic surveying, and marking, by a team of de-miners.

used for marking the task area. At this stage MRE teams step in to educate the community on good practices.

> After de-mining:- When a cleared area is handed over to a community after the de-mining task, the community is given specific MRE, particularly relating to the boundaries of the cleared area, so that they do not presume other neighboring areas to be 100% risk free as well.

In areas where people have been living for sometime, house visit method is used. When there is a large influx of IDPs into a potentially dangerous village, then direct presentations are done, as there is no sufficient time for house visits. At both, house visits and presentations, the beneficiaries are given basic information on what to do in the event of a discovery of a mine/UXOs. They are also provided with contact details of de-mining authorities.

Generally all community based programmes are conducted in consultation with local government officers such as the Grama Sevaka officers in charge of a given village.

School based tools
These tools are implemented through non-formal educational programmes conducted in the schools as well as through the formal curriculum. Following are the tools used by the non formal interventions.

- Board Games
  An adapted version of the 'Snakes and Ladders' board game is used by the programme. Several sets, complete with throwing dice, were produced and distributed among school children.

- Animated games
  Outdoor games and animated games are used to educate school children about mines/UXO risk. In one form of game children are made to dress up and stand in for mines and UXOs. Other children are made to play around these objectified children.

- Songs and Rhymes
  Children are taught songs which are modeled on melodies and rhymes already known to them. They are encouraged to sing along with the trainers during the training programmes.

- Posters and printed material
  Printed material with graphic images of mines/UXOs are used extensively. For instance, school time table marking sheets with colourful images depicting MRE messages are printed on glossy paper and distributed among school children. Posters are displayed on school notice boards, hallways and walls.

- Pocket and wall Calendars
  Calendars are printed and distributed among schools, local organizations and households.

- Essay and art competitions.
  Essays and art competitions are used to stimulate children into articulating their knowledge on MRE

It should be noted that as stated before that the formal interventions via the school curriculum did not fall under the purview of this study.

2.4 Content of MRE messages

The messages in MRE programmes centre around the following themes.

- <u>What are mines/UXOs</u>
  Types of different mines/UXOs are introduced and the manner in which they detonate are highlighted. The amount of pressure needed to set off a mine is illustrated. Warnings are given about the illusiveness of booby traps. Risk from tripwires is explained. UXO explosive potent is made clear.

- <u>In what places are you likely to find mines/UXOs</u>
  Beneficiaries are given information on the places where mines are most likely to be. Examples are drawn from the local environment. Muddy banks of waterways, elevated bunds used as forward defense lines during armed conflict, damaged houses, overgrown footpaths ruins of war machinery etc. are highlighted. They are requested to use alternate routes for traveling when they come across such places.

- <u>What can mines/UXOs do to you, others and pets</u>
  They are made aware of the danger potentiality of these objects. For example they are informed that even cattle are susceptible to mine injury.

- <u>What should you do when you are in a minefield</u>
  At the early stages of MRE the beneficiaries were informed that they should back track their steps if they were to realize that they are inside a minefield. However, later it became clear to MRE programme designers that back tracking does not guarantee safety from mines, which are only about 3 inches in diameter and could be placed between two alternating steps on the ground. The message now therefore is to stand on spot and call out for help.

- <u>What should you do when you discover a mine/UXO</u>
  People are requested not to tamper with or attempt to move the mine/UXO on their own but instead to remember the location where it was seen and inform the correct agencies.

- <u>Whom should you inform when you discover a mine/UXO</u>
  The people are given contact details of MRE/de-mining agencies for the purpose of informing in the event of mine discovery.

- <u>What are your responsibilities toward your own safety and the safety of others around you.</u>
  People are made aware of what they should do if they were to see someone injured by a mine. They are requested to disseminate their knowledge of mine risk to others in the community.

2.5 Organizational setup for implementing MRE

Unicef collaborates with partner agencies to implement MRE programmes using the tools listed above. The District Mine Action Office (DMAO) in Jaffna and Regional Mine Action Office (RMAO) in Vanni operate as the two hubs through which all mine action is coordinated in the respective areas. Demining, MRE and Survivor Assistance (SA) programmes are integrated through these centralized mechanisms in the two regions.

Jaffna Activities

Figure 4: Organizational linkages in Jaffna
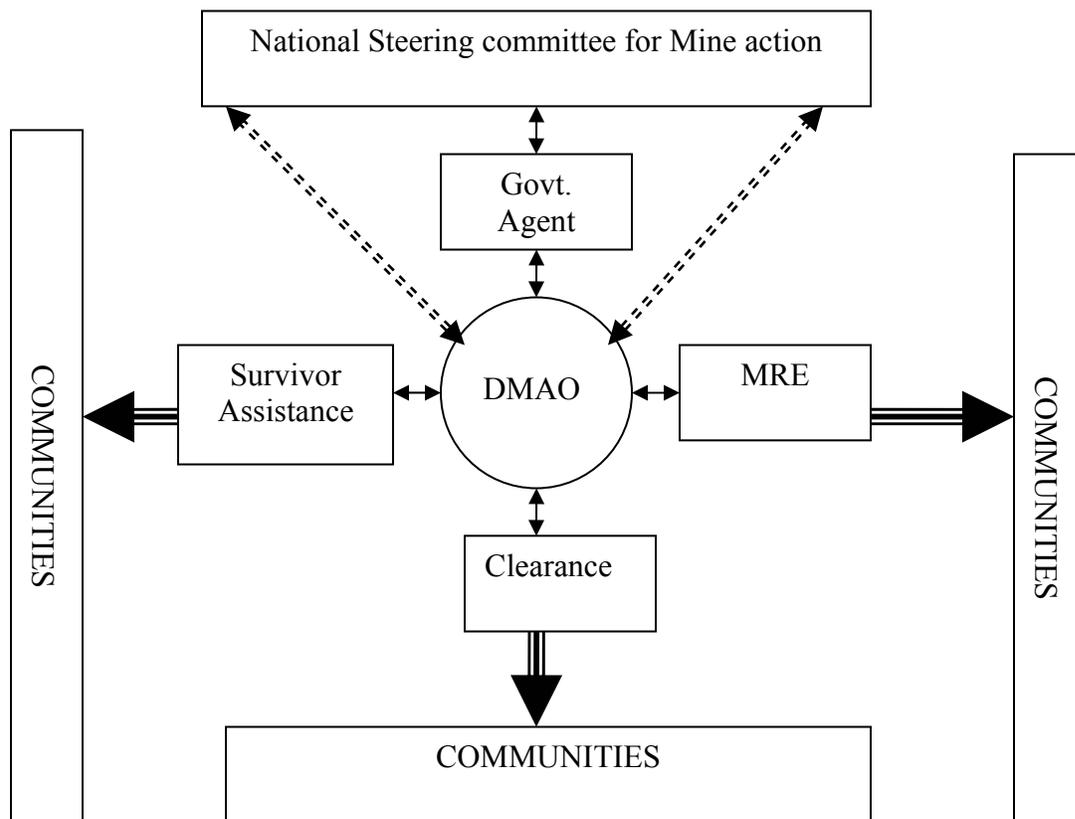
There are three partner agencies which implement Unicef MRE programmes in Jaffna.
- The Refugee Resettlement Organisation (TRRO)
- Sarvodaya
- White Pigeon (WP)

The partner agencies carry out their activities focusing on different target groups and/or different geographic locations, so that duplication of activities is avoided.

The Refugee Resettlement Organisation (TRRO)

This is a local NGO operating in Jaffna. One of the key components of the TRRO approach is their 'Active Theatre Movement' through with humanitarian interventions are made among beneficiary

communities in Jaffna. They operate through sub offices in Inuvil, Sandilipay and Thirunalveli. They implement MRE using applied theatre methods. Dramas have been scripted, directed and performed by TRRO under the Unicef MRE programme. The drama themes are developed under the scrutiny of Unicef in order to maintain consistency of MRE messages. They stage approximately 20 drama performances per month in schools and in communities.

Sarvodaya
This is a leading national NGO operating throughout Sri Lanka with branch offices all over the country, including Jaffna. Sarvodaya implements various relief, rehabilitation and development programmes and collaborates with many international partner agencies.
They linked up with Unicef for MRE in Jaffna. Community presentations and house-to-house visits are the main modes of MRE employed by Sarvodaya. Sarvodaya gives priority to conducting MRE in areas earmarked for clearing.

White Pigeon (WP)
This is a local NGO with it's head office in Vanni. It has a branch office in Jaffna. WP is involved in a variety of community based programmes. They work with communities as well as with schools in relation to MRE. Art and essay competitions are facilitated by WP.

Table 4: MRE activities of Unicef Partner agencies

Partner Agency	Community based tools used	School based tools used
TRRO	• Drama	• Drama
Sarvodaya	• Presentations • House visits	None
White Pigeon – Jaffna	• Presentations • House visits	• Presentations • Games & Competitions
White Pigeon – Vanni	• Presentations • Drama • House Visits	• Drama • Presentations • Games & Competitions

Vanni Activities
In the Vanni, mine action is organized under the purview of the Tamil Rehabilitation Organisation (TRO) which is closely associated with the LTTE. The RMAO is located in Kilinochchi and all mine action is co-ordinated through this body.

Figure 5: Organizational linkages in Vanni
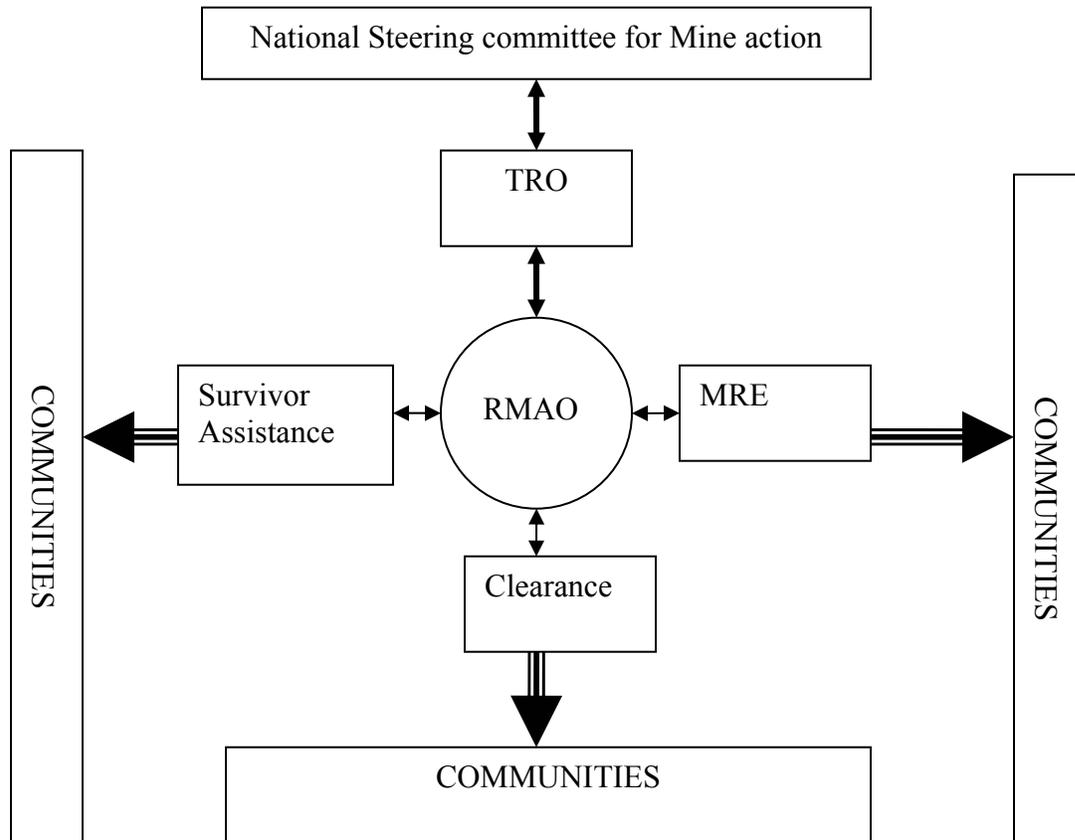
White pigeon is the only local NGO through which Unicef supports MRE in Vanni. WP head office in Kilinochchi carries out the same activities as WP Jaffna. Owing to the vast geographic span of the Vanni region, they operate through 10 co-ordinating centers (sometimes called 'sub offices') spread across the region. There are at least three trained staff members attached to each centre. They liaise with the community for survivor assistance and MRE.

2.6 Monitoring Mechanism for Unicef Interventions

Monitoring of MRE is carried out under two broad categories.

Quality of the MRE programmes
The quality assurance process that takes place through the Jaffna DMAO is geared to monitor the quality standard of MRE. Six persons designated 'Quality Assurance Inspectors' (QAI), are based in the DMAO. They are trained in overall aspects of mine action including MRE. QAIs undergo one week long training each month for a period of six months. They operate under the supervision of a team leader.

They make random visits to the field locations where MRE programmes take place. MRE agencies send an advance schedule of their respective MRE programmes to the DMAO, on a weekly basis. Using this information the QAIs visit the MRE sites. QAIs bring issues concerning the contents of MRE programmes to the steering committee meetings which take place weekly at the DMAO.

QAIs use a Quality Assurance checklist to assess various qualitative aspects of the MRE programme. Some of the key aspects examined are;

- MRE trainer co-ordination with the beneficiary group administration
- Type of teaching aides/methodologies applied
- The trainer's knowledge on MRE tools/messages and mine action in the area concerned
- The trainer's skill in conducting programmes
- Level of co-ordination with other mine action efforts
- Whether the MRE teams pay monitoring visits to where programmes have taken place
- Whether the MRE team provides feedback to the group (For example feed back to school teachers after programmes are conducted in school)

Quantity of MRE interventions

Using the advance programme schedule submitted by MRE implementing agencies, the DMAO keeps records of the location of the MRE programmes. In addition to this, every time an MRE programme is conducted a 'source data sheet' is prepared. This source data sheet is sent to the IMSMA cell[3] at the DMAO/RMAO. The IMSMA operator then feeds the MRE data in to the system. Thereby the number of MRE programmes by geographic location, type of audience etc. is entered into the system. The system then processes the data and converts the raw data into graphic/analytical information which can be accessed by the MRE monitors.

This sets in motion a quantitative monitoring system for MRE.

| MRE source data inputs | → Processing in the IMSMA system → | MRE information outputs |

2.7 Information generation and dissemination

IMSMA is a software based data management tool used in mine action. It is a computerized mapping system to indicate mine fields, dangerous areas, de-mined areas, de-mining and MRE agency activities. This includes a data base on incidence of mine/UXO injuries along with details on gender, age etc. The objective of the system is to make co-ordination of mine action more efficient, timely and priority based. The system was developed by the center for security studies at the Swiss Federal Institute of Technology (ETH) in Zurich under the management of Geneva International Center for Humanitarian Demining (GICHD).

In 1998 it was introduced to Sri Lanka. The IMSMA database is centralized at the national level and data entry takes place in the DMAO and the Mine Action division of the UNDP Colombo office.

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[3] DMAO functions are organized under 'cells' of activity of which IMSMA operation is one.

The system can be accessed through Wide Area Network (WAN) terminals in the key locations. There are also large scale printing equipment in these locations to enable printing of large maps. These key locations are;

- DMAO – Jaffna and Vavunia
- RMAO – Kilinochchi (Planned)
- Prime Minister's office – Colombo (Planned)
- UNDP Mine action division

The initial versions of the IMSMA (release 01 and 02) did not have a MRE component built in to the system. However, with the introduction of the release 03 in 2003, it was incorporated. Sri Lanka is the first country to have used IMSMA with MRE.

IMSMA together with all the agencies involved in mine action, have formulated a set of forms which are used as source documents for data entry. These forms are filled out by the agencies involved in mine field marking, de-mining and MRE as and when they progress with their activities. The forms are submitted to the IMSMA operators in Jaffna and Vavuniya DMAO office weekly and data entry takes place soon afterwards. As such the system and the data input structure is geared to enable generation of up to date information to all stake holders including general public.

However, there are few draw backs in the system. One is that lack of clarity in terms used in the questionnaire such as "young person" or "adult", giving rise to the possibility of varied interpretations of these terms by different parties involved.

The MRE information outputs of the IMSMA system are usually organized and analyzed under following categories.

- By districts (eg. Jaffna, Kilinochchi etc)
- By implementing agencies (eg. TRRO, Sarvodaya, WP, MAG etc.)
- By type of intervention (eg. Presentation, Drama etc.)
- By age of participants (four categories)

(Refer annex l for sample MRE report generated from IMSMA)

3. Chapter Three: Community and Household Responses to MRE

This chapter primarily presents findings of the HH survey covering a random sample of 360 households drawn from three project areas in Jaffna, two in Vanni and one non-project area nevertheless characterized by mine risks. Using results of the sample survey, this chapter analyzes background information about the study population, sources of information about landmines and UXOs, knowledge about landmines, risk assessment about mines and UXOs, risk prevention behaviour and prevalence of mine injuries. This analysis is aimed at identifying the impact of project interventions on knowledge, attitudes and practices among the beneficiary population in relation to reduction of mine risks and ultimately reduction of mine injuries. The Information provided from table 5 to table 21, is from the study survey of 360 households in Jaffna and Vanni. In addition, qualitative information gathered from key informant interviews have also been used in understanding community responses to MRE tools.

3.1 Demographic profile of survey community

Table 05: Ethnicity of HH by DS division

Ethnicity	Name of DS Division													
	Chavakacheheri		Nallur		Chankanai		Pachchilaipalli		Karachchi		Total		CONTROL Morawewa	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sinhala	0	0	0	0	0	0	0	0	0	0	0	0	27	45.0
Tamil	60	100	60	100	60	100	60	100	60	100	300	100	22	26.7
Muslim	0	0	0	0	0	0	0	0	0	0	0	0	11	18.3
Total	60	100	60	100	60	100	100	0	100	0	300	100	60	100.0

In terms of ethnic composition all the households surveyed in the study areas distributed in the Districts of Jaffna and Kilinochchi were Tamil. In contrast, the control area in the Trincomale District was multi-ethnic, with a predominance of Sinhala, followed by Tamils and Muslims.

Table 06: Sex of respondents by DS division

Sex	Name of DS Division

	Chavakach cheri		Nallur		Chankanai		Pachchill-aipalli		Karachchi		Total		CONTROL Morawewa	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Male	25	41.7	33	55.0	25	41.7	31	51.7	28	46.7	142	47.3	41	68.3
Female	35	58.3	27	45.0	35	58.3	29	48.3	32	53.3	158	52.7	19	31.7
Total	60	100.0	60	100.0	60	100.0	60	100.0	60	100.0	300	100.0	60	100.0

There were roughly equal participation of men and women in the survey. However, the gender representation varied with a higher participation of women in Chavakachcheri and Chankanai and lower participation of them in Morawewa.

Table 07: Occupation of head of household by DS division

Occupation	Name of DS Division													
	Chavakach cheri		Nallur		Chankanai		Pachchillai palli		Karachchi		Total		CONTROL Morawewa	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Daily labor	2	3.4	1	1.8	0	0	11	20.4	16	27.1	30	10.7	5	8.5
Skilled	3	5.2	9	15.8	16	30.8	4	7.4	5	8.5	37	13.2	0	0
Small trader	6	10.3	10	17.5	5	9.6	2	3.7	1	1.7	24	8.6	5	8.5
Farming	27	46.6	2	3.5	5	9.6	31	57.4	32	54.2	97	34.6	31	52.5
Fishing	0	0	0	0	9	17.3	0	0	1	1.7	10	3.6	0	0
Government	9	15.5	20	35.1	6	11.5	0	0	1	1.7	36	12.9	15	25.4
NGO	1	1.7	4	7.0	3	5.8	3	5.6	2	3.4	13	4.6	0	0
Housewife	10	17.2	10	17.5	8	15.4	3	5.6	1	1.7	32	11.4	3	5.1
Other	0	0	1	1.8	0	0	0	0	0	0	1	0.4	0	0
Total	58	100.0	57	100.0	52	100.0	54	100.0	59	100.0	280	100.0	59	100.0

In the households surveyed in the study areas, farming was the main avenue of employment (34.6%), followed by skilled employment (13.2%), government employment (12.9%), and wage labor (10.7%). Government employment and small business were particularly significant in the urban Division of Nallur. In the two Vanni divisions, daily wage labor constituted the second most important avenue of employment after farming. Fishing and skilled labor were important in the Chankanai Division in the Jaffna District. In Morawewa (the Control area) in the Trincomale District farming was the most important source of livelihood followed by government employment. The prevalence of government employment in Morawewa was due to the fact that a large number of adult males in this Division were employed as home guards. In the areas studied 35% or more of the respondents were engaged in occupations related to land, such as farming. This is of particular importance since, this group can be considered a "high risk" group in relation to mines, for instance if new land requires clearing for farm related activities.

Table 08: Status of Residence by DS division

Occupation	Name of DS Division													
	Chavakachcheri		Nallur		Chankanai		Pachchillaipalli		Karachchi		Total		Control Morawewa	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Never Displaced	0	0	2	3.3	3	5.3	0	0	0	0	5	1.7	46	76.7
Resettled	56	93.3	54	90.0	49	86.0	60	100.0	59	98.3	278	93.6	14	23.3
Relocated	3	5.0	3	5.0	3	5.3	0	0	1	1.7	10	3.4	0	0
With relatives	1	1.7	1	1.7	2	3.5	0	0	0	0	4	1.3	0	0
Total	60	100.0	60	100.0	57	100.0	60	100.0	60	100.0	297	100.0	60	100.0

The sample consisted largely of resettled people who comprised a total of 93.6% of all households in the study areas. This again highlights the vulnerability of the population to mine risk since they need to be familiarized with land areas with high mine density. Of the six divisions covered in this survey, only Morawewa (control area) had a majority of never displaced people. In the study areas in Jaffna and Vanni, nearly the entire population had been displaced due to the war at one time or another.

The mean age of the respondents was 38.3 years. It ranged from 36.2 in Chavakachcheri to 40.2 in Nallur. Mean number of years of schooling per respondent was 8.7. The highest mean education level of 10. 92 was reported in Nallur, followed by 10.14 in Chavakachcheri, 9.57 in Chankanai, 8.17 in Pachchilaipalli, 6.79 in Karachchi and 6.5 in Morawewa. By comparison on average the number of schooling years for Sri Lanka as a whole is 11 years (Up to General Certificate of Education - Ordinary Level).

3.2 Prevalence of Mine Injuries

Prevalence of mine related injuries in a given area may be seen as a function of the level of mine risk in that area, determined by density and distribution of mine fields, as well as extent to which people actually avoid risky behaviours. A total of 17 households in the entire sample reported mine-related injury since the armed conflict began. i.e since mid 1980's. Distribution of these households by DS division is given in Table 09.

Table 09: Prevalence of Mine-related Injury in HH by DS Division

Injuries	Name of DS Division													
	Chavakach cheri		Nallur		Chankanai		Pachchillai palli		Karachchi		Total		Control Morawewa	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Injured	2	3.3	2	3.3	0	0	0	0	3	5	4	1.3	10	17.2
Not injured	58	96.7	58	96.7	60	100.0	60	100.0	57	95.0	296	98.7	48	82.8
Total	**60**	**100.0**	**60**	**100.0**	**60**	**100.0**	**60**	**100.0**	**60**	**100.0**	**300**	**100.0**	**60**	**100.0**

The highest prevalence of mine-related injury (10 out of total of 17 injuries) was reported in Morawewa, the control village. The prevalence of mine-related injury in the control area was 17.2% as against 1.3% for all the study areas that had participated in MRE. This difference was found to be statistically significant at .01 significance level.[4]

This clearly suggests that participation in MRE tends to protect people against mine-related injury. Both in study and control areas there is a tendency towards decline in prevalence of mine related injury in more recent years with 12 out of the 17 reported injuries occurring in 1998 or before. Only 1 reported injury occurred in 2002. That occurred in Chavakachcheri and may be attributed to large-scale return of IDPs to their heavily mined original villages following the signing of MOU in February 2002.

However, IMSMA statistics relating to injuries indicate that incidents occurring after 1998 were much higher in the study areas than the control area (Refer annex l). This could be a result of the fact that the conflict was far more intense in the study areas prior to 1998.

On the whole the data indicate that;
> a. a majority of mine injuries has been reported from the control area which was not covered by mine action

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[4] Pearson's Chi-square value=23.882, Likelihood ratio=17.019, Sig=.00

and

    b. in the areas covered by mine action including MRE, the incidents reported mostly predate the inception of MRE.

This bears clear evidence to the fact that a rapid escalation of mine injuries due to population movement following the initiation of the peace process has been prevented by successful mine action, inclusive of MRE activities.

Households surveyed were also asked if they knew of any mine injuries within their communities. This yielded information about a further 36 injuries out of which 18 and 9 were recorded in Nallur and Morawewa respectively. Many of these events also occurred in the pre 1998 era, suggesting that there has been a progressive decline in mine injuries since 1998 in all areas, including the control area. These trends are also in keeping with macro level trends in mine injury discussed elsewhere in this report. While the decline in reported incidence in Morawewa suggests that there may be other important factors besides MRE impacting on this reported decline, it must be noted here that the reported decline in mine injury in Vanni and Jaffna occurred against a context in which there was a significant population movement into mine-infested areas particularly after February 2002.

3.3 Sources of Information about Landmines and UXOs

Respondents were asked to specify the source from which they 'heard' about land mines and UXOs. The resulting data are given in Table 10.

Table 10: Sources of information about mines by DS division
       (Percentage of Households Reporting Each Source)

Source	Name of DS division						
	Chavakach cheri %	Nallur %	Chankanai %	Pachchillai palli %	Karachchi %	Total %	Control Morawewa %
Friends/Relatives/Neighbours	20.0	55.0	45.0	43.3	53.3	43.3	6.7
MRE presentation	3.3	5.0	0	15.0	15.0	7.7	18.3
School	3.3	10.0	3.3	21.7	18.3	11.3	0
Children	0	1.7	0	5.0	3.3	2.0	1.7
Drama	0	0	0	23.3	3.0	5.7	0
Handbills/brochures	3.3	13.3	3.3	8.3	3.3	6.3	0
Posters/billboards	36.7	20.0	5.0	6.7	11.7	16.0	3.3
Radio and TV	11.7	9.0	1.7	8.3	20.0	9.3	43.3

Newspaper	41.7	61.7	11.7	6.7	11.7	26.7	11.7

Note: More than one source of information could be mentioned by a respondent

There were considerable differences among the study areas themselves as well as between study and control areas in regard to the reported sources of information about mines and UXOs. Friends/relatives and neighbours were identified (43.3%) as the leading source of information about mines and UXOs in the study areas, followed by newspapers (26.7%), posters and billboards (16.0%) and school (11.3%). In Morawewa, the control area, radio and TV (43.3%) were the leading source of information, followed by community-based training (18.3%) and newspapers (11.7%).
The reported community-based training about landmines in Morawewa was part of a home guard training[5] received by a considerable number of local participants in this survey. On the other hand, the project interventions like school-based programmes, posters and billboards, handbills and brochures and drama are clearly mores significant in the study areas, even though they are not necessarily a leading source of information about mines.

The higher significance of friends as a source of information in the study areas can be interpreted in at least two different ways. Firstly, it suggests that interpersonal channels are an important source of information about mines for many people even in areas where mine action, including MRE, takes place. Secondly the survey was conducted during daytime hours when a majority of the employed members of households were away from homes. Therefore, it can be inferred that it is these employed household members who often actively receive MRE. Therefore, majority of the survey respondents are likely to have been secondary recipients of MRE.

Mass and small media is important as a useful first source of information about mines in both study and control areas. Radio and TV appear to be more significant source of information about mines in the control area in the absence of other reliable sources.

Printed sources like newspapers, posters and billboards and handbills tend to be more important in the study locations in the Jaffna District as compared to study locations in Vanni. This is in keeping with the reported higher levels of education in the Jaffna study locations. On the other hand, project interventions like school-based activities and drama were more frequently reported in Vanni, suggesting that such interventions may be more popular and perhaps more effective in the LTTE controlled areas.

Pachchilaippalli and Karachchi, both located within Vanni were the only divisions where the full range of interventions in MRE programmes were reported to varying degrees. While some project interventions (community and school-based training) were reported to a similar extent in both divisions in Vanni, others, such as drama, were less prevalent in Karachchi.

Of the different project interventions, posters and billboards appear to be the most effective in reaching people, followed by school-based activities, training, handbills, brochures and drama. Posters and billboards were more significant in the Jaffna Peninsula, in keeping with reported higher literacy levels in the area. On the other hand, school-based programmes and drama were relatively

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[5] Military training given by GOSL to community members to serve as guards of own village, in villages under threat of war.

more significant in Vanni, where adult literacy rate was low and the general level of information flow was far more restricted.

On the whole, reported frequency of contact with specialized MRE information was in keeping with the MRE intervention level. However, as far as reported sources of information are concerned, the importance of the UNICEF project as a source of MRE information appears to be greater in Vanni region compared to the selected Jaffna locations. We have to interpret this finding bearing in mind that Jaffna has been more open to information flow from then outside world compared to Vanni where the contact with the outside world still remains within certain limits. Furthermore, the home guard training in Morawewa which contained some information about landmines and UXOs must also be seen as an additional complication in interpreting the results of the survey.

3.4 Knowledge about Landmines

In this study, knowledge about landmines was assessed in relation to the following aspects:

I. Familiarity with landmines/UXOs
II. Risk assessment

Familiarity with Landmines/UXOS

The HH questionnaire sought to assess the level of familiarity with landmines/uxos. The questions probed into whether they had: "seen or heard" about mines/UXOs; if so what "types" of mine; and where they have seen those.

A total of 98.7% of the respondents had heard about mines including UXOs. Of the project sites, the entire samples in Chavakachcheri (high intensity) and Nallur (moderate intensity) reported having heard about mines while other three divisions including the high intensity Pachchilaippali reporting slightly lower levels of knowledge in this regard. Interestingly the entire sample in the control area (Morawewa) also reported having heard about mines/UXOs. There was no statistically significant difference between study areas and the control area in regard to the percentage that had heard about mines.[6] This suggests that acquaintance with landmines/uxos is more a function of the presence of such objects in the local area than one of exposure to MRE per se.

Table 11: Information on mines by level of intervention

	Level of intervention								Control	
	High		Moderate		Low		Total		No MRE	
	No.	%	No.	%	No	%	No.	%	No.	%
Heard about mines	118	98.3	60	100.0	116	96.7	294	98.0	60	100.0

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[6] Pearson's Chi-square value= 1.22, Likelihood ratio=2.208, sig=.332

Not heard	2	1.7%	0	0	4	3.3	6	2.0	0	0
Total	120	100.0	60	100.0	120	100.0	300	100.0	60	100.0

Table 12: Information on mines by DS Division

	Name of DS Division													
	Chavakacheri		Nallur		Chankanai		Pachchillai palli		Karachchi		Total		Control Morawewa	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Heard about mines	60	100.0	60	100.0	59	98.3	58	96.7	57	95.0	294	98.0	60	100.0
Not heard	0	0	0	0	1	1.7	2	3.3	3	5.0	6	2.2	0	0
Total	60	100.0	60	100.0	60	100.0	60	100.0	60	100.0	300	100.0	60	100.0

There was no significant difference between male and female respondents regarding the percentage who had heard about mines.[7] The pattern varied only slightly by age or education level of the respondent, with younger and more educated reporting a higher rate of having heard about mines. Percentage who had heard about mines did not show any consistent variation according to occupation of respondents.

Table 13: Visual impression of mines by level of intervention

	Level of intervention								Control	
	High		Moderate		Low		Total		No MRE	
	No.	%	No.	%	No,	%	No.	%	No.	%
Seen mines	39	32.5	14	23.7	21	17.5	74	24.8	26	44.1
Not seen	81	67.5	45	76.3	99	82.5	225	75.2	33	55.9
Total	120	100.0	59	100.0	120	100.0	299	100.0	59	100.0

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[7] Pearson's Chi-square value= 0.002, Likelihood ratio=0.002., sig=.642

Nearly 25% of the sample reported having seen mines. As expected, the percentage of respondents having seen mines was highest in high intensity project sites, followed by moderate and low intensity sites. This variation among project sites was in keeping with the expected pattern. However once again control area reported the highest percentage of respondents having seen mines, indicating that in this particular instance familiarity with mines is more of a function of availability and density of minefields rather than one of exposure to MRE.

Of the DS divisions covered by the study, the high intensity Pachchilaippalli reported the highest percentage of those who had seen mines, followed by Morawewa, Karachchi, Nallur and Chavakachcheri. Interestingly no one in the low intensity area of Chankanai reported seeing mines. On the whole, familiarity with mines tend to be higher in Vanni compared to Jaffna. The percentage having seen mines in Jaffna was 11.7 as against 44.17 in Vanni. This difference was statistically significant at .01 level.[8] This in turn reflects the greater intensity of the conflict in Vanni in more recent years.

Table 14: Visual Impression of mines by DS Division

	Name of DS Division													
	Chavakach cheri		Nallur		Chankanai		Pachchillai palli		Karachchi		Total		Control Morawewa	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Seen mines	7	11.7	14	23.7	0	0	32	53.3	21	35.0	74	24.6	26	44.1
Not seen	53	88.3	45	76.3	60	100.0	28	46.7	39	65.0	226	75.3	33	55.9
Total	60	100.0	60	100.0	60	100.0	60	100.0	60	100.0	300	100.0	59	100.0

In the sample 39.2% of male as against 16.4% of female respondents reported having seen mines. This difference was statistically significant at .01 level.[9] This finding suggests that due to occupational reasons and greater outdoor experience, men are more likely to see mines and UXOs. Of the different occupational categories, farmers had seen more mines compared to waged laborers, fishermen and skilled workers. Even though, the observed difference, was not statistically significant, the finding highlights the higher risk associated with farming in these locations.

Of the various age groups, 18-35 age group reported the highest frequency of seeing mines, followed by the next age group (36-55). Education level did not show any clear relationship to the frequency of having seen mines.

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[8] Pearson's Chi-square value= 40.58, Likelihood ratio=40.46, sig=.00
[9] Pearson's Chi-square value= 12.37, Likelihood ratio=12.47, sig=.00

As to the type of mines/UXOs seen, Jony 95 was the most frequently cited type of land mine, followed by shells, claymore mines and mortars.

In relation to the number of mine/UXO types identified by the participants, the mean number of types identified was highest in the control area (1.07), followed by 0.6 in high intensity, and 0.4 in both moderate and low intensity areas. The mean number of types actually seen was highest in Morawewa (1.07), followed by Pachchilaippalli (1.03), Karachchi (0.82), Nallur (0.42) and Chavakachcheri (0.23). This also indicates that even though not exposed to formal MRE, familiarity with landmines was quite high in Morawewa, because they had seen mines/UXOs in real life.

The mean number of types identified by male respondents was 0.92 as against 0.26 for female respondents. This difference, however, was not statistically significant.[10] Of the diverse employment categories, the mean number of types identified was highest for government employees (1.8) and NGO workers (1.0), followed by small businessmen (0.92) farmers (0.61) skilled workers (0.1) wage laborers (0.03) and lowest for fishermen (0)

Education level did not have any clear relation to the mean number of types seen.

Table 15: Location of sighting mine by DS division

Location	Name of DS Division												
	Chavakach cheri		Nallur		Chankanai		Pachchillai palli		Karachchi		Total		Control Morawewa	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Home areas	4	50.0	9	60.0	1	100.0	4	12.5	5	27.8	23	31.1	3	11.5
Forest	0	0	0	0	0	0	13	40.6	2	11.1	15	20.3	3	11.5
Field	4	50.0	0	0	0	0	5	15.6	3	16.7	12	16.2	1	3.8
Roadside	0	0	0	0	0	0	2	6.3	1	5.6	3	4.1	0	0
Abandoned camps	0	0	6	40.0	0	0	8	25.0	3	16.7	17	22.9	19	73.1
Other	0	0	0	0	0	0	0	0	4	22.2	4	5.4	0	0
Total	**8**	**100.0**	**15**	**100.0**	**1**	**100.0**	**32**	**100.0**	**18**	**100.0**	**74**	**100.0**	**26**	**100.0**

The respondents who had seen mines (24.6% of the respondents) were asked to specify the site where landmines/UXOs were seen. In the project areas, house sites and home gardens were reported as the sites where they were most frequently seen, followed by abandoned military sites, forest, and fields. In the control area, abandoned military sites, including suspected LTTE sites, were most

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[10] Anova F=0.048, Sig. =.828

important followed by forest and home areas. As expected, forest was more important in Vanni areas while home garden (and sometimes field) tended to be more important in the Jaffna District. The range of places where mines were detected was more diverse in the Vanni area as compared to the Jaffna District.

It was found that people's level of familiarity with landmines and UXOs was influenced by the availability of mines/UXOs and related instances of mine accidents in the local area as well as by their participation in the MRE programmes.

Risk Assessment

Risk assessment/awareness indicates the extent to which the target population is aware of the risks associated with landmines/UXOs. In this survey, risk awareness was examined through a variety of direct and indirect questions relating to their perceptions on the primary dangers associated with the mines/UXOs.

In order to explore the level of risk awareness among the respondents, the question "Are mines/UXOs always harmful?" was raised. The responses are given in table 16 below.

Table 16: Perceptions on mine harmfulness by level of intervention

Perception	Level of intervention								Control	
	High		Moderate		Low		Total		No MRE	
	No.	%	No.	%	No,	%	No.	%	No.	%
Always harmful	88	73.3	56	93.3	79	65.8	223	74.3	16	26.7
Often harmful	26	21.7	4	6.7	24	20.0	54	18.0	25	41.7
Sometimes harmful	6	5.0	0	0	17	14.2	23	7.7	16	26.7
Rarely harmful	0	0	0	0	0	0	0	0	2	3.3
Never harmful	0	0	0	0	0	0	0	0	1	1.7
Total	120	100.0	60	100.0	120	100.0	300	100.0	60	100.0

The message emphasized in MRE is that mines are always harmful. A total of 74.3% of the respondents stated that the mines/UXOs are always harmful while another 18% saw them as often harmful. Percentage reporting mines/UXOs as always harmful was lowest in the control area as against all project areas. The difference between project areas and control area in respect to this variable was statistically significant at 01.level.[11]

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[11] Pearson Chi-square=54.56, Likelihood ratio=50.51

The higher percentage of persons providing the correct answer in project areas, is a direct outcome of MRE being implemented in those areas as against the control area. Percentage identifying these explosives as always harmful was highest in the moderate intensity project area, followed by high intensity and low intensity areas. Some special background factors in the moderate area to be discussed later may explain this deviation from the expected pattern.

Table 17: Perceptions on mine harmfulness by DS division

Perception	Name of DS Division													
	Chavakach cheri		Nallur		Chankanai		Pachchillai palli		Karachchi		Total		Control Moraweva	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Always harmful	45	75.0	56	93.3	44	73.3	43	71.7	35	58.3	223	74.3	16	26.7
Often harmful	15	25.5	4	6.7	16	26.7	11	18.3	8	13.3	54	18.0	25	41.7
Sometimes harmful	0	0	0	0	0	0	6	10.0	17	28.3	23	7.7	16	26.7
Rarely harmful	0	0	0	0	0	0	0	0	0	0	0	0	2	3.3
Never harmful	0	0	0	0	0	0	0	0	0	0	0	0	1	1.7
Total	60	100.0	60	100.0	57	100.0	60	100.0	60	100.0	297	100.0	60	100.0

When the DS divisions covered by the study are compared, the harmfulness of these explosives is least understood in Morawewa, the control area currently not covered by any MRE programmes. In all the other areas risk awareness was relatively high, even though it does not necessarily vary with level and intensity of project interventions. This may be partly attributed to differences in socio-economic background in project areas. Although Nallur is a moderate intensity intervention area, it reported the highest risk awareness and it is the most urban of the DS divisions covered. This division has a relatively higher educational levels (mean number of school years for respondent in Nallur was 10.92 as against 10.14 for Chavakachcheri) and correspondingly higher participation in government and NGO employment (42.1% of HHs in Nallur worked in Government or NGO sectors as against much lower rates in other study areas).

The finding that a statistically significant higher percentage of respondents in the MRE areas consider mines to be always harmful compared to those in control area, is a strong indicator of the success of MRE.

As regards gender difference, 91% of female respondents identified mines/UXOs as always or often harmful as against 85.8% of male respondents. This difference was statistically non significant.[12] Risk awareness tended to be higher among the younger and the more educated, even though the difference was not of statistical significance.

Only some of the households provided specific responses to the question, "What can mines/UXOs do to you?" Responses to this question are given in Table 18.

Table 18 : Perceived Potential Risk of mines by DS division

Potential risk	Name of DS Division													
	Chavakach cheri		Nallur		Chankanai		Pachchillai palli		Karachchi		Total		Control Morawewa	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Can kill	0	0	7	11.7	5	8.3	3	5.0	6	10.0	21	7.0	36	61.0
Can maim	46	76.7	14	23.3	23	38.3	3	5.0	9	15.0	95	31.7	1	1.7
Can kill or maim	13	21.7	37	61.7	27	45.0	54	90.0	45	75.0	176	58.7	18	30.5
Other	0	0	2	3.4	4	6.7	0	0	0	0	6	2.0	4	6.7
Do not know	1	1.7	0	0	1	1.7	0	0	0	0	2	0.6	0	0
Total	60	100.0	60	100.0	60	100.0	60	100.0	60	100.0	300	100.0	59	100.0

The MRE message imparted though the programme is that mines could kill or maim. Those in project areas tended to have a more accurate and a more realistic risk assessment, reflecting the influence of MRE. Of those in the project areas, 58.7% correctly identified that 'mines could kill OR maim'. This level of discerning skill rose as a result of MRE which lucidly explains the dangers associated with mines/UXOs which could vary from killing to maiming. Interestingly, the highest percentage reporting that mines can kill you came from Morawewa, while in the project areas many respondents reported that mines/UXOs can kill or maim you or simply maim you. The response of Morawewa participants in the survey may also signify a tendency not to identify the risk of getting maimed as the more common danger in the case of landmines/UXOs. The singular response mines can maim you was more frequently reported in the Jaffna District.

Similarly females tended to have a more realistic outlook to mine risk assessment compared to the males. Risk assessment also tended to be more informative with increased level of education. However, neither of these differences was found to be statistically significant.

When the respondents were asked to identify ways in which mines/UXOs explode, stepping on them was identified as the commonest way in which they explode, followed by throwing things at them

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[12] Pearson's chi-square=0.022, Likelihood ratio=0.022, Sig=.989

and their movement. Stepping on the mines was correctly identified as the commonest method of getting injured by them in all the DS divisions covered by the study, including the control area.

Respondents identified up to seven correct methods in which mines explode. The mean number of methods identified in the whole sample was 2.03. The mean number of methods identified was 2.75 in Pachchilaippalli, 2.48 in Karachchi, 1.97 in Nallur, 1.88 in Morawewa, 1.63 in Chavakachcheri and 1.48 in Chankanai. The mean number of methods identified in the study area was 2.06 as against 1.88 in the control area. This difference, however, was not statistically significant.[13]
People in Vanni tended to correctly identify more methods of explosion compared to those in Jaffna perhaps indicating either a difference in the types of interventions / content of MRE in the two areas or a difference in the level real life encounters with explosions.

Also, respondents in the control area were able to identify the highest number of methods of explosions, compared to those in two project areas in the Jaffna District. This could either be a result of home guard training, or real life encounters with explosions.

The number of methods correctly identified was slightly higher among males compared to females and it also increased with level of education, but none of these differences was statistically significant.

In the survey the respondents were asked to specify the 'activities adversely affected' by the mine problem in their respective areas. Most of the respondents (48.1%) mentioned farming, followed by house construction (31.4%), animal husbandry (21.7%) and firewood collection (9.2). Among the activities adversely affected by mines and UXOs, farming was most widely reported in Morawewa, followed by Pachchilaippalli, Chavakachcheri and Karachchi. House construction was most widely reported by Pachchilaippalli followed by Morawewa and Karachchi. Difficulty in firewood collection due to mines was mentioned by a significant number only in Morawewa. Mines were identified as a significant problem for fishing only in Chankanai. Pachchilaippalli, Karachchi and Chawakachcheri experienced problems for livestock raising due to mines. Only Pachchilaippalli identified mines as a significant problem for mobility of people and child play. The findings indicate that mines are perceived as major constraint to livelihoods in all areas including the control area.

When respondents were asked to list activities that made them personally 'most vulnerable to mine risks', house construction was the most frequently mentioned activity (35.3%), followed by garden clearing (29.7%), coconut collection (25.3%), farming (22.2), grazing (13.6%) and firewood collection (12.25). House construction was mentioned as the most mine risk prone activity in Karachchi, followed by Pachchilaippalli and Nallur. Farming was identified as a leading cause of mine injury in Morawewa, followed by Chavakachcheri. Karachchi, Pachchilaippalli and Chavakachcheri identified garden clearing and coconut collection as leading causes of mine risk.
As regards gender differences in risk identification, as expected farming and fishing were more frequently identified as potential causes of mine injury by men, while garden clearing and coconut collection were more often identified as risks by women.

Trenches, abandoned houses, military posts, destroyed bridges, riverbanks, water points, bunds, shorelines, animal skull and remains , damaged vehicles, known previous accident sites, former battle areas, remains of ammunitions and vacated military camps are some of the dangerous areas emphasized through the MRE messages. The sample households identified military posts as the

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[13] Anova F value=1.230, Sig=.268

commonest place where mine/UXO dangers were present, followed by jungle and abandoned houses. As to the regional variation, military posts were identified as most dangerous sites in Pachchilaippalli, followed by Chavakachcheri and Karachchi. Shore was relatively more significant in Chankanai, while jungle was considered most dangerous from the mine risk point of view in Morawewa. As regards gender-based differences in risk identification, both males and females identified military posts as the most dangerous places. Abandoned houses were considered more of a risk by women.

Correct identification of warning signs for mines and UXOs on the part of participants was one of the expected outcomes of MRE. Red sign with a skull was the commonest marking identified in the survey (71.7% of the respondents), followed by rolled barbed wire (25.6%) and red or yellow tape (22.5%).

Table 19: Number of warning signs identified by DS division

Number of signs	Name of DS Division													
	Chavakach cheri		Nallur		Chankanai		Pachchillai palli		Karachchi		Total		Control Morawewa	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
None	3	5.2	2	3.3	12	20.0	4	6.7	4	6.9	25	8.4	26	45.6
One	15	25.9	9	15.0	12	20.0	4	6.7	5	8.6	45	15.2	8	14.0
Two	28	48.3	34	56.7	29	48.3	17	28.3	16	27.6	124	41.9	14	24.6
Three	12	20.7	15	25.0	7	11.7	35	58.3	33	56.9	102	34.5	9	15.8
Total	58	100.0	60	100.0	60	100.0	60	100.0	58	100.0	296	100.0	57	100.0

There is considerable difference among DS divisions about the number of mine/UXO warning signs that the respondents were able to identify correctly. MRE messages include introduction to a variety of warning signs such as, yellow tapes, red sign boards with skull, abandoned houses, ruins of war, remains of dead animals etc. As expected, being the control site without MRE, Morawewa had the highest percentage of respondents who did not identify a single warning sign, followed by Chankanai, the low intensity project site in Jaffna. The mean number of warning signs identified in the entire sample was 1.01. The highest mean number of warning signs identified (2.38) was in Pachchilaippalli (the high intensity site in Vanni), followed by Karachchi (2.34), Nallur (2.03), Chavakachcheri (1.84), Chankanai (1.51) and Morawewa (1.10). The difference in the mean number of warning signs identified between the study areas (2.02) and the control (1.11) was statistically significant at .01 significance level.[14] The mean number of warning signs identified by males is 2.01

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[14] Anova F value= 43.9, Sig=.00

as against 1.72 for females. This difference was statistically significant at 0.01 level.[15] The number of warning signs identified increased with education level. This difference too was significant at 0.01 level.[16]

Identification of warning signs is an objective indicator of mine risk awareness. A higher level of sign identification in the project areas bear witness to effectiveness of MRE. The inability to identify a single warning sign among 45.6% of Morawewa respondents shows that so far they have been deprived of some critical knowledge required for mine safe behaviour.

In summary, the data presented in this section indicate that MRE makes a concrete contribution towards;

- Increasing risk awareness about landmines and UXOs,
- Enhancing knowledge of practices that reduce risk and
- Increasing ability in correct identification of warning signs.

Other factors, including gender, education level and personal experience of the respondents too are also responsible for observed variation in risk perception.

3.5 Risk Avoidance Behavior

This study tried to determine the extent of risk avoidance behaviour prevalent in the population studied. MRE message in relation to this aspect is that they should avoid marked areas at all times and ensure that even domesticated pets do not enter the marked area. Keeping away from the marked/suspicious areas was the commonest response (50%), followed by taking known/used paths (48.1%), walking on middle of foot path (13.3%), asking locals about dangerous areas (6.9%) and avoiding overgrown areas (6.9%).[17] Keeping away from marked/suspicious areas was most widely reported in Pachchilaippalli followed by Karachchi and Chavakachcheri, taking used/known paths was most widely reported in Nallur, followed by Morawewa and Chavakachcheri, walking on middle of foot path was mostly reported in Pachchilaippalli, followed by Nallur and Karachchi, asking locals was mostly reported in Morawewa, Chankanai and Nallur, and avoiding overgrown areas was mostly reported in Pachchilaippalli followed by Morawewa. On the whole, it can be inferred from this data that while an inclination towards more informed risk avoidance decisions (like keeping away from marked areas) is evident in the mainstream project areas such as Pachchilaippalli and Chavakachcheri. Hence, it is evident that a majority of the respondents had received accurate MRE messages. However, in the control area and in low-intensity project sites more informal but locally grounded methods such as asking locals about dangerous areas tend to be practiced.

The mean number of risk avoidance behaviors reported in respect of walking in suspected areas for the entire sample was 1.25. The highest number of risk avoidance behaviors was reported in Pachchilaippalli (1.68), followed by Nallur (1.55), Chavakachcheri (1.28), Karachchi (1.27), Morawewa (1.03) and Chankanai (0.7). The difference in the mean number of risk avoidance behaviors reported between the study areas (1.29) and the control area (1.03), was found to be

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[15] Anova F value 7.25, Sig=.00
[16] Anova F value=10.5, Sig=.00
[17] The respondents could give multiple answers to this question. Therefore reported percentages do not add up to 100%.

statistically significant.[18] The number of risk avoidance behaviors reported increased with education level. The difference was statistically significant at 0.01 level[19] The mean number of risk avoidance behaviors reported by women (1.28) was higher compared to men (1.21), but the difference was not statistically significant.[20]

In spite of lower educational standards and living standards in the area, respondents in Pachchilaipalli (which is a high intensity area), turned out to be the most informed about a variety of risk avoidance practices. This indicates that MRE messages were correctly coined so as to cover the diverse risks to ensure risk avoidance practices in high risk areas.

The survey also attempted to examine if the respondents followed the necessary risk avoidance strategies in a situation marked by mine/UXO risk.

When they were asked what would they do if they see a new mine/UXO warning sign put up in an area used by them, the commonest response given was "go and tell others" (47.4%), followed by "continue traveling avoiding the marked area" (33.4%) and "do not proceed" (18.1%). "Do not proceed" was by far the commonest response in Morawewa (76.7%). On the other hand "go and tell others" or "continue traveling avoiding the marked area" was the commonest response in all other areas. "Go and tell others" was more widely reported in the three Jaffna sites, namely Chavakachcheri (83.3), Chankanai (71.7%) and Nallur (59.3%) as compared to Pachchilaippalli (43.3%) and Karachchi (26.6%).

When the respondents were asked what would they do if they actually see a mine or UXO from a safe area, the commonest answer given was "go and tell a friend or a neighbour" (36.7%), followed by "go and tell a demining/MRE agency (33.3%), "go and tell local authorities (24.2%), "run away" (18.6%) and "mark the spot" (18.2%). How responses to this question varied by DS division is presented in Table 20.

The above responses in relation to seeing mines/UXOs/mine field markings etc. from afar, is consistent with the MRE message imparted, where they are told to remember the location of the mine and call for help.

Table 20: Responses to accidental discovery of mines by DS division

Response	Name of DS Division													
	Chavakach cheri		Nallur		Chankanai		Pachchillai palli		Karachchi		Total		Control Morawewa	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Run away	0	0	23	38.3	19	31.7	7	11.7	16	26.7	65	21.7	2	3.3

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[18] Anova F=5.479, Sig. =.020
[19] Anova F=13.88, Sig=.00
[20] Anova F=0.679, Sig=0.411

Continue	0	0	6	10	2	3.3	3	5.0	6	10	17	5.7	7	11.7
Tell friend/neighbour	28	46.7	30	50.0	37	61.7	5	8.3	13	21.7	113	37.7	19	3.8
Tell local authority	16	26.7	18	30.0	16	26.7	1	1.7	5	8.3	56	18.7	31	51.7
Tell de-miners/MRE	12	20.0	17	28.3	6	10	44	73.3	40	66.7	119	39.7	1	1.7
Tell parents	5	8.3	0	0	0	0	1	1.7	1	1.7	7	2.3	1	1.7
Mark the spot	20	33.3	21	35.0	19	31.7	3	5.0	3	5.0	66	22.0	0	0
Take to police	0	0	1	1.7	4	6.7	0	0	0	0	5	1.7	0	0

Note: As respondents could give multiple responses to this question, categories are not mutually exclusive and percentages refer to each response as a percentage of total sample size in each location, namely 60.

A considerable variation was discovered, in the response to the question on accidental discovery of mines, among various DS divisions. Only in Pachchilaippalli and Karachchi "informing demining authority or MRE agency" was cited as the most frequent response. As expected, informing demining/MRE agency was least common in Morawewa, with only one person reporting this option. Informing friends or neighbours was the commonest response reported in all three DS divisions covered in the Jaffna District, followed by marking the spot. Informing friends or neighbours was not a preferred option in Vanni, in keeping with the earlier observation that community trust may be weaker in Vanni. The risky option of "continuing to travel avoiding suspicious area" was mostly reported in Morawewa, followed by Karachchi and Nallur. Even more risky option of taking the mine to the police was reported by four people in Chankanai and one person in Nallur. In Morawewa, the commonest option noted was informing local authorities, followed by informing friends and neighbours. On the whole the responses were in keeping with options available in each area.

The message given in relation to recommended course of action when a mine is discovered, is that they should not tamper with it but rather inform authorities involved in mine action. Respondents in Vanni were better impacted with MRE in this regard. Here again, the risky behaviour demonstrated in the control areas highlights their lack of access to vital life saving information disseminated via MRE.

Gender or the education level of the respondent did not show any clear relationship to responses to the above question.

When asked to describe what would they do if they thought they were inside a minefield or near a mine, the commonest response given was retracing steps carefully (44.2%), followed by go to a safe area (27.5%) and stop and shout (21.1%). It is interesting that Morawewa reported the highest frequency of the last option (35.4%), also seen as the safest option in this instance. The other divisions reporting a relatively high frequency of the relevant option were Nallur (32.2%) and Chavakachcheri (26.7%). Until 2002, at the early stages of MRE in Unicef, the message given was to back tract steps or retrace steps. Therefore, the fact that a higher percentage of respondents in the

project area declared that they would back track steps, denotes the spread of an early MRE message. However, this message was withdrawn during 2003 and was replaced by the message that they should 'stay on spot and call out for help'. The extent of the dissemination of the changed message is low since the change was only effected in 2003.

In one of the questions asked in the survey, the respondents were asked what would they do if they see a friend or a family member lying injured in a minefield. The MRE message taught was that competent help should be called for in such situations. The commonest response reported was "go and tell somebody" (39.4%), followed by "run to help" (25.8%) and "run away" (18.6%). The two Vanni divisions, namely Pachchilaippalli and Karachchi, came first and second in reporting "get an expert deminer" in response to this question, once again showing the possible significance of MRE centres in local areas. On the other hand, the more dangerous response of running to the assistance was also reported more frequently in the same two Vanni divisions. Only one person responded to this question in Morawewa and he reported that he would run to the help of the injured.
While respondents in Vanni were fully aware of this message as statistics above indicate, perhaps the difficulties in transportation, medical care and communication in the region, prompt them to run to the assistance of the victim instead of waiting too long for help.

A total of 9 households in the sample acknowledged that there is/was unauthorized demining in their own locality. Of these households, 5 came from Nallur, 3 came from Morawewa and one from Karachchi in Vanni. All the reported instances of illegal demining in Nallur occurred prior to 1998. The one in Karachchi occurred in 2000. The three reported instances in Morawewa occurred 1998, 2001 and 2003. This suggests that with the introduction of official demining and MRE illegal demining has decreased even though it may be still occurring to a lesser extent in mine-infested areas not or inadequately covered by MRE. Nallur being the most populous and the economically progressive area studied, it is evident that residents in the division may have resorted to procuring paid labour to de mine their private properties.

In summary results of the HH survey shows that there are several ways in which respondents from the mainstream project areas reported safer behaviors compared to those from other areas. They relate to judgments about safer courses of action when confronted by mine risks, proper response to warning signs and a greater tendency to seek professional advice and services in dealing with the mine problem. The study also shows that the reported behaviours are very much region and sub-region specific and that in MRE, recommended safe behaviours must be identified through a proper assessment of the ground situation in each area.

Familiarity with landmines varied according to level of MRE interventions as well as presence of minefields and mine accidents in local areas. As regards risk assessment, there is a greater tendency towards informed decision making in the project areas compared to the control area. Response from the control area indicated both inadequate risk awareness and exaggerated risk perception in different contexts. Similarly, in the absence of mine action including MRE, people in Morawewa were least able to identify mine/UXO warning signs. In many respects, risk avoidance behaviours too were less widely reported in the control area. Similarly they were more inclined to pursue inappropriate and even risky behaviours when confronted by a mine or UXO and a relevant warning sign. Unauthorized demining was also reported in the control area. On the other hand, contrary to the expected pattern, they were more inclined to pursue appropriate risk avoidance behavior in some emergency situations like accidentally walking into a minefield. Finally, the control area also reported the highest prevalence of mine injury. This is in keeping with poor and inaccurate

knowledge and greater prevalence of risky and inappropriate practices. On the whole, in spite of the greater familiarity with landmines and UXOs evident in the control area, they tend to be more vulnerable to landmine injuries due to lack of accurate information and absence of professional mine action in general.

As regards variation among different project sites, the picture is complicated due to marked differences between Jaffna and Vanni in relation to security environment, nature of community relations as well as due to marked differences in the implementation of the project in the two areas. In general, project interventions appear to be more intense and perhaps more focused in the Vanni area compared to Jaffna, where extraneous factors such as mass media and general educational programmes in the country may have influenced to a much greater extent.

On the whole, the variation between the two Vanni sites, namely Pachchilaippalli and Karachchi, is more consistently in keeping with the expected pattern. For instance, compared to the high intensity Pachchilaippalli, Karachchi, the low intensity site consistently reported lower exposure to professional MRE, lower risk awareness, lower prevalence of appropriate risk avoidance behaviours and a correspondingly higher prevalence of mine injuries.

The variation among the three Jaffna sites is more complicated and less consistent with the expected pattern, partly due to the fact that Nallur site may be quite different from the other two sites in view of its greater degree of urbanization, higher participation in government and NGO employment and perhaps greater strategic and military significance due to its proximity to Jaffna town. Nallur, designated as a medium intensity project site, has better indicators compared to the high intensity Chavakachcheri in respect of certain aspects of risk awareness and risk avoidance behaviours. On the other hand prevalence of mine injury among Jaffna sites was highest in Nallur, further complicating the picture. The differences between Chavakachcheri and Chankanai are more consistent with the expected pattern, even though in some respects the observed differences are of an insignificant nature.

3.6 Community Responses to MRE Tools
Key informant interviews were carried out among community leaders, selected staff of partner organizations and some specially knowledgeable persons in the intended beneficiary population in order to explore community views and responses regarding MRE tools used in the programme.

Community based tools

Community Presentations
There were reports of extremely positive responses from the communities following presentations, to the extent that the members were keen to get alongside the MRE trainers and facilitate training with minimal supervision.
The improvised technique of placing mines/UXOs in glass boxes instead of handling them during the MRE training, has resulted in giving correct signals. The danger of touching the mines/UXOs under whatever circumstances is thereby emphasized.

In order to be effective in making the beneficiaries aware of the real physical dimensions of the mines/UXOs, pictures were taken, with a 12inch/30 cm ruler or a wrist watch lying alongside the

object. As the ruler and the wrist watch were both objects with which the participants were familiar, it enabled them to perceive the real size of the objects. However, in certain instances when a wrist watch was seen placed next to a mine, it was mistakenly considered to be a timed bomb rather than a mine.

Community based drama/theatre
The key informants contacted highlighted the fact that the drama scenes and plots were subjected to changes recently following directives given by Unicef. The guideline had been to revise the format of the drama in such a way that they would not depict violence and blood shed on stage. The new approach was adopted with a view of carrying a 'positive' subliminal message. It was revealed during the key informant interviews that there was concern from some quarters the new approach may have resulted in a reduction in the impact of the tool. It was also stressed that the local subculture particularly among the children and youth, was such that they would be better impacted if there was increased animation, in the dramas.
On the whole drama was found to be a more popular mode of MRE particularly in Vanni. Drama themes which revolve around mundane activities such as farming, animal husbandry are effective in highlighting the risks associated with seemingly ordinary activities. Similarly, some communities in the coastal areas may respond to a drama based on theme revolving around fishing.

Employing mine victims for MRE training
All partner agencies have endeavored to employ mine victims as trainers and field officers where possible. A message imparted by someone who had fallen victim to a mine/UXO is far more effective when compared with a non-victim. In a particular instance where mine victims were employed in drama performances, school children who were in the audience were keen to speak to the performer after the drama to find out more details about the injury and related issues. There is definite increased authenticity to the MRE message when it is given by someone who had been a victim.

Community liaison in de-mining task areas.
Partners have been successful in facilitating the building of good rapport between the de-mining agencies and the host communities. Often the communities extend their hospitality toward de-miners by providing tea. The de-mining agencies actively seek the assistance of MRE agencies prior to starting work on a mine field. When there is co-operation between clearance and community activities, there is room for better knowledge of mine risk and thereby mine-safe behaviour is promoted.

Linkages between MRE and other Unicef interventions
Two types of linkages are found. First the linkages with other mine action activities. The MRE programme of Unicef is combined with the survivor assistance programme. Victims are assisted with cash and vocational training. When the victims are school children, they are assisted with educational material such as books. In addition, general intervention in relief, rehabilitation and development in MRE areas, often complement the MRE programme. These linkages result in increased beneficiary receptiveness toward MRE.

Situational interventions
In addition to structured and scheduled MRE programmes, special MRE efforts are also taken in response to specific one-off needs for MRE. These interventions are spontaneous and timely responses to unexpected situations and indicate the comprehensiveness of MRE outreach.

> Subsequent to the opening of the A9 road, the famous annual festival of the Madhu church took place in August 2002. Hundreds of thousands of people started pouring in from the south. Plans for special situational MRE were made. Leaflets and informational handbills were distributed at the church entrance points.

Geographic coverage of high risk areas
Jaffna peninsula is covered by all three partner agencies. All areas in Jaffna including the islands have been reached with MRE.
Work in the Vanni is implemented through 10 extension centers spread throughout the region. These centers provide a highly localized service to the communities. There are at least 3 staff members attached to each of these centers. They have evolved as an effective community based focal point for all round services related to mine action and survivor assistance.
The direct outreach of MRE is increased thereby and through ripple effect. In effect, almost all of Jaffna and Vanni has been covered.

Interventions with IDPs
The programme also successfully faced up to the challenge posed by IDP returnees. The MRE trainers carried out 'on the spot' presentations when batches of people arrived in villages. These people would then be handed with cards, which they could fill out, and request for mine/UXO removal if they were to stumble upon any such objects. These cards would then be sent to the Humanitarian Demining Unit (HDU) through the RMAO of Vanni.

Behaviours resulting from unresponsiveness to MRE
However, there have been instances where people have deliberately indulged in risky behaviors in spite of receiving MRE. Unauthorized de-mining and negligent/ risk prone behaviour patterns have been reported particularly from Jaffna.
Untrained and unskilled people attempt to clear mined areas and remove mines/UXO on their own without any supervision or guidance whatsoever. There are many reasons behind this practice.
One is the need to clear own home backyards and fertile land in order to use them for home gardening and cultivation. Out of desperation and urgency to settle down in their homes, people do not wait for the trained de-miners to clear the lands. Instead they attempt to clear the lands themselves.

> In the beginning of 2002 when the MRE commenced in Chavakachcheri, it was found that people have already removed the mines by themselves, in the Sarasaalai area.

Another reason for tampering with UXOs in certain instances was to extract Tri Nitro Toluene (TNT) explosive powder which could be sold in the open market.

> In a certain incident, which took place in Ariyalai on the 23 February 2004, two people were injured and one died. At the inquiry to the incident it was revealed that the three people had fallen victim to a UXO when they were trying to dismantle it in order to extract explosive powder.

The most prevalent cause behind the practice, is the need to turn 'de-mining' into a lucrative income generation source. A 3 feet wide pathway spanning over a length of 200 meters is usually cleared for a price ranging from Sri Lanka Rupees (SLR) 5000 to 6000. If more mines than anticipated are found, it is the 'lucky day' of the unauthorized-miner, who then could demand an increased wage or a 'contract fee'.

> In Mattuvil (Chavakachcheri) a man involved in unauthorized de-mining was confronted by MRE officers attached to WP. He is alleged to have openly stated, 'A man who is born on earth has to die one day any way. So what difference does it make if he has to die due to a mine injury? It is better to die that way than to live in poverty'. He said that he will continue to remove mines for money.

There is no legal framework applicable to unauthorized de-mining carried out by technically untrained persons at the moment. As a result MRE and de-mining agencies find that they are not in a position to impose legitimate restrictions on this practice.

Further, in some situations, it is found that in spite of several MRE programmes people still undermine the risk. Some people still find multiple usage modes for metallic remains of UXOs. There are instances where UXOs parts are being used as paper weights in schools and offices.
Houses and even some offices use shells to decorate their home gardens. Shells are lined up on the ground around flower beds. Even certain MRE agencies supported by Unicef have used shells to decorate their gardens. These UXO components are sometimes found around army camp sites. They are used around bunkers and also used for decorations around the camps/checkpoints.

Unauthorized demining is a significant challenge posed by the programme environment. However, it has to be emphasized that such instances of unauthorized demining are on the decline as proven by the household survey.

School based tools

Direct presentations in Schools
In these programmes, visual aides such as pictures of mines/UXOs are used to impart MRE to children. These graphic presentations are particularly useful and effective when working with younger children who respond to graphic messages more than written messages.

Lecturettes in schools
It was observed that when older students are gathered for MRE programmes, lecturettes are included in the presentations as they are able to comprehend the contents of a lecturette better than younger students. These lecturettes are more comprehensive in that they include background details related to mines and mine action. It is an established fact that a child's intellectual curiosity is highest from the age of about 13-18. This is also the group that usually sets the standards for 'popular norms' in schools. Therefore, an all encompassing introduction to the issue results in these senior students taking proactive role in passing the messages down to younger students.

Games and recreational activities with children

One of the activities was to design an adapted version of the age old 'Snakes and Ladders' board game known to kids all over the world. They substituted snakes with mines/UXOs while ladders were substituted with mine risk avoidance behaviour. At the top of the ladders are positive ideas related to education, health, and moral values. The board game was titled 'Mines and Ladders'. Several sets, complete with throwing dice, were produced and distributed among school children. The project was considered a major success with the children.

Outdoor games and animated games have proven to be an effective way to impact particularly small children. In one form of game used, some children are made to dress up and stand in for Mines and UXOs. Other children are made to play around these objectified children. This tool sends out a very strong positive message of 'avoiding mines and yet continuing with usual play activities.' This tool has been commended by MRE trainers, participants as well as observers as it does not result in a potentially 'Mine Phobia promoting' negative messages to children.

Songs and Rhymes with children
Songs centered on MRE taught to children are modeled on locally popular children's songs. Children love to sing these songs on their way home, at home and at play. Adults too learn MRE through this, even though these adults may only be passive listeners of the singing.

Posters, handbills, pocket and wall Calendars
These printed material with graphic images of mines/UXOs are used extensively by the programme. For instance, school time table marking sheets with colourful images depicting MRE messages are printed on glossy paper and distributed among school children.

These tools are printed in vivid and attractive colors to capture the attention of all those who see them. Older students and teachers reported that particularly younger students were keen on collecting these items.

Further, special care has been taken to ensure that these images depict positive messages where children are encouraged to 'Do something good' rather than 'Not do something bad' in relation to mines/ UXOs. For example unlike the images used before 2002, the messages show children going to school on a well trodden path with a UXO lying in the background in an area marked with a warning sign. No images depicting messages accompanying bloodied mutilated human bodies are used in the programme. This practice is in line with 'positive message approach' prescribed by psychologists for activity/habit preventive advocacy work throughout the world, not only in mine action but also in other spheres such as drug rehabilitation.

Essay and art competitions in schools
Essays and art competitions are used to motivate children to increase their knowledge and perceptions on mines/UXOs. When a competition is called, all students who enter the competition take extra effort to learn and understand the subject matter. This has been found to be a successful method to increase MRE of school children.

Training of teachers
Training programmes are conducted to train teachers so that they would be able impart knowledge to their students. It was considered that training teachers is effective in ensuring the long term benefits of the programme within the schools. Teachers are well placed to impart MRE batch after batch to students who study under them.

Drama in schools

It is the opinion of the key informants that drama in schools have proved to be a very successful tool. The children often get involved actively in the drama. The drama artistes are addressed as 'Midhivedi Anna' ("Landmine brother") affectionately by the school children even long after the programme.

School principles and teachers stated that school based programmes are highly successful, in that they even reach parent populations. Schools take up the theme of MRE for discussion at Parent Teacher Association (PTA) meetings. PTA meetings usually take place weekly.

Children are instrumental in carrying home the MRE messages learnt in schools. Some parents in the households surveyed acknowledged that they heard of MRE from their children.

However, a few alarming instances were highlighted where school principles themselves have displayed irresponsible behaviour.

A certain school principal attached to a school in Vanni, displayed totally irresponsible and negligent behaviour when a UXO was discovered in the school premises. A Rocket Propelled Grenade (RPG) was found in the school backyard in October 2003. Upon seeing this, she requested the school peon to personally carry the mine to WP office which was nearby. The peon cycled to the WP office bearing the UXO on his shoulder with one hand while maneuvering the bicycle with the other hand. Fortunately for all, the UXO did not explode while in this precarious transit. Later the UXO was destroyed. According to records, five MRE programmes have been conducted in this particular school prior to the incident.

In another school in the Paranthan area in Vanni, they had been using a UXO which still had explosive capacity, as a school bell. The UXO was given a beating at least 10 times a day to mark the time. The principal had initially refused to remove the UXO saying that there still was two periods of school work to go, before the school closed for the day. After several pleadings made by the Unicef MRE officer, it was finally removed.

The overall opinion of the key informants was that the Unicef supported MRE programme was a timely intervention helping and giving protection to the beneficiary communities. They acknowledged the benefits of the programme to adults and children alike. As revealed in the key informant interviews, innovative and at the same time effective interventions employed by the project include use of theatre with mine victims as key actors, captivating posters and billboards, community based presentations etc. However, concerns over specific incidents (as explained above) were also highlighted by certain interviewees. The problem of unauthorized demining, in particular, requires further attention in MRE programmes. The findings of key informant interviews point to the need to design MRE messages to counteract specific risk behaviours prevalent in local areas.

4. Chapter Four: Conclusions and Recommendations

This chapter summarizes the conclusions to be drawn from this evaluation and their implications for future policy and action relating to MRE.

4.1 Overview of project impact

An ultimate indicator in assessing the impact of the project is the reduction in mine injuries. The household survey found that the reported prevalence of mine injuries was significantly lower in the project areas compared to the control area, in spite of the reported higher density of minefields in the key project areas (IMSMA data), greater importance of displacement and related problems such as mass return of IDPs in anticipation of peace in the project areas and a reported higher familiarity with mines and UXOs through sheer experience in the control area. Even though mine injuries have steadily declined in all study areas (including control area) since 1998, in the MRE project areas covered by this study, this decline has occurred at a time of large scale influx of IDPs as evident from the fact that almost the entire study population in the project areas consisted of IDPs. Populations in the project areas have demonstrated superior ability to make sound assessment of mine risk and ability to identify and interpret mine/UXO warning signs when compared to areas where there has been no MRE. They have also exhibited good awareness of mine-safe behaviours. Even though the landmine risk in the project areas may be higher compared to that in the control area and the actual familiarity with these explosives through direct personal experience may be similar to or lower than that in the control area, the project areas reported a lower prevalence of injury indicating that their improved risk awareness and improved understanding of risk avoidance practices must be seen as an important cause of the lower prevalence of injury in the project areas surveyed. On the other hand, one would expect that following mine injuries in their immediate vicinity, people would be more risk aware and more cautious in dealing with suspected mines and UXOs. There is some supportive evidence for this hypothesis in Morawewa in that mines are more frequently seen as deadly even though there is also contradictory information in relation to the question whether mines are "always" dangerous. In any case, in Morawewa their actual experience with mine injury and greater familiarity with mines is not combined with an informed risk assessment and a sound understanding of risk avoidance behaviours that only comes with a good MRE programme.

In assessing the impact of the MRE programme in the light of quantitative and qualitative data assembled using this evaluation several cautionary remarks must be made.

First, we must emphasize that any observed positive results in the project area cannot be attributed to MRE alone, as MRE is part of a larger mine action programme that includes demining, mapping of suspected areas and survivor assistance. Any reported reduction in mine injury in the project areas must be seen as an outcome of all mine action, inclusive of MRE. As much as good MRE is necessary for public cooperation towards demining operations, effective demining activities make MRE more relevant and more acceptable to the people as indeed revealed in the key informant interviews with selected persons in both types of programmes. MRE, however, can play a central role in that it raises awareness about mine risk in the community, and thereby prepares the community towards supporting mine action in general. The Sarvodaya work in Jaffna clearly illustrates the need for specific MRE interventions before, during and after demining operations.

Second, apportioning any positive effect of the project among various MRE tools used is impossible in view of their application in combination in almost all project areas. The community based and school based programmes, targeted to different age groups, are expected to have cumulative effects.

Of the tools used, signboards and posters were more effective in the Jaffna district while drama/animation based tools were more effective in Vanni. As each tool has certain specific strengths and limitations in given situations, the project has encouraged the use of multiple tools in each setting. The billboards and posters, displayed in important public venues, tend to convey more general cautionary messages while presentations and dramas can address specific issues relevant to each area. Apart from the separate effect of each intervention, there is also the possibility of interaction effect whereby the message conveyed by one medium may be confirmed, modified or even challenged by another medium. The quality assurance process in the project has tried to ensure the consistency in the messages conveyed by different tools so as to reinforce some key ideas as outlined in the previous chapters. More detailed communication research may be necessary in order to identify how communities and individuals interpret each message given the specificities in their situation.

Third, we cannot rule out the possibility of certain extraneous factors impacting on the reported outcomes. As mentioned in the previous chapter, apart from MRE, differences in level of education, employment, gender and various other factors (e.g. difference between cleared areas and uncleared areas) not individually monitored may partly explain the differences between project areas and the control area as well as among different project areas themselves in regard to knowledge and practices relating to mines and UXOs. In this study it was not possible to control all these extraneous factors, but instead an effort was made to assess their impact wherever possible. A complex multivariate analysis based on a survey of a larger sample may be necessary in order to assess the relative importance of each of these independent variables. As of now we can safely argue that exposure to MRE is an important predictor of mine risk awareness, mine safe behaviour and possibly protection from mine injuries.

Fourth, most of the respondents from project areas indicated in the HH survey that they first learnt about mines/UXOs from friends rather than from specified MRE sources as such. This may be seen as an indicator of the continued importance of social networks in the dissemination of information about mines and UXOs. It does not undermine the significance of MRE sources as they are indeed important as the first source source of information about the topic in some instances at least, and as they can also become a more important informative source later in their understanding of mine risk. It is both possible and likely that MRE contributes toward a ripple effect of MRE spreading via word of mouth among the target groups. While this shows that MRE is not the only source of information about mines/UXOs even in the high intensity project areas, it together with knowledge outcomes indicate the possibility that MRE can stimulate an active information dissemination within the communities using existing social networks.

Finally, anecdotal evidence collected via key informant interviews indicate that there are some instances of unauthorized de-mining, UXO tampering and deliberate disregard for mine risks even in the project areas and sites of intense MRE activity. Such instances tend to have declined over the years with progress in MRE. However, they have by no means completely disappeared as a result of MRE, indicating that MRE alone cannot totally eradicate such behaviours in most instances driven by strong economic incentives. They do not negate the significance of MRE, but simply point to the complexity of factors involved in human behaviour related to mines and UXOs. On the one hand it shows that certain individuals are willing to pay a high value to have land mines removed from their properties and that perhaps mine actions programmes guided by their own priorities do not respond satisfactorily to their personal needs. On the other hand, the availability of unauthorized de-miners indicate the possibility that they either do not know the full dangers associated with their action or

that they know the risk and are willing to risk their lives for the money they get from this lucrative avenue.

4.2 Key strengths of the programme

Integrated approach to mine action enhancing MRE impact.
Mine action involves integration of de-mining, MRE and survivor assistance at field level. This has resulted in a multiplier impact among the beneficiaries. Communities are more involved and interested in MRE when there are other parallel interventions. As with all development interventions with underprivileged and marginalized communities, the benefits have been increased through an integrated rather than a sectoral approach. When mines are removed from the backyards of beneficiaries, they gain first hand experience about the existence of mines. The presence of survivor assistance programmes, increases beneficiary confidence in the implementing agencies. These factors in turn increased the impact of MRE within communities.

Good co-ordination across agencies enabling greater MRE outreach
The project has been implemented through a carefully designed partnership strategy involving two UN agencies, GOSL, LTTE, NGOs and a range of international and local demining agencies. Partner agency linkages are effective due to active networking. District and regional mine action offices have ensured good collaboration between all players in mine action including those outside the United Nations (UN) system. Collaboration networks include GOSL and LTTE, with the yet unrealized potential of the project to serve as a bridge between potentially hostile forces. A target to clear all mine fields by year 2006 is a rather ambitious one. Collaboration has increased synergies toward attaining this goal. Further, effective allocation and sharing of programme target areas/groups has resulted in greater outreach of MRE. All of the DS divisions in Jaffna and Vanni have been exposed to some form of MRE or other according to UNDP IMSMA data.

Up to date information generated through IMSMA useful for MRE planning
IMSMA, which is a state of the art dynamic database for user driven information access, is available for use in monitoring and planning operations. Users are able to obtain information that is specific to their needs. MRE data is input using source documents filled in by MRE implementing agencies. Maps, graphs and other outputs. indicating MRE activities along with their relationship to mine clearance and mine fields are generated by the system. These maps assist MRE agencies to plan MRE activities better. However, the full potential of this database is yet to be realized in terms of actual use, but it is expected that it will help various agencies involved in mine action in time to come.

Active process for quality assurance within MRE to ensure effectiveness..
Trained staff has been mobilized to monitor the quality of programmes. In addition, the QA Process oversees MRE and de-mining and therefore enables linkages between the two functions. The issue of the mine is a sensitive one. As such the caution exercised in screening the nature and the contents of the tools used, strengthens the programme. QA process also feeds forward recommendations for improvements in the future MRE programmes, on a continuous basis. Regular monitoring and

revision and updating of the content of MRE tools have increased relevance and accuracy of MRE messages.

Wide range of tools available for MRE
Multiple tools to suit specific MRE target groups are used as detailed in previous chapters. These tools have been developed during the course of the programme. As beneficiary audiences vary from young children to older persons, it is necessary that appropriate tools are used. The availability of many tools enables implementing agencies to choose the most suited for given target groups and given situations.

Contextualized tools and techniques enhances relevance of MRE.
Tools are adapted to local socio-cultural setting. Tools used to educate school children are very child-friendly. Tools for the public (signboards) are strategically placed. Dramas are scripted based on localized themes. Although some formative research with target populations in developing the relevant messages can further enhance their effectiveness, the project has shown considerable dynamism in updating and streamlining the messages from time to time.

The project has successfully adapted itself to constant changes in the project environment
Even though this project started during the time of active armed conflict, it has successfully adapted itself to various changes in the project environment, including the transition from conflict to post-conflict situation, humanitarian to development phase and the problems posed by mass return of IDPs to potentially hazardous areas. It is one of the few projects that successfully operates in both government-controlled and LTTE controlled areas. It has satisfactorily responded to risks as well as opportunities in diverse project settings.

Sustainability
The projects tends to be sustainable in view of the partnership strategy, long-term viability of some of the tools being developed such as school textbooks and posters, relatively low cost of the operations and maintenance and the goal to eradicate all landmines by 2006. The agreement for the project on the part of GOSL as well as LTTE on a broader level, is another factor that favors the sustainability of the project.

4.3 Key constraints encountered by the programme

Difficulty in reaching vulnerable groups.
Adult working males are the most vulnerable group as they go out in to mine infested areas for various occupations during day time hours. The current MRE programme schedules for active interventions such as presentations and dramas run during day time hours. Therefore there is a possibility that this particular vulnerable group is inadequately exposed to active MRE programmes.

Inadequacy in animated tools

As already noted, the component of drama and games is particularly popular with selected target groups. However, when taken as a percentage of the overall MRE interventions, it is less than optimum. At the key informant interviews it was revealed that such tools are perceived more positively by some of the target groups such as illiterate adults and children. Such groups may find lecture room styled programmes boring and animated tools such as drama and games more interesting. While the current programme already uses drama effectively the volume of such programmes should be increased. In other words, the ratio of drama/theatre to all tools should be increased.

Lack of community specific MRE needs assessment
At the moment there is no satisfactory mechanism to identify and monitor community needs and responses in relation to MRE needs. For instance, the MRE programmes do not satisfactorily address certain aspects of the ground situation in each area such as prevalence of unauthorized demining, UXO tampering and locally specific unsafe behaviours. It is possible that partner agencies do not have adequate skills and resources to undertake necessary assessments at the grass root level.

Difficulties in demonstration of mines/UXOs
Since actual handling of such objects could lead to over- familiarization with mines/UXOs, only pictures are used to display objects. This may lead to non-comprehension of real physical properties of mines/UXOs in spite of the use of proxy to convey actual dimensions.

Lack of l advocacy for banning of landmines
The project has a good potential to promote advocacy for banning of any future use of landmines in Sri Lanka. The advocacy should happen at various levels from the village level upwards. The agents of mine action must be proactive in campaigning for such a ban. A person who may be involved in armed warfare in 10 years from now, could perhaps be a student in a school today. The MRE in schools do not place adequate emphasis on the need to eradicate the use of mines altogether.

Lack of advocacy for stock pile destruction
In spite of the fact that there has been a cessation of armed hostilities, as at present, there is no effective mechanism to campaign for stock pile destruction. In key informant interviews some community leaders expressed the view that all efforts at mine action will be defeated if there is a fresh break out of the war and one party or the other resort to usage of landmines. In other words they emphasize that there should be a stronger drive towards stock pile destruction.

Inconsistencies in MRE source data generation for IMSMA
MRE Source data for IMSMA input are generated in Tamil. They are then translated and entered into the IMSMA system. Even though data translations are done by competent personnel, there still is a certain amount of room for errors. Categories under which the audience type, MRE tool, nature of accident etc. are to be marked, may be misinterpreted by the person entering data, due to prevailing vagueness regarding some of the categories/codes.

4.4 External challenges faced by the programme

Delays in de-mining
Situations have been encountered by the MRE trainers where the communities have been hostile toward MRE efforts due to dissatisfaction with mine clearance rate. In certain instances communities have claimed that mines/UXOs have not been cleared off the fields/gardens near their homes in spite of informing the de-mining agencies. De-mining agencies on the other hand may not have the trained staff capacity to attend to all the individual requests for clearing mines, as soon as the request arises. This is particularly true in the case of nuisance[21] mines. As a result, delays in demining occur.

Returning of IDPs
The sporadic return of IDPs into areas where MRE has already taken place, may result in such people not receiving systematic MRE. IDPs usually return to their villages of origin in small batches. MRE agencies may not repeat MRE programmes in the same village, due to inadequate information about the inflow of IDPs.

Unauthorized demining and irresponsible mine handling by unskilled persons
As illustrated earlier, unauthorized de-mining creates a huge challenge for overall mine action, even though it's prevalence has declined over the years. Unauthorized de-mining not only jeopardizes the lives of those indulging in it, but also in a sense undermines and subverts the systematic de-mining process.

Human rights issues in MRE
There is also a degree of concern over a possible violation of human rights, in placing excessive restrictions on 'freedom of movement' of the farmers. Freedom to move about and cultivate for a livelihood, is a basic right of people in an agrarian environment such as Vanni. Any moves to place undue restrictions on people on the part of mine action agencies may result in adverse consequences, as the affected public may view the programme with skepticism.

> In one instance a farmer made the following statement to a member of the evaluation team.
>> "When given a choice between cultivating in potential minefields and not having a livelihood what shall we choose? If you step on a mine you may lose a limb. But if you don't cultivate you may starve to death!"

4.5 Recommendations

Tailor-made MRE for specially vulnerable target groups
Programmes should be conducted during appropriate hours in order to reach out to the 'adult working male' target group. This target group has to be given special consideration when deciding on the time, venue and the tools used for training. Mine risks encountered by farmers, fishermen,

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[21] Mines which do not follow a discernable pattern and surface in isolation.

casual wage labourers, those collecting forest products and other such categories must be addressed as relevant in such programmes.

Appropriate and optimum mix of MRE tools for each setting must be identified and applied.
Tools have to be revised and modified from time to time to keep the interest alive. Excessive familiarity with a billboard for instance, may lead to a reduction of its attraction. As such tools should be modified in keeping with the mood of times. Unnecessary repetition should be avoided.

Drama/animation component of the programmes should be given prominence particularly in programmes targeting children and those from lower educational backgrounds. Efforts should be made to share and exchange experiences among different partner organizations about the effectiveness of their various interventions. Periodic monitoring must seek to assess relative effectiveness of different interventions in each setting. Formative research with identified target groups must be used in developing appropriate tools for a given context.

A community-based needs assessment must precede MRE
The community context, knowledge, attitudes and practices, needs, risks and opportunities must be better understood by MRE agencies working in each area. This may be done through a rapid assessment along the lines currently done by MAG in preparation for demining. Possibilities for collaborating with MAG in this regard must be explored. This assessment will enable MRE agencies to better orient the MRE programmes to the requirements and felt needs of the target populations. The partners or at least the project must have an in-house social science capacity to help facilitate such assessments.

MRE strategies for short, medium and long term must be carefully developed
In the short and medium term, the problems of IDPs and new settlers must receive priority attention in MRE and mine action in general. As long as de-mining takes place, there would be a need for MRE. Even when de-mining is over it would not necessarily mean that the land is 100% clear of mines. As such there should be a mechanism to provide MRE on a long term basis. The step already taken to incorporate MRE to the national school curriculum should be strengthened. Other possible long-term strategies include integration of MRE in the work of community health workers such as Family Health Workers.

Temporary visitors to Northeast must be given adequate warning about mine risk
There are many   temporary visitors to Jaffna from overseas. In addition there are also those southern people who visit the Northeast for sight seeing and pilgrimage. These groups have to be targeted through appropriate mass/small media. An MRE brochure may be kept in the air craft for each passenger, in flights operating from Jaffna to Colombo. Alternatively they could be distributed at the airports. Unicef could co-ordinate with the airline companies and/or the aviation authorities.

Those who travel to Vanni go through SLA and LTTE checkpoints in Omanthai, (Vavuniya) and Muhamaalai (Jaffna) Leaflets/brochures could be distributed to these entrants as and when they arrive. In addition, large billboards may be displayed close to the traveler waiting areas within these check points.

Quick Response Teams (QRT) to be strengthened through mine action offices
Small Quick response teams should be singled out from among de-miners and they should have stronger linkages with MRE teams. These de-miners should pay visits to communities along with MRE trainers, preferably at the time of community needs assessment mentioned above. This would facilitate better coordination between demining and MRE.

Returnee IDPs to be given adequate MRE
MRE training should be strengthened in IDP welfare centers so that the IDPs may return to their original villages equipped with knowledge about mine risk. Relevant maps / information could be used in this respect. This is because reaching small batches of people with MRE after they settle down can be difficult. Another step in this respect would be to encourage the communities to carry MRE messages to new entrants in their villages.

Approaches to contain unauthorized demining and tampering of UXOs.
Different approaches to address this problem include identifying and enforcing appropriate legal measures against these activities, training community members in basic demining and promoting a better fit between community expectations and official demining operations. Only the last of these options can be recommended as an immediate solution to this problem. The validity, effectiveness and possible adverse consequences of any legal interventions and/ or community-based basic demining must be carefully assessed before advocating either of these strategies.

Advocacy towards appropriate policy formulation
In collaboration with its partners and other stakeholders the project must try to advocate to all relevant parties to affirm their commitment to existing international conventions against use and stockpiling of landmines. An initial dialogue regarding this issue can take place among the key partners. Other areas where advocacy is needed are social protection for mine victims and their families, promoting social networks supportive of mine action in general and long-term sustainability of MRE activities.